CORONERS ACT, 2003

SOUTH *AUSTRALIA*

FINDING OF INQUEST

An Inquest taken on behalf of our Sovereign Lady the Queen at Adelaide in the State of South Australia, on the 3rd, 4th, 5th, 6th, 9th, 10th, 11th, 12th and 26th days of February 2015, the 2nd day of March 2015 and the 25th day of May 2016, by the Coroner's Court of the said State, constituted of Anthony Ernest Schapel, Deputy State Coroner, into the death of Mellanie Joanne Paltridge.

The said Court finds that Mellanie Joanne Paltridge aged 25 years, late of 170 Marian Road, Glynde, South Australia died at the Women's and Children's Hospital, King William Road, North Adelaide, South Australia on the 15th day of April 2012 as a result of a ruptured splenic artery aneurysm. The said Court finds that the circumstances of her death were as follows:

1. Introduction and reason for Inquest

1.1. Mellanie Joanne Paltridge died at the Women's and Children's Hospital (the WCH) on 15 April 2012. She was 25 years of age. Mrs Paltridge was 23 weeks pregnant at the time of her death.

1.2. The cause of Mrs Paltridge's death was a ruptured splenic artery aneurysm. This cause of death was established by way of an autopsy conducted by Dr Tek Yee Khong who is a pathologist with the State Perinatal Autopsy Service, an arm of SA Pathology. The actual cause of Mrs Paltridge's death was the haemorrhage and internal blood loss that had resulted from the rupture of the blood vessel in question, namely the splenic artery. At a stage very late in her presentation internal abdominal haemorrhage had been suspected as being the cause of that presentation. Mrs Paltridge was taken to the operating theatre. She experienced a cardiac arrest shortly after the administration of

the general anaesthetic. Ongoing resuscitative measures that occurred during her surgery were unsuccessful. Mrs Paltridge died on the operating table. The precise source of the internal haemorrhage would only be established with clarity during Dr Khong's post-mortem examination.

1.3. Mrs Paltridge's pregnancy was her first. It had been uneventful. The baby girl, Mackenzie, also died.

1.4. During the afternoon of Saturday 14 April 2012 Mrs Paltridge had collapsed at a shopping complex. An ambulance was called. Paramedics arrived on the scene shortly after 1pm. The South Australian Ambulance Service (SAAS) patient report form[1] records Mrs Paltridge as having experienced a sudden onset of left abdominal pain whilst shopping. She was found by SAAS to be lying on a shop floor on her left side grasping the left side of her abdomen. She was recorded as having collapsed with pain, but she expressed some uncertainty as to whether there had been a loss of consciousness. There was no per vaginal loss. The type of pain is recorded on the SAAS form as being '*L) UQ abdo pain*'. This is an abbreviation for left upper quadrant abdominal pain.

1.5. Mrs Paltridge was conveyed by ambulance to the WCH. She arrived in the Emergency Department at about 1:45pm. There she was recorded as experiencing left upper quadrant constant pain with generalised abdominal tenderness. Her vital signs were unremarkable. The incident at the shopping complex is recorded within the WCH notes as having involved a sudden onset of left sided abdominal pain like a '*bad stitch*' with light headedness, blurred vision, ringing in the ears and blacking out. There is reference initially to Mrs Paltridge having fainted in the shopping complex. This information may have come from Mrs Paltridge's husband. I think it is fairly clear that Mrs Paltridge did suffer a period of loss of consciousness associated with the sudden onset of left upper quadrant pain. I so find. If I am incorrect in that finding, there was nevertheless good reason for clinicians at the WCH to conclude that there was a strong possibility that Mrs Paltridge had experienced a loss of consciousness. Put in another way, the possibility that Mrs Paltridge had experienced a loss of consciousness could not be discounted as part of the symptomatology that she had displayed at the time of her collapse at the shopping complex. The strong possibility of a loss of consciousness

[1] Exhibit C6, page 121-122

as part of Mrs Paltridge's original presentation meant that this was a sign or symptom that needed to be taken into consideration in conjunction with the other aspects of her presentation, namely the severity of the pain and the location of that pain.

1.6. I have already mentioned the fact that Mrs Paltridge died on the operating table the following day. Mrs Paltridge was certified deceased at 12:20pm that day. Mrs Paltridge's admission to hospital following her presentation by ambulance on the afternoon of Saturday 14 April 2012 had been uninterrupted. She had been at the WCH the whole time. During that admission Mrs Paltridge was seen and examined by a number of medical practitioners of various ranks and experience. However, she was not seen at any time by a medical practitioner at consultant level until she was in extremis on the morning of the day of her death. At no stage was Mrs Paltridge the subject of a definitive diagnosis. An internal abdominal haemorrhage was only suspected once she was in extremis and was only determined once her abdomen was opened on the operating table and, as indicated earlier, the responsible blood vessel was only identified at post mortem.

1.7. There is little doubt, and I so find, that at the time Mrs Paltridge experienced her collapse while shopping during the afternoon of Saturday 14 April 2012 she had suffered a non-catastrophic rupture of a splenic artery aneurysm and that there had been an internal haemorrhage which was at that stage contained. It was only later that the ruptured blood vessel bled catastrophically and fatally for Mrs Paltridge. The signs and symptoms that Mrs Paltridge displayed at the time of her collapse, during her examination by paramedics and throughout her admission in the hospital were those of a ruptured splenic artery aneurysm.

1.8. This Inquest examined the cause and circumstances of Mrs Paltridge's death and in particular why it was that a diagnosis of Mrs Paltridge's ruptured splenic artery aneurysm was not made during the several hours of her hospital admission before she experienced a catastrophic bleed and became virtually unsalvageable despite surgery. The Court also examined whether Mrs Paltridge's death may have been prevented.

2. Background

2.1. The splenic artery is a blood vessel that supplies blood to the spleen. As is widely understood a person's spleen might, for various reasons, including trauma, be removed during a person's life without undue complication. Mrs Paltridge's condition was not

as a result of trauma. A splenic artery aneurysm in itself is a condition that is not commonly diagnosed as for the most part it displays limited or no symptoms. The existence of an aneurysm does not of itself pose an immediate danger to the wellbeing of a person. The aneurysm's potential to rupture poses the danger. Very often the existence of a splenic artery aneurysm is recognised only as an incidental finding when other examinations have occurred, or during a post mortem examination. The rupture of a splenic artery aneurysm is also uncommon, but its consequences are life threatening and can be catastrophic. The incidence of splenic artery aneurysm and rupture of splenic artery aneurysm is more common in pregnancy. Splenic artery aneurysm and ruptured splenic artery aneurysm have been described variously as '*rare*'[2], '*an uncommon pathology*'[3], '*very rare*'[4], '*relatively uncommon*'[5], '*an unusual event*'[6], '*a rare event with catastrophic consequences*'[7], '*a rare but catastrophic complication of pregnancy*'[8], '*a rare, life threatening event with a catastrophic prognosis*'[9], and '*both rare and difficult to diagnose*'[10].

2.2. The reason that splenic artery aneurysm and ruptured splenic artery aneurysm are more commonly seen in pregnancy is thought to be connected with increased blood circulation within the pregnant woman and pressure from the expanding uterus onto the splenic artery. Statistics from the National Coronial Information System database reveal that since 2000 there have been 8 deaths of pregnant women in Australia from ruptured splenic artery aneurysm. These deaths include those of Mrs Paltridge and a Ms Monique Hooper who died in 2009. Ms Hooper's death also occurred at the WCH after a period of admission. Ms Hooper's splenic artery aneurysm and its rupture had also remained undiagnosed prior to surgery. As far as I know, the only death from this cause to have been the subject of a coronial Inquest was that of a Ms Michelle Johnson

[2] Exhibit C9a, 'Splenic artery aneurysm', Shih, Golden and Mohler, Vascular Medicine **2002**; 7: 155-156)
[3] Exhibit C9b, 'Splenic artery aneurysms in pregnancy – A systematic review', Sadat, Umar et al, International Journal of Surgery, **2008** Volume 6, Issue 3, 261-265
[4] Exhibit C19, Report of Professor Pepperell
[5] Exhibit C19b, 'Splenic Artery Aneurysms and Pseudoaneurysms: Clinical Distinctions and CT Appearances', Agrawal, Johnson and Fishman, American Journal of Roentgenology **2007** 188:4, 992-999
[6] Exhibit C19c, Elizabeth K. Corey, Scott A. Harvey, Lynnae M. Sauvage, and Justin C. Bohrer, "A Case of Ruptured Splenic Artery Aneurysm in Pregnancy", Case Reports in Obstetrics and Gynecology, vol. 2014, Article ID 793735, 3 pages, 2014),
[7] Exhibit C19d, 'Ruptured splenic artery aneurysm in pregnancy - Twelfth reported case with maternal and fetal survival', Caillouette and Merchant, **1993** 168(6 Pt 1):1810-1
[8] Exhibit C19f, 'Arterial aneurysms of the lienorenal axis during pregnancy', Popham and Buettner, **2003** International Journal of Obstetric Anesthesia, Volume 12, Issue 2, 117-119
[9] Exhibit C22a, 'Case Report - Rupture of splenic artery aneurysm during early pregnancy: a rare and catastrophic event, Chookun, Bounes, Ducassé and Fourcade, **2009** American Journal of Emergency Medicine; 27(7):898.e5-6
[10] Transcript, page 633, the evidence of Professor Alec Welsh

who died in Victoria in 2010. The finding in relation to that Inquest was handed down by the Coroners Court of Victoria on 21 March 2014.

2.3. Symptoms of a ruptured splenic artery aneurysm can include left upper quadrant pain, shoulder tip pain (Kehr's sign), haemodynamic instability and loss of consciousness. The clinical course of a ruptured splenic artery aneurysm may sometimes be characterised by what has been referred to as a '*double rupture phenomenon*'[11]. This is a reference to the fact that while a splenic artery aneurysm can immediately rupture freely and often catastrophically into the peritoneum, it might bleed in the first instance into the lesser omental sac followed later by rupture of the resulting haematoma into the free abdominal cavity. In double rupture phenomenon, bleeding is initially contained within the lesser sac and can be accompanied by syncope (fainting or loss of consciousness), hypotension and flank pain. Partial tamponade occurs when the lesser sac fills with clot, allowing for recovery of the patient's blood pressure. A period of minutes to weeks may elapse before the second rupture occurs. The second rupture is marked by escape of clots from the foramen of Winslow which permits bleeding into the peritoneal cavity. This syndrome may manifest itself in the patient's presentation by way of an initial sudden onset of abdominal pain and collapse followed by a period of relative stability, but then a fatal haemorrhage and possibly death. As will be seen, in this case and in that of the earlier death of Ms Hooper, such a syndrome was at work. In Mrs Paltridge's case there may have been a three stage process in her presentation.

2.4. I have referred to some of the classical literary statements about the incidence of ruptured splenic artery aneurysm and its consequences. The evidence suggested that in a pregnant woman a ruptured splenic artery aneurysm involves mortality in the woman herself at a rate of 75%, with a foetal mortality rate of 95%. Other slightly modified percentages were also mentioned in the evidence. Suffice it to say, the serious consequences as well as the frequency of fatal outcomes in respect of a ruptured splenic artery aneurysm are matters that very much complicate the rarity of such a pathology. In other words, to say glibly that the condition is rare, uncommonly encountered or difficult to diagnose is to understate the seriousness of the condition.

2.5. Several examples of medical literature concerning the condition were tendered to the Court. These scientific articles for the most part dealt with the pathology of ruptured

[11] Example C9b, page 994

splenic artery aneurysm in pregnancy and in many cases were based on case studies. The literature is unanimous insofar as it suggests that a ruptured splenic artery aneurysm in a pregnant woman is a rare circumstance but one which has very high mortality rates both in respect of the pregnant woman and of the baby. The literature also refers to the difficulty in diagnosis, but it does not suggest that the difficulty amounts to impossibility. That said, difficulty in diagnosis would be made all the more difficult by professional ignorance of the condition and of its clinical features as described in the literature.

2.6. It is worthwhile examining some of the conclusions and recommendations set out in the literature as well as the points in history in the last 25 years in which this literature has come into being. Tendered to the Court were a number of academic medical publications concerning ruptured splenic artery aneurysm in pregnancy. These publications date between 1993 and 2009. There may be other publications in existence, but these were the ones that were brought to the Court's attention. I here set out examples of the commentary that was contained within this literature.

> 'A diagnosis of ruptured splenic artery aneurysm should be considered in any pregnant patient who complains of the sudden onset of severe left upper abdominal pain, regardless of whether pain or shock is prominent at the time of evaluation. A heightened awareness among obstetricians will enhance the management of this condition and improve the rates of maternal and fetal survival.'
>
> > **1993** 'Ruptured splenic artery aneurysm in pregnancy - Twelfth reported case with maternal and fetal survival', Caillouette and Merchant, American Journal of Obstetrics and Gynecology. Vol 168, Number 6 Part 1 page 1810[12]
>
> 'Maternal and foetal survival depends upon physician awareness of the possibility of splenic artery aneurysm rupture during pregnancy or labour, prompt recognition of the signs and symptoms of the condition, and immediate surgery to arrest haemorrhage.'
>
> 'It is hoped that this report and description of the prodromal signs and symptoms associated with splenic artery aneurysm rupture may alert obstetrician and surgeon to its occurrence during labor, so that future cases may also have a successful outcome.'
>
> > **1993** 'Splenic Artery Aneurysm Rupture During Pregnancy', Angelakis, Bair, Barone and Lincer, Review – Obstetrical and Gynecological Survey)[13]
>
> 'A high level of suspicion is mandatory in all pregnant patients with sudden cardiovascular collapse, together with immediate surgery if and when the diagnosis appears likely.'

[12] Exhibit C19d
[13] Exhibit C19c

2003 'Arterial aneurysms of the lienorenal axis during pregnancy', Popham and Buettner, International Journal of Obstetric Anesthesia , Volume 12 , Issue 2 , 117-119)[14]

'Rupture during pregnancy is associated with a very high maternal and fetal mortality rate. Although this condition is uncommon, good materno-fetal outcome can only be achieved by early diagnosis and prompt treatment. It is therefore important to increase awareness of this condition so that obstetricians and other frontline staff can entertain the diagnosis of a ruptured splenic artery aneurysm in any pregnant woman who presents with severe upper abdominal pain.'

'Obstetricians and other frontline staff must consider this potentially lethal condition in the differential diagnosis of severe upper abdominal pain in pregnancy if this grim case-fatality rate is to improve.'

'A diagnosis of ruptured SAA should be considered in any pregnant woman who presents with severe left upper abdominal pain or in hypovolemic shock. It is essential that obstetricians are alert to the prodromal and catastrophic symptoms of SAA. A high index of suspicion, early recognition and prompt management, including early involvement of a general surgeon, are vital to the survival of both mother and fetus.'

2003 'Review: Spontaneous rupture of splenic artery aneurysm in pregnancy', Selo-Ojeme and Welch, European Journal of Obstetrics and Gynecology and Reproductive Biology, Volume 109, Issue 2, 124-127)[15]

'Because of the high risk of rupture and the high mortality rate if splenic artery pseudoaneurysm ruptures, the earliest possible intervention is deemed necessary.'

2007 'Splenic Artery Aneurysms and Pseudoaneurysms: Clinical Distinctions and CT Appearances', Agrawal, Johnson and Fishman, American Journal of Roentgenology 188:4, 992-999)[16]

'Although this is a rare event, because of the associated catastrophic consequences, prompt management of splenic artery aneurysms (SAA) is of prime importance.'

'In emergency settings, high degree of suspicion is required to make diagnosis of SAA rupture in pregnant females having sudden collapse with or without sharp abdominal pain. Immediate resuscitation and cessation of haemorrhage is essential for maternal and fetal survival.'

'… obstetricians should involve vascular surgeons and interventional radiologists as soon as they suspect SAA.'

2008 'Splenic artery aneurysms in pregnancy – A systematic review', Sadat et al, International Journal of Surgery, Volume 6, Issue 3, 261-265)[17]

'This case report aims to warn the physician that hemoperitoneum during the first trimester is not exclusively caused by ectopic pregnancy. Ruptured SAA should be kept in mind in

[14] Exhibit C19f
[15] Exhibit C19e
[16] Exhibit C19b
[17] Exhibit C9b

a differential diagnosis despite its low frequency because its management involves a different surgeon.'

> **2009** 'Case Report - Rupture of splenic artery aneurysm during early pregnancy: a rare and catastrophic event, Chookun, Bounes, Ducassé and Fourcade, American Journal of Emergency Medicine, 27(7):898.e5-6[18]

'Ruptured SAA should be considered in the differential diagnosis of a pregnant patient with severe and unexplained abdominal pain, regardless of whether pain or shock is the most prominent feature at the time of evaluation.'

> **2009** 'Splenic artery aneurysm rupture in pregnancy', Fong Ha J, Phillips and Faulkner, European Journal of Obstetrics and Gynecology and Reproductive Biology, 146(2):133-7 (Ha JF, University of Western Australia & Department of General Surgery, St John of God Hospital, Subiaco, Western Australia) (Phillips M, Western Australia Institute of Medical Research, Royal Perth Hospital and University of Western Australia) (Faulkner K, Department of Surgery, University of Western Australia, General Surgery Consultant, St John of God Hospital, Subiaco & University of Notre Dame, Fremantle, Western Australia)[19]

3. The death of Monique Ann Hooper in 2009

3.1. Monique Hooper was a 42 year old woman who was 37 weeks pregnant. Ms Hooper died from a spontaneous splenic artery rupture. On 10 August 2009 Ms Hooper presented to the Women's Assessment Service at the WCH. She had developed upper abdominal pain after bending over to catch her child who was running past her. The pain is described at first as being sudden, constant and severe with associated dizziness[20]. On examination she was haemodynamically stable with some fundal tenderness. Informal ultrasound showed no abnormality. Ms Hooper was treated with simple analgesia and the pain settled well. After some hours she was discharged from the Women's Assessment Service, but she then experienced a fainting episode in the hospital foyer and was returned to the Women's Assessment Service. At the second assessment Ms Hooper was clammy and initially hypotensive, but her blood pressure picked up without intervention. She was not tachycardic. A decision was made for her admission and transfer to the hospital delivery suite for close monitoring. At the delivery suite Ms Hooper experienced a sudden increase in pain with associated loss of foetal heart rate as detected by cardiotocograph (CTG). Immediate ultrasound showed foetal bradycardia and Ms Hooper was rushed to theatre for an emergency caesarean section under general anaesthetic. On opening the abdomen there was an extensive

[18] Exhibit C22a
[19] Exhibit C9c
[20] Exhibit C8, pages 40-42

quantity of blood within. The baby was rapidly delivered and required resuscitation. The baby survived.

3.2. Following delivery of the baby Ms Hooper went into cardiac arrest. A vascular surgeon from The Queen Elizabeth Hospital was brought into the matter. The bleeding point was identified as a ruptured splenic artery aneurysm. Although spontaneous cardiac activity was restored after several minutes of resuscitation, following which Ms Hooper was retrieved to The Queen Elizabeth Hospital Intensive Care Unit, she unfortunately passed away.

3.3. The parallels with the death of Mrs Paltridge that occurred two years later are manifest. I reject the contention that her presentation was materially different from that of Mrs Paltridge. The strikingly similar features of commonality between the two presentations are the presentation of sudden onset upper abdominal pain and a period of relative haemodynamic stability with a further collapse. I allow of course for the fact that in Mrs Paltridge's case the intervening period of stability would hold less significance to clinicians during the period before her ultimate fatal collapse than after it. But the cause and mechanism of death were essentially identical in each case. The other important feature of commonality between the cases of Ms Hooper and Mrs Paltridge was that in neither case was a ruptured splenic artery aneurysm diagnosed prior to surgery that took place after both women were in extremis, and in Mrs Paltridge's case, not until the post mortem examination. Contrary to the submission of counsel for the hospital, Dr Bleby SC, Ms Hooper had not presented in shock in the first instance.

3.4. A coronial Inquest did not take place in relation to Ms Hooper's death.

3.5. Tendered in evidence during the course of the Inquest was the Twenty-fourth Report of the Maternal, Perinatal and Infant Mortality Committee on maternal, perinatal and post-neonatal deaths in 2009 including the South Australian Protocol for Investigation of Stillbirths (the 24th Report). I shall refer to the body described in the title of that document as 'the Committee'. The introduction of the 24th Report on page 13 states that the Committee is an authorised quality improvement body established under Part 7 of the Health Care Act 2008. The Committee's stated terms of reference are to advise the Chief Executive of SA Health on three defined matters as follows:

> '1. The pattern and causation of maternal, perinatal and infant deaths in the state;

2. The avoidability of any factors associated with such deaths and any measures which could be taken to assist with the prevention of such deaths, including improvements in health services in the state;

3. Education and training for members of the medical, midwifery and nursing professions and for the community generally in order to assist in the reduction of maternal, perinatal and infant morbidity and mortality in the state.'

3.6. There is a sub-committee of the Committee known as the Maternal Subcommittee (the Subcommittee). The terms of reference of the Subcommittee, as set out in Appendix 1 to the 24th Report, are as follows:

'1. To review the causes of death associated with pregnancy and childbirth; to determine whether these may have been preventable, and to establish what were the avoidable factors, if any, presented in the case history;

2. To report to the Maternal, Perinatal and Infant Mortality Committee;

3. To undertake review, educational and advisory roles as appropriate from time to time, by initiation or by invitation.'

3.7. The salient functions of both committees were stated to be education and prevention. Unfortunately, transparency and true accountability of an inquiry's participants are not stated as having importance in the functions of either committee.

3.8. At page 17 of the 24th Report under the heading, '**2. Causes of Maternal Deaths 2009**', reference is made to a maternal death that was attributed to irreversible shock due to severe coagulopathy following haemorrhage from a ruptured splenic artery aneurysm complicating late pregnancy. The information that then follows contains reference to the woman's presentation and surgery. The 24th Report does not name the woman in question and does not identify the hospital at which the described events occurred. It is assumed that the reference in the 24th Report to this death is as a result of the Subcommittee's activities in respect of that death. Although within the 24th Report there is provision for the setting out of any recommendations that may have been made consequent upon investigations such as the one under discussion, the document is silent as to whether any such recommendations were made in that case.

3.9. There is good reason to believe that the de-identified woman referred to at page 17 of the 24th Report is Ms Hooper. There would have been no impediment, legal or otherwise, for those representing the hospital from advising this Court if the woman in question had not been Ms Hooper. There is no doubt that Ms Hooper is the de-identified woman and I so find.

3.10. At page 18 of the 24th Report the Subcommittee's recommendations for the year in question are set out. There is only one such recommendation which clearly does not relate to the matter described on page 17. I infer that the Subcommittee made no recommendation in respect of the matter of Ms Hooper. Dr Bleby SC, for and on behalf of the hospital and the Chief Executive of SA Health, did not seek to persuade me otherwise.

3.11. The lack of any recommendation arising out of the Subcommittee's activities in relation to Ms Hooper's death is perplexing, particularly having regard to the existence of the literature that I have described above, the Committee's salient functions of education and prevention, and the fact that the hospital in question was and is a tertiary teaching hospital in respect of maternal medicine. There were clear and valuable lessons that could have been learnt from Ms Hooper's death. There is little or no evidence that they were, such that the 'frontline' medical practitioners who would treat Mrs Paltridge in 2012 were, while not being completely clueless as to the condition, had an imperfect and at times demonstrably erroneous grasp of what a presentation of ruptured splenic artery aneurysm might look like. One would have thought that the WCH would have seized upon this as an opportunity to position itself as an authority in respect of the condition. Instead, save and except for that de-identified and very general material disclosed in the 24th Report, a statutory curtain of secrecy that Part 7 of the Health Care Act 2008 mandatorily provides was erected and maintained in relation to the whole affair.

3.12. The rarity of the condition of ruptured splenic artery aneurysm cannot not be prayed in aid as justification for any lack of educational or preventive initiative arising from Ms Hooper's death.

3.13. During the course of the Inquest a summons directed to the Chief Executive of SA Health to produce any documentation received by, created by, or otherwise in possession of the Maternal, Perinatal and Infant Mortality Committee, relating to the death of Monique Ann Hooper, including any report of said committee relating to her death and any such document or report in relation to the maternal death described in the 24th Report of the said committee at page 17, was served on the Chief Executive. As indicated in this Court's ruling in respect of an objection to the summons taken on behalf of the Chief Executive, the experience of the WCH with the death of Ms Hooper was relevant to the issues in this Inquest for a number of reasons, including that it was

pertinent for this Court to enquire as to whether any diagnostic lessons had been learned from that experience such that a higher level of knowledge about the condition and about its methodology of diagnosis may have led to an earlier diagnosis of Mrs Paltridge and have prevented her death. The Court was keen to identify the nature of any inquiry that may have been made within the WCH or within SA Health as to the circumstances of Ms Hooper's death and to ascertain the nature of any remedial measures that may have been adopted to reduce the likelihood of such an event being repeated. To this end the Court wished to examine any recommendations that may have been resulted from any such inquiry. I overruled the Chief Executive's objection to the summons. The Full Court of the Supreme Court of South Australia[21] reversed my ruling and upheld the objection to the production of that material pursuant to Part 7 of the Health Care Act 2008. The effect of that legislation is discussed in both the judgment of the Full Court and in my original ruling of 2 March 2015. The intricacies of that legislation do not need to be discussed here. Suffice it to say the legislation curtails the disclosure of information gained as a result of, or in connection with, an activity of a committee such as the one under discussion here. Disclosure to a court, such as this Court, is specifically prohibited. In the case of material to which Part 7 applies, there exists an exception relating to information that does not identify, either expressly or by implication, a particular person or persons. The prohibition extends to the disclosure of identifying information to the Chief Executive of SA Health notwithstanding that the terms of reference of both the Committee and the Subcommittee include a duty to advise the Chief Executive of the matters as set out in paragraphs 3.5 and 3.6 herein[22]. The activities of the Subcommittee in Ms Hooper's matter have proved to be impenetrable.

3.14. In the parliamentary second reading speech of the Minister for Health the functions of Part 7 and Part 8 of the Health Care Bill as the Act then was were discussed. The Minister stated as follows:

> 'The provisions in the Bill supports clinicians, managers and others to communicate openly and honestly in assessing the process and outcomes of the provision of health services where there has been a significant adverse event and to make recommendations for system improvements. This is most likely to happen where those involved are secure in the knowledge that what they divulge cannot be made public or used in any proceedings. The Bill, in promoting full and frank discussion in a "protected" environment for the purposes

[21] [2015] SASCFC 159
[22] [2015] SASCFC 159 at [55] per Vanstone J with whom Kelly J agreed

> of facilitating quality improvement in health services, maintains the right to have access to or disclose information in the public interest.'

The assumption underlying this legislation appears to be that clinicians, managers and others may not be as frank or as candid as they might otherwise be if the information that they provide to a committee inquiry, or even their identities, was or were made widely known. These provisions operate in a medical environment where one would think that a clinician's professionalism would prove to be sufficient impetus for that person to conduct themselves with complete candour in such an inquiry. Indeed, some might say that complete candour would most likely be secured by the oath. Yet, it is thought, secrecy is an intrinsic ingredient to frankness. It is difficult to think of any other profession where its members are furnished with such an indulgence.

3.15. There are other reasons why blanket secrecy in connection with internal investigations into adverse medical events is undesirable. It needs to be remembered that the State Coroner is charged with a statutory responsibility to investigate adverse medical events and, if necessary and desirable, to conduct Inquests in respect of the same. This statutory obligation is reflected in the fact that it is mandatory for deaths that have occurred as a result of, or within 24 hours of, the carrying out of a surgical procedure or of an invasive medical or diagnostic procedure, or within 24 hours of the administration of anaesthetic for the purposes of carrying out such a procedure, as well as deaths that occur within 24 hours of a person having been discharged from a hospital after being an inpatient of the hospital or having sought emergency treatment at the hospital, to be reported to the State Coroner. The integrity of a coronial Inquest into the cause and circumstances of a death of the kind just described can be seriously compromised if this Court is denied access to statements that material witnesses have made to a secret internal inquiry, especially given the fact that what a witness has said to such a secret inquiry is probably not given under oath and may well be inconsistent with what the witness might tell investigating police or say under oath in a coronial Inquest. It is hardly in the public interest for coronial Inquests to proceed under such a forensic disadvantage.

3.16. I make one further observation concerning Parts 7 and 8 of the Health Care Act. Contrary to the final sentence in the Minister's speech as reproduced in the preceding paragraph, I fail to see anywhere in either Part reference to the maintaining of any right to have access to or disclose information in the public interest.

3.17. Professor Roger Pepperell is an experienced obstetrician and gynaecologist who has provided an expert overview of Mrs Paltridge's management. He provided a report and also gave oral evidence in the Inquest. He described what many might consider to be a sensible, satisfying and professional response to an incident such as that involving the death of Ms Hooper. In his evidence Professor Pepperell pointed out that he had worked in a teaching hospital for close to 40 years where the management of issues such as those that arose from Ms Hooper's death would involve measures designed to ensure that staff were made aware of the matter and that the matter becomes part of the written documentation within the hospital for people who later join the clinical staff of that hospital to see for themselves what response had been made to a previous incident[23]. With regard to a matter such as that involving Ms Hooper, Professor Pepperell suggested that in all major teaching hospitals that he was aware of, and certainly within the Royal Women's Hospital in Melbourne, meetings are conducted where perinatal mortality and morbidity is discussed in detail:

> '… so that the whole process is brought out into the open so everyone is made aware of it and, if possible, a statement is made in the obstetric data file of the hospital as to when certain things need to be done and when special evaluations need to be performed, and those statements would normally be made after a disaster has happened where there seemed to be something that perhaps could be done in the future to try and prevent that from happening again, not indicating that there was a deficiency in care, but indicating what it can possibly be done to reduce the likelihood of that particular problem not being recognised as earlier as it might be.' [24]

4. Professor Pepperell suggested that a doctor, say at the rank of resident medical officer, might know so little about a condition such as splenic artery aneurysm that they would not ever consider that such a diagnosis needed to be considered. Professor Pepperell added to this that the relevant hospital would need to promulgate a statement and advice to staff that if a patient presented with upper abdominal pain, particularly left sided upper abdominal pain, the possibility of this being due to a splenic artery aneurysm, which can be lethal, needs to be at least considered. For the Court's part that would appear to be sensible and essential advice that accords with the literature that has been identified in this finding.

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[23] Transcript, page 549
[24] Transcript, pages 548-549

5. The death of Michelle Johnson in Victoria in 2010

5.1. I take the facts surrounding the March 2010 death of Ms Johnson from the official finding of the Victorian Coroners Court dated 21 March 2014.

5.2. Ms Johnson was 31 years of age at the time of her death. She was 32 weeks pregnant in her first pregnancy. The cause of her death was found to have been ruptured splenic artery aneurysm.

5.3. Ms Johnson had been dancing at a party when she experienced a sudden onset of quite severe left sided abdominal pain followed by dizziness and faintness. At the Royal Women's Hospital it was considered that the most likely diagnosis was severe musculoskeletal pain brought on by the movement of dancing. She was given strong analgesia. Her observations during her admission were essentially normal.

5.4. Ms Johnson remained within the hospital from 12:10am on Sunday 21 March 2010 to sometime during the evening of Sunday 21 March 2010 when she was discharged home. At approximately 6:50am the following morning Ms Johnson experienced a fatal collapse and seizure. Ms Johnson was returned to the Royal Women's Hospital where she experienced a cardiac arrest and she was pronounced deceased at 7:50am.

5.5. These events occurred after the death of Ms Hooper in Adelaide in 2009 and before the death of Mrs Paltridge in Adelaide in 2012. As indicated earlier, the findings of the Inquest were delivered in Victoria in March 2014. The parallels between the circumstances surrounding the death of Ms Johnson and those of Ms Hooper and Mrs Paltridge are manifest. The principal reason that this Court has had regard to what happened in respect of Ms Johnson is that the finding of the Victorian Coroners Court reveals that a meeting of the Maternal Mortality and Morbidity subcommittee of the Consultative Council of Obstetric and Paediatric Mortality and Morbidity in Victoria, shortly before the delivery of that Court's finding, made the following recommendation which was disclosed to the Victorian court:

> '*Intra-abdominal haemorrhage (e.g. ruptured splenic artery aneurysm, ruptured liver) should be considered as part of the differential diagnosis when a pregnant woman presents with severe abdominal pain especially if she requires narcotic analgesia.*'

The Coroner has referred to this recommendation as having been the subject of discussion at a 'recent' meeting of the subcommittee in question. There is no

explanation as to why such a recommendation would have been made so late in the piece having regard to the fact that the delivery of the finding in that matter occurred some four years after the events in question. The Victorian Coroners Court adopted that recommendation. The Court also made the following observation:

> '*The entire weight of evidence is that it is an extremely rare condition; so rare indeed that one could not, in the precise circumstances that prevailed here, reasonably be critical of a doctor (including an obstetrician) not diagnosing (even differentially) the prospect of a rupture*.' (the underlining is part of the original text)

Added to that observation was the following:

> '*I think it likely that after the circumstances surrounding the untimely death of Ms Michelle Johnson are circulated through the obstetrics community by the College of Obstetricians, the same assertion could not reasonably be claimed in future.*' (the underlining is part of the original text)

5.6. This Court adopts the second of those observations, but makes no comment about the first. This Court does not know whether or not the College of Obstetricians has taken steps to circulate material regarding Ms Johnson's death, or for that matter the deaths of Ms Hooper and Mrs Paltridge. It would seem to be a reasonable conclusion that in light of its potentially fatal consequences, the condition of ruptured splenic artery aneurysm, as rare as it might be, should be front and centre of the education of any medical practitioner working in obstetrics and gynaecology and that the College should be taking the necessary steps to see that it is. This Court intends to make a recommendation accordingly.

6. The typicality of Mrs Paltridge's presentation

6.1. I have earlier noted that the literature relates for the most part to ruptured splenic artery aneurysm in pregnant women. This is not to say that ruptures may not occur in other persons, but the context that this case is concerned with is ruptured splenic artery aneurysm in pregnancy. I should mention one matter that arose during the course of the evidence and that was the evidence of Dr Avninder Singh Sandhu who is a consultant radiologist and who gave expert evidence concerning radiological and other procedures in connection with the possible detection of ruptured splenic artery aneurysm by those means. Dr Sandhu's evidence was that in his view Mrs Paltridge's presentation as far as a ruptured splenic artery aneurysm was concerned was atypical in a number of respects, including the fact that this was Mrs Paltridge's first pregnancy,

and that the literature indicated that ruptured splenic artery aneurysm usually occurs in women in the subsequent or second pregnancy. Dr Sandhu went so far as to say that the pathology had never been recorded, as far as he could see, in a primigravida patient. These views proved something of a distraction. In my view these observation are inaccurate and in any event not germane to the issues in this case. One would not eliminate the possibility of ruptured splenic artery aneurysm in a pregnant woman on the basis that it was her first pregnancy. In fact the literature tends to indicate that splenic artery aneurysm in a first pregnancy is not uncommon. One of the publications does suggest that rupture of splenic artery aneurysm occurs more frequently among multiparous women, especially during the third trimester of pregnancy[25]. On the other hand, another publication referred to the mean gravid status of a sample of 32 patients was 2.33 with G1 and G2 each being 28.1%. The actual case studies that have been referred to so far in this finding involved primigravida patients almost exclusively.

6.2. The other matters that Dr Sandhu suggested were atypical features need not be restated here. In the event Dr Sandhu ultimately acknowledged that the matters that he had identified were not really atypical features after all.

6.3. Indeed, when one examines the course of Mrs Paltridge's presentation as a whole, from the moment of her collapse in the shopping complex to her catastrophic collapse on the morning of Sunday 15 April 2012, which was followed by unsuccessful surgery, hers is almost a textbook example of a ruptured splenic artery aneurysm that has occurred in at least two separate stages as will be explained in these findings. Indeed, it appears that Ms Hooper's presentation in 2009 was also a very typical example of a staged course of this pathology. In short, there was nothing about the presentation in either case that would have suggested that ruptured splenic artery aneurysm could have been readily dismissed as a differential diagnosis. They were not atypical cases when one examines the literature. And when one examines the literature, real questions arise as to why ruptured splenic artery aneurysm in both cases would not have been firmly on the table.

7. <u>The course of Mrs Paltridge's admission at the WCH</u>

7.1. Mrs Paltridge arrived by ambulance at the WCH at approximately 1353 hours. A midwife examined Mrs Paltridge in the Women's Assessment Service and found her

[25] Exhibit C22a, The American Journal of Emergency Medicine 2009

observations to be within normal limits. The foetal heart rate was also within normal limits. The casenotes record that at that point Mrs Paltridge was experiencing generalised abdominal tenderness in the left upper quadrant that was constant, but which may have been intermittent earlier. The episode of '*fainting*' in the shopping complex is recorded in a midwifery note. At 1445 hours Dr Chen-Yi Lo examined Mrs Paltridge. Dr Lo has recorded that the presenting complaint was an unconscious collapse following severe left abdominal pain. The pain is described as having had a sudden onset. Light-headedness, blurred vision, ringing in the ears and blacking out is also recorded. Dr Lo has recorded her assessment as involving abdominal pain, query renal colic. She has recorded that Mrs Paltridge would be reviewed by Dr Sarah Cash. I understand Dr Lo was a resident medical officer. Dr Lo did not give oral evidence in the Inquest.

7.2. Dr Cash examined Mrs Paltridge that same afternoon. Dr Cash was at that time employed at the WCH as an obstetric registrar. She was in her first year of training. Dr Cash gave evidence at the Inquest. At the time of the Inquest Dr Cash was working at the Royal Adelaide Hospital as a gynaecology registrar. She had been in the same training program in April 2012. When Dr Cash examined Mrs Paltridge she recorded her agreement with Dr Lo's assessment that the patient's pain was maximal over the left flank. Dr Cash detected no rebound or percussion tenderness. A bedside ultrasound revealed nothing of significance. Dr Cash arranged for biochemistry testing and noted her plan to await the results of that testing, to possibly admit for analgesia and for a normal ultrasound scan to be considered if the pain did not settle. At 3:30pm Mrs Paltridge was provided with analgesia in the form of 1gm of paracetamol and 5mg of oxycodone which is a strong painkiller. A midwifery note timed at 4:45pm recorded that Mrs Paltridge was more relaxed with her '*analgesia on board*'. The pain level is recorded as 4 with discomfort level as 10. Dr Cash administered a bedside ultrasound that illustrated nothing.

7.3. At 5:20pm Dr Cash handed over the patient to Dr Aimee Reilly. As of April 2012 Dr Reilly was a 5th year trainee obstetrician/gynaecologist. She was employed at WCH as the senior gynaecology registrar. She had been employed at WCH since January 2012. Dr Reilly had previously been employed at WCH in 2008 to midway through 2009, and again for the first 6 months of 2010. When Dr Reilly gave evidence in the Inquest she had become a consultant obstetrician gynaecologist, having been admitted

as a Fellow of the Royal Australian and New Zealand College of Obstetricians and Gynaecologists in February 2014. Aside from the consultant specialists who dealt with Mrs Paltridge when she collapsed in extremis the following day, Dr Reilly would be the most senior medical practitioner to observe Mrs Paltridge during her admission. As a senior trainee obstetrician/gynaecologist, I infer that Dr Reilly's expertise and knowledge as of April 2012 had been considerable.

7.4. In Dr Reilly's notes of her examination of Mrs Paltridge she has recorded sudden onset of left upper quadrant/left flank pain that afternoon that involved Mrs Paltridge having '*fainted, caught by husband, immediately conscious*'. Dr Reilly noted that Mrs Paltridge indicated that her pain was 10/10 at its worst and was a constant stabbing pain, which on transfer became colicky, or intermittent, in nature. She noted that with the 5mg of oxycodone and the paracetamol that had been administered at 3:30pm, Mrs Paltridge's pain had '*vastly improved*' and had become a mild ache which escalated when she mobilised to the toilet. On examination Dr Reilly noted that Mrs Paltridge's abdomen was soft and tender and she has noted that this related to the left flank, the left upper quadrant and the epigastrium. She noted that an upper abdominal ultrasound had indicated no free fluid. There was no guarding, rebound or peritonism detected by Dr Reilly. By this time the blood results were in. There was nothing of particular diagnostic significance associated with those results, notwithstanding that Mrs Paltridge's haemoglobin was slightly down, as were her platelets.

7.5. In her notes Dr Reilly has recorded a number of diagnostic possibilities. She has written, in effect, query a left renal cause for the pain, query renal colic versus pyelonephritis. She has noted a differential diagnosis of '*??S (splenic) cause*'.

7.6. Dr Reilly decided to admit Mrs Paltridge for observation with a recommendation that a medical officer review her if there were any concerns. Dr Reilly ordered that in the morning an ultrasound should be carried out and that it should include an upper abdomen ultrasound. The recommendation for analgesia was PRN[26]. In preparation for her upper abdominal ultrasound the following morning, Mrs Paltridge was required to fast from midnight. In the event the upper abdominal ultrasound would not be carried out before Mrs Paltridge experienced her fatal collapse in the late morning of the following day.

[26] As required

7.7. A nursing note timed at 6:05pm indicates that Mrs Paltridge appeared comfortable, that her observations were unremarkable, that her pain at that time was in the left lower quadrant with a pain score of 4 to 6 out of 10 with a notation that analgesia had been given with effect. The good effect of strong analgesia was a recurring theme with Mrs Paltridge. In my view little diagnostic comfort could have been derived from Mrs Paltridge's positive response to analgesia.

7.8. The PRN medical chart reveals that Mrs Paltridge was given 10mg of oxycodone at 8:15pm.

7.9. At 3:10am on Sunday morning, 15 April 2012 Mrs Paltridge experienced severe abdominal pain with a score that was noted by nursing staff as being 10. She was vomiting. She was unable to get out of bed to go to the toilet. She was attended to at that time by a midwife, Ms Irene Marten, who was an experienced registered nurse and midwife having received her original diploma in 1974. Unsurprisingly Ms Marten was concerned enough about Mrs Paltridge's condition to notify a medical practitioner. The medical practitioner, Dr Mandana Master, who at the time was a resident medical officer, examined Mrs Paltridge at 3:45am. Mrs Paltridge was given maxalon to help with her vomiting. This served the dual purpose of ensuring that further oral analgesia could be kept down. The PRN medicine chart reveals that at 3:10am Mrs Paltridge was given another 10mg of oxycodone and another 1gm of paracetamol. In circumstances that during the Inquest attracted forensic debate as to the time at which Ms Marten made further notations in the progress notes, Ms Marten noted that Mrs Paltridge's pain was stabbing and intermittent with a '*score 10 still*'. It was not entirely clear at what stage Mrs Paltridge was still at a level of significant pain as a reflected by a score of 10, but it is fair to infer that for some time, both before and after the administration of analgesia, she experienced severe pain. Another controversial aspect of Ms Marten's entry in the progress notes was that she made an entry that Mrs Paltridge was experiencing '*Shoulder tip pain*'. Shoulder tip pain can be a reflection of an irritation of the diaphragm due to the presence of blood within the abdomen. In medical parlance 'shoulder tip pain', commonly referred to as Kehr's sign, is something of a term of art. This is so by reason of the fact that it can be symptomatic of an internal pathology as distinct from, say, muscular skeletal pain. As will be seen, in her evidence Ms Marten was startlingly inconsistent about what she meant by her entry in respect of shoulder tip pain. It is fair to infer that this was an expression that was not used by Mrs Paltridge

herself when describing the pain that she was experiencing to her shoulder. In my opinion this description was ascribed to the pain by Ms Marten. It must have been based upon a lay description of the pain as given by Mrs Paltridge. I will return to the nature and significance of shoulder pain later in these findings when discussing the evidence of Ms Marten and Dr Master who saw Mrs Paltridge at around this time. Suffice it to say for the moment, Dr Master would tell the Court that she knew nothing of shoulder tip pain when she examined Mrs Paltridge.

7.10. It is unlikely that the episode recorded by Ms Marten was anything other than a new onset of severe pain experienced by Mrs Paltridge. It is highly unlikely that Mrs Paltridge would experience pain of that level for an extended period of time prior to 3:10am without drawing it to someone's attention. This was a fresh clinical development that required attention and a revaluation of Mrs Paltridge's condition. The evidence would suggest that this episode represented another haemorrhage from the ruptured aneurysm. To my mind Mrs Paltridge needed access to expertise beyond what a nurse and a resident medical officer could provide.

7.11. When Dr Master came to examine Mrs Paltridge at 3:45am she noted that Mrs Paltridge had already been provided with oxycodone '*20 minutes ago*', and that she was describing her pain as stabbing and intermittent but which had become better since the oxycodone had been given. She elicited from Mrs Paltridge, and noted in the progress notes, that Mrs Paltridge experienced pain at a level of 10/10 when there was no pain relief on board. I infer that Mrs Paltridge was there referring to the level of pain that she was experiencing at 3:10am prior to the administration of further oxycodone, and possibly even earlier during her initial collapse when shopping.

7.12. Dr Master drew a diagram of Mrs Paltridge's abdomen and it indicates that Mrs Paltridge was experiencing left upper quadrant pain on light palpation with nil guarding and nil rigidity.

7.13. As far as a diagnosis was concerned Dr Master noted in the progress notes '*? renal colic*' and '*? gallstones*'. Her plan for Mrs Paltridge was to await the ultrasound in the morning and for the nursing staff to call a medical officer if there were further concerns in respect of Mrs Paltridge.

7.14. In a note that must have been made by Ms Marten upon Dr Master's review of Mrs Paltridge at 3:45am, but which note preceded Dr Master's note, Ms Marten noted that Mrs Paltridge's pain was lessening to a score of 9.

7.15. I digress here to observe that a recorded pain score described as 10 out of 10, or simply 10, is intended to reflect the worst pain that the patient can imagine. The score is elicited from the patient herself. During the course of the Inquest it was occasionally asserted that this is a very subjective assessment of a patient's pain level having regard to the variability of individual tolerance to pain, the suggestion being, one supposes, that limited reliance can be placed on a patient's self-assessment. It is the experience of this Court that this suggestion is typically made by those who for whatever reason seek to downplay the significance of a given patient's pain. But even allowing for the alleged disadvantage of subjectivity, I have no doubt that when Mrs Paltridge said that she experienced pain at a level of 10/10 she was experiencing a level of pain that made her extremely uncomfortable and which significantly alarmed her. An expressed pain level of 9/10 would also reflect significant pain on the part of the patient.

7.16. Mrs Paltridge was given a further 10mg of oxycodone at 7:25am. The progress notes do not describe the circumstances in which this was administered. The next entry was that of Dr Jordana Scharnberg who examined Mrs Paltridge at 9:15am. However, a retrospective midwifery note made by a member of the nursing staff timed at 2:30pm on 15 April 2012 following Mrs Paltridge's death asserts that the staff member had observed Mrs Paltridge throughout the morning, that her pain had been well controlled with oxycodone and Panadol, that she had appeared comfortable and had been talking and laughing at the times at which nursing staff member had been present in her room. The nursing note also asserts that observations undertaken at 6:30am by the night staff had all been stable. There is no evidence of an acute or obvious deterioration after she had been seen by Ms Marten and Dr Master, or one that has been recorded within the progress notes. However, there was an issue raised in the Inquest as to whether or not Ms Marten had called back Dr Master to re-examine Mrs Paltridge as a result of Ms Marten's continued concerns about the patient. I will return to this in due course.

7.17. At the time Dr Scharnberg examined Mrs Paltridge the abdominal ultrasound that had been planned for that morning had not been carried out. Nothing was done to expedite the ultrasound. It would not be carried out any time before Mrs Paltridge's final collapse.

7.18. At the time with which this Inquest was concerned Dr Scharnberg had completed 3 years of her obstetric and gynaecology training. She first worked at the WCH in the second half of 2009 and continued her work at that hospital into 2010. She was then posted to a number of other hospitals and returned to the WCH in 2012. Dr Scharnberg was not a consultant obstetrician and gynaecologist. She explained to the Court that as of April 2012 her training as an obstetric and gynaecology registrar in effect had been interrupted, but that she was still working in that discipline in the WCH. In any case she was of less seniority in a training sense than, say, Dr Reilly who was the senior registrar.

7.19. Dr Scharnberg compiled two sets of notes in relation to Mrs Paltridge. The first set of notes was made at the time of her examination at 9:15am. The second set of notes were retrospectively prepared during the afternoon of 15 April 2012 following Mrs Paltridge's death.

7.20. Dr Scharnberg's examination at 9:15am, as recorded in her original entry in the progress notes, revealed a then pain score of 6/10 on a background of Mrs Paltridge having received oxycodone approximately 2 hours before. This was a clear reference to the 10mg of oxycodone at 7:25am. In a diagram drawn by Dr Scharnberg that was intended to illustrate the location of the pain, she has indicated that it was in the upper part of the Mrs Paltridge's body. Dr Scharnberg recorded in words left upper quadrant and epigastric pain with no guarding, no rebound and no peritonism. The note does make reference to '*shoulder pain*' on the right hand side. Dr Scharnberg noted that she elicited from Mrs Paltridge that Mrs Paltridge thought that her husband had '*wrenched*' her shoulder when catching her at the time of her original collapse at the shopping complex. I take it that Mrs Paltridge herself used the word '*wrenched*' in describing what had taken place. This description of how the shoulder pain may have originated does not appear anywhere else in the progress notes, and in particular does not appear in Ms Marten's notes, remembering that Ms Marten had earlier noted '*Shoulder tip pain*'. If Mrs Paltridge's description of the origin of the pain was correct, it would have had no significance in terms of intra-abdominal pathology. But the true nature of this shoulder pain was obfuscated, as will be seen, by a large measure of inconsistency on the part of Ms Marten and her evidence.

7.21. Like Dr Master, Dr Scharnberg noted '*? gallstones*' and '*? renal colic*'. Dr Scharnberg noted the plan for the abdominal ultrasound to be performed that day. Although

Dr Scharnberg has recorded some of Mrs Paltridge's vital signs, these appear to reflect observations made earlier that morning. Dr Scharnberg did not take any observations of her own. This failure was the subject of adverse comment within the evidence of the independent experts Professor Roger Pepperell and Professor Alec Welsh whose evidence I will discuss in due course. As to what the taking of further observations at that time would have revealed cannot now be known with complete certainty. It is also worthy of note that Dr Scharnberg did not record any observation or impression of Mrs Paltridge's overall state of wellbeing as at the time of her examination.

7.22. Dr Scharnberg's retrospective note made that afternoon after Mrs Paltridge's death does not deal with her 9:15am examination. It principally deals with the circumstances of Mrs Paltridge's ultimate fatal collapse.

7.23. As indicated earlier, Mrs Paltridge was not seen by a medical practitioner at consultant level at any stage prior to her fatal collapse. A consultant obstetrician, Dr Geoffrey Matthews, had commenced his shift at 8am that day. He would ultimately be summoned to see Mrs Paltridge when she experienced her collapse that morning. When Dr Matthews gave evidence in the Inquest he stated that from his retrospective observations of the clinical record, Mrs Paltridge had become progressively more tachycardic during the night[27]. In addition she had continued to be in pain and was needing analgesia. Based upon those and other observations, Dr Matthews expressed a view as to what he may have deduced had he seen Mrs Paltridge at an earlier point in time. In his original witness statement Dr Matthews had said that if he had been on the ward and had seen Mrs Paltridge prior to the code zero being called, he may have identified the problem. When during his oral evidence he was asked to expand upon that, he said that upon any examination by him of Mrs Paltridge a number of things would have been revealed to him, including the fact that she was obtunded, and he would have taken into account any description that she had given as to what had happened to her and have taken that into account what had occurred throughout the night. He said '*indeed, the penny may have dropped for me a little before ultimately it did when I saw the patient*'[28]. Dr Matthews was there referring to the fact that when he did see Mrs Paltridge later that morning it did occur to him that she was experiencing a ruptured splenic artery aneurysm. However, he said this:

[27] Transcript, page 442
[28] Transcript, page 442

> 'What happened during the night is she became progressively more tachycardic, so I think that's what would have - the fact that she continued to be in pain, was needing analgesia and looking at the chart towards the end - and I would say, towards the very end, so she didn't have a significant tachycardia til quite late in the process if you actually refer to the chart, so I'm very - I know where you're going with this; the doctor that came and saw her at 3a.m., or whenever it was, was in a difficult position. At that point, the chart was not especially compelling and she was placed in a position of having to try to make a diagnosis that quite senior doctors before her had been unable to do on the basis of her very limited experience, so it is difficult. But I think you're asking me if I'd seen her at 6 or 7 or 8 o'clock in the morning, which is a rather different proposition whereby the situation had progressed and the patient was, by now, very unwell and it is quite possible I would have made the diagnosis.' [29]

Dr Matthews then speculated as to whether or not that earlier diagnosis may have made any difference to the outcome. This is an issue that will require separate discussion below.

7.24. Mrs Paltridge's final and fatal collapse occurred at around 10:45am when her husband notified nursing staff that Mrs Paltridge had become faint and clammy. When nursing staff entered the room Mrs Paltridge was observed to be clammy and pale. Dr Scharnberg was called to Mrs Paltridge's room. She found Mrs Paltridge to be flat on her back on the bed and unconscious. One of the nursing staff was endeavouring to rouse her. At first a blood pressure could not be ascertained. When Mrs Paltridge was roused and became conscious she was complaining of left upper quadrant pain that she said was worse than ever before. Given the foetal compromise as well as the unstable condition of Mrs Paltridge herself, a decision was made to call a code zero.

7.25. The consultant, Dr Matthews, was called. I do not need to go into what transpired from this point forward in any great detail. Suffice it to say Mrs Paltridge was taken to surgery. Dr Matthews told the Court that he suspected that Mrs Paltridge was experiencing an internal bleed. According to Dr Matthews' statement, just before Mrs Paltridge was taken to the operating theatre he reached a conclusion that she did have a splenic artery aneurysm. It became apparent to him that Mrs Paltridge had a lot more going on than what had initially been appreciated. Mrs Paltridge was quite unwell, as a result of which Dr Matthews called a code blue which is a method by which a team that is able to perform adult resuscitation can be assembled. Dr Matthews had not been consulted about Mrs Paltridge at any time prior to her fatal collapse.

[29] Transcript, pages 442-443

7.26. An off duty general surgeon who was attached to The Queen Elizabeth Hospital, Dr David Walters, was telephoned. He made his way urgently to the WCH where he conducted abdominal surgery. Two anaesthetists were also summoned. One of those persons, Dr Cooray, gave oral evidence in the Inquest.

7.27. I was satisfied that once Dr Matthews had concluded that Mrs Paltridge was severely ill, all necessary steps were taken with the appropriate speed to facilitate the necessary surgery. An issue was raised at the Inquest as to whether Mrs Paltridge should have been administered a blood transfusion prior to the surgery, either in addition to or instead of the blood expanders with which she was administered. Reasonable views differed on this. I need say no more about that other than that the evidence satisfied me that any need to transfuse Mrs Paltridge prior to surgery was outweighed by the urgency of that surgery. I do not believe that any criticism can be levelled at any individual in respect of any alleged failure to transfuse Mrs Paltridge before surgery.

7.28. Mrs Paltridge experienced a cardiac arrest very soon after a general anaesthetic was administered. By that stage Mrs Paltridge had suffered severe internal blood loss as would be revealed by the surgery. It may well be that the anaesthesia contributed to her cardiac arrest having regard to her already compromised state. Dr Cooray was quite candid about this. He told the Court that there had quite possibly been a connection between Mrs Paltridge's induction of anaesthesia and her cardiac arrest. He said:

> 'A. So the drugs we use, so I did also note that we used smaller doses than we would usually, and sometimes if you're compromised enough even smaller dose can be significant in that. So these drugs usually cause dilation of the vessels and they cause an effect on the heart and as a result, can reduce your cardiac output as you call it.
>
> Q. So when you say dilation of the vessels what, throughout the entire body.
>
> A. Yeah.
>
> Q. Would that have the effect of reducing the blood pressure.
>
> A. It would.
>
> Q. Is that the mechanism by which then the heart would struggle to work.
>
> A. That is one mechanism but it can - also some of these drugs can have some effect on the heart as well as a depressant.
>
> Q. What was the timing exactly between the induction and the cardiac arrest. You've used the word 'immediately' I think, but can you express it in terms of time.
>
> A. Within about a minute I think.

Q. Within about a minute yeah. Now you appreciate that this woman at that stage must have been significantly hypovolemic.

A. Deeply - yes.

Q. Would the hypovolemia have had any contribution to her cardiac arrest do you think.

A. It has a contribution, yes.

Q. In what way.

A. So like I said if they already had an insult, adding another insult with medications is additive.' [30]

In the Court's view there is no criticism to be directed to anyone in respect to the administration of a general anaesthetic measure. Clearly a general anaesthetic was necessary in all of the circumstances. What this evidence did tend to demonstrate is that if Mrs Paltridge had been operated on earlier, and at a time when she was not so obtunded, her response to general anaesthesia may have been less unfavourable.

7.29. The fact that Mrs Paltridge experienced a cardiac arrest just prior to surgery meant that resuscitative measures including external cardiac massage had to occur during that surgery, which made the surgery even more complex and physically difficult than it already was. In the event the surgeon, Dr Walters, not surprisingly, was unable to identify the specific source of haemorrhage within Mrs Paltridge's abdomen. Mrs Paltridge had lost a lot of blood. She could not be resuscitated and the surgery therefore ceased.

7.30. As indicated earlier, the source of the bleeding was a ruptured splenic artery aneurysm and this was only identified at autopsy.

7.31. What the evidence concerning Mrs Paltridge's collapse, her adverse response to anaesthesia, her cardiac arrest and the physical difficulty of her surgery graphically illustrates is that once a person experiences a catastrophic haemorrhage from a ruptured splenic artery aneurysm, any type of effective intervention including surgical intervention is going to be extremely difficult. For that reason an early diagnosis of a splenic artery aneurysm rupture, at a time before the catastrophic haemorrhage occurs, is paramount. As indicated above, the academic publications to that point in history said exactly that. Ms Hooper's case also was a similar case in point.

[30] Transcript, pages 316-317

8. The medical practitioners' knowledge of ruptured splenic artery aneurysm

8.1. It is worthwhile observing at the outset that the evidence given by the witnesses identified in this section, specifically about their knowledge of the condition of ruptured splenic artery aneurysm, was not the subject of serious challenge by counsel for the Women's and Children's Health Network. I accepted that evidence.

8.2. Dr Cash

Dr Cash told the Court that she had rarely encountered women presenting with left sided pain who had fainted. She had said in her witness statement that she recalled thinking at the time when she examined Mrs Paltridge that it was strange that a person would have pain and collapse at the same time. When asked in Court as to what she knew at the time about splenic artery aneurysm, Dr Cash replied '*not a lot*'[31]. She explained that she knew something of the pathology from the fact that approximately three years prior to these events there had been another case that some of the other registrars had been involved in. That was clearly a reference to the case of Ms Hooper. She knew from discussions with those individuals that the pathology was very rare, difficult to diagnose and that the mortality was very high[32].

8.3. Dr Cash told the Court, and I accept her evidence, that she did not know of the detail in respect of Ms Hooper's clinical presentation[33] and that she had not been informed as to the nature of the pain that Ms Hooper had experienced[34]. What she had understood about that case was that the woman had presented with pain which had then resolved, but then she had subsequently collapsed.

8.4. In her witness statement Dr Cash had said that she had suspected that she '*may have thought of splenic artery aneurysm being the cause of Mellanie's pain*', but because she had settled so quickly she did not believe that she was suffering from something as sinister as that. When questioned as to whether she had specifically suspected a splenic source, Dr Cash said that she had not because Mrs Paltridge had appeared well. My view is that it did occur to Dr Cash at the time that a splenic artery aneurysm might be the source of Mrs Paltridge's pain, but that due to a lack of training and knowledge it was a fleeting thought at best. I think this is probably due to the fact that as a relatively

[31] Transcript, page 81
[32] Transcript, pages 81-82
[33] Transcript, page 105
[34] Transcript, page 86

junior medical practitioner at that time, Dr Cash's knowledge of splenic artery aneurysm and ruptured splenic artery aneurysm was very limited.

8.5. What did occur to Dr Cash was the possibility that Mrs Paltridge had experienced some sort of bleed, and that is why she looked outside the uterus for free fluid, but she did not detect any. She said:

> 'To be honest with you I wasn't quite sure, because the fact that her blood pressure was normal and her pulse rate was very much within limits, countered the idea of a massive blood loss.' [35]

8.6. What is clear is that Dr Cash knew of the type of pain that Mrs Paltridge had originally experienced, that the pain had a sudden onset and that Mrs Paltridge had experienced a loss of consciousness[36]. It seems that Dr Cash did not fully appreciate the significance of a juxtaposition of left upper quadrant pain and collapse, a combination of circumstances that, according to the literature, raised a need to consider ruptured splenic artery aneurysm as a possible diagnosis.

8.7. In the event Dr Cash thought that Mrs Paltridge's difficulties had more of a renal origin[37], but acknowledged that she did not have a diagnosis for her[38]. She did say that if she had access to and had applied the detailed information about the previous death at WCH she would have called for an additional assessment from a more senior doctor which may have resulted in a different scan taking place[39].

8.8. Dr Cash believes that she is now adequately equipped to potentially diagnose the condition were it to reoccur, and would specifically be alert to left upper quadrant pain accompanied by a collapse such as a faint at the time of the pain. She acknowledges that a ruptured splenic artery aneurysm should be considered in a differential diagnosis of a pregnant patient with severe and unexplained abdominal pain[40].

8.9. <u>Dr Reilly</u>

Dr Reilly told the Court that when she examined Mrs Paltridge there had been no

[35] Transcript, page 92
[36] Transcript, page 91
[37] Transcript, page 95
[38] Transcript, page 103
[39] Transcript, pages 107-108
[40] Transcript, page 112

discussion with Dr Cash about the possibility of splenic artery aneurysm being the underlying cause of Mrs Paltridge's presentation.

8.10. In her evidence Dr Reilly acknowledged that her understanding had been that Mrs Paltridge had experienced left upper quadrant and left flank pain. She acknowledged that the available information was that Mrs Paltridge had fainted. However, from her own assessment of Mrs Paltridge and from the information that Mrs Paltridge and her husband had provided, her belief was that there had not been a loss of consciousness during the episode whilst shopping[41]. This assertion was rather surprising having regard to earlier notations that had been made by Dr Lo that Mrs Paltridge had felt light headed with blurred vision, ringing in the ears and had blacked out, information that appears to have come from Mrs Paltridge herself. Dr Reilly's own notes suggest that the information she was given was that Mrs Paltridge had fainted but had been caught by her husband and had immediately regained consciousness[42]. To my mind the information that Dr Reilly possessed strongly indicated that Mrs Paltridge had experienced a period of loss of consciousness. It would have been prudent for Dr Reilly to have acted on that basis, even if there had been inconsistent information.

8.11. To my mind Dr Reilly's professional knowledge about ruptured splenic artery aneurysm as it existed in 2012 was limited. When asked as to what she knew about that condition, she told the Court that she knew that there had been a case of ruptured splenic artery aneurysm at the WCH some years prior, that this patient, clearly Ms Hooper, had presented to the Women's Assessment Service with pain, had been discharged and just outside the department had collapsed. She believed that Ms Hooper's presentation had involved '*quite a rapid onset*'[43]. She had not been employed at the WCH at that time. The information as to that previous case had emanated from conversation with colleagues and via doctors who had been involved in that case. She had received no formal education about ruptured splenic artery aneurysm during her employment at the WCH and had received no such training through the Royal Australian and New Zealand College of Obstetricians and Gynaecologists. Dr Reilly pointed out that it was such a rare condition that it was not necessarily something that came up in training at all[44].

[41] Transcript, page 120
[42] Exhibit C6, page 66
[43] Transcript, page 129
[44] Transcript, page 130

8.12. Dr Reilly, like Dr Cash, suggested that severe pain associated with fainting is a less common presentation[45].

8.13. Despite Dr Reilly's lack of professional knowledge about the condition, she told the Court that she had experienced a fleeting thought that Mrs Paltridge's presentation was unusual, and while she did not think it was explained by a ruptured splenic artery aneurysm, she thought that she would perform a quick ultrasound assessment just for her own peace of mind. Dr Reilly said that she discounted a splenic artery aneurysm:

> 'Because I knew of that previous case but also the fact that, again, on my list of differentials, infarction was, in my mind, a more common presentation than something like a splenic artery aneurysm. So I discounted it fairly quickly.' [46]

Dr Reilly went on to say that one of the matters that caused her to discount splenic artery aneurysm was her understanding of how rapidly unwell the previous patient, Ms Hooper, had become. I pause here to observe that beliefs as to the rapidity of Ms Hooper's decline was a recurring theme among the witnesses called in this Inquest. This is not entirely correct. Ms Hooper's presentation in the first instance had involved severe pain together with some neurological disturbance, but it had then involved several hours of stability followed in the end by a fatal collapse, a clinical course not dissimilar to that of Mrs Paltridge. If when considering Mrs Paltridge's diagnosis Dr Reilly had placed any significance on her flawed appreciation of the facts of Ms Hooper's case, her consideration of Mrs Paltridge's case was, in turn, just as flawed. Dr Reilly did say that if she had known the finer details of Ms Hooper's presentation it may have impacted on her assessment of Mrs Paltridge[47]. Nevertheless, in her evidence Dr Reilly continued to maintain that Ms Hooper's case had been different from Mrs Paltridge's, but ultimately agreed with counsel assisting that she had not received a proper detailed appreciation of the time lapse between Ms Hooper's presentation or onset of symptoms and her eventual final collapse, having been under the impression that it was fairly quick.

8.14. There seems little doubt that Dr Reilly had only a vague general impression of what a presentation of ruptured splenic artery aneurysm might look like despite the fact that

[45] Transcript, page 145
[46] Transcript, page 131
[47] Transcript, page 153

she knew that a previous case of the same condition had occurred in the same hospital some years before.

8.15. In the event what was at the forefront of Dr Reilly's mind as far as Mrs Paltridge's diagnosis was concerned was a renal cause with a differential diagnosis of a general splenic cause, not specifically splenic artery aneurysm. She had in mind a possible splenic infarction.

8.16. Dr Reilly told the Court that since these events she has seen nothing from the Royal Australian and New Zealand College of Obstetricians and Gynaecologists about the condition of ruptured splenic artery aneurysm, and in particular not since 2014 when the matter was considered by the Victorian Coroner's Court and certain recommendations and observations were there made in respect of the College.

8.17. Dr Reilly told the Court that she now has a much more thorough understanding of ruptured splenic artery aneurysm such that she would never look at anyone the same way again and would err on the side of caution. She told the Court that she has changed the way in which she assesses patients who come in with left upper quadrant pain. She said:

> 'I tend to err on the side of caution and get imaging to exclude things.' [48]

8.18. <u>Dr Master</u>

Dr Mandana Master was a resident medical officer in her second year of actual medical practice. She was asked by nursing staff to examine Mrs Paltridge at approximately 3:45am on the Sunday morning. Dr Master was the only medical practitioner who saw Mrs Paltridge overnight. The evidence was that there would have been a registrar on duty had it been considered necessary for a more senior medical practitioner to examine Mrs Paltridge.

8.19. It will be remembered that Ms Marten had summoned medical assistance because Mrs Paltridge was experiencing severe abdominal pain with a score of 10/10 and was vomiting and unable to get out of bed to void. Ms Marten recorded '*Shoulder tip pain*'. I will deal with Ms Marten's evidence in a separate section of these findings. Suffice it to say her evidence was highly unsatisfactory for the reasons that I will mention. The Court has experienced difficulty relying on her evidence where it conflicts with that of

[48] Transcript, page 138

other witnesses, including Dr Master, except to the extent that I have preferred Ms Marten's evidence as to Mrs Paltridge's overt state of unwellness to that of Dr Master who told the Court that Mrs Paltridge did not look unwell when she examined her. I think it highly likely that Ms Marten, who is an experienced nurse, correctly assessed Mrs Paltridge as unwell. Her impression of Mrs Paltridge was the very reason she sought the assistance of a medical practitioner.

8.20. It is clear that Dr Master was asked to see Mrs Paltridge because of left upper quadrant pain because that is what Dr Master herself noted. Not only that, she drew a diagram indicating the same. Although I accept Dr Master's evidence that by the time she saw Mrs Paltridge the pain had subsided to a degree, it is clear that Mrs Paltridge indicated to her that her pain was 10/10 when no pain relief was on board. If Dr Master wanted to know what Mrs Paltridge's presentation was like prior to her having been administered the strong painkiller oxycodone before she arrived, all she had to do was ask Ms Marten.

8.21. The only type of pain that Dr Master recorded is left upper quadrant pain. I have already referred to the fact that she did not note, nor was told about by Ms Marten, shoulder tip pain. I have not been able to rely on anything that Ms Marten claims she asserts in that regard.

8.22. In any event it appears that Dr Master's then knowledge about splenic artery aneurysm was virtually nil. As of April 2012 she had not received any education or information about the woman who had died in 2009 from rupture of the splenic artery[49]. As well, she was not even aware of the condition of ruptured splenic artery aneurysm. This had not been mentioned in her training to date and she had never been involved in the management of a patient with that condition.

8.23. Dr Master told the Court that she did know something of shoulder tip pain and its possible significance, but asserted that she had no information about a complaint of shoulder pain on the part of Mrs Paltridge. She told the Court that if she had known of a complaint of either shoulder tip pain or shoulder pain generally she would have regarded that as a new symptom and would have 'escalated' the matter to her Registrar. She said that she would have done so because of her understanding that shoulder tip

[49] Transcript, page 202

pain can be a sign of irritation of the diaphragm from gas, blood or pus[50]. In the following section I will return to the issue of what Dr Master did or did not know about shoulder tip pain.

8.24. In the event Dr Master appears to have been reassured by the existing plan that Mrs Paltridge would have an ultrasound in the morning. She was also aware that by the time she saw Mrs Paltridge, she had already been seen by two different registrars who were much senior to her. Accordingly, Dr Master did not feel that calling a registrar to examine Mrs Paltridge at that time was warranted. She felt that Mrs Paltridge was stable and that her condition had not changed since her admission. To Dr Master there was an adequate management plan in place and she was not sufficiently concerned at the time that she saw Mrs Paltridge to escalate the case to registrar level.

8.25. Dr Master noted a possible diagnosis of renal colic or gallstones, both of which she placed question marks against. As to earlier notations in relation to a possible splenic cause, Dr Master told the Court that she had never seen a patient who had a splenic cause of pain.

8.26. It is obvious to the Court that Dr Master was virtually clueless about Mrs Paltridge's diagnosis. Dr Master was inadequately equipped to gain an informed impression about Mrs Paltridge.

8.27. As to Ms Marten's assertion that she called Dr Master back and that Dr Master in essence refused to see Mrs Paltridge again, this was denied by Dr Master. Ms Marten made no note of it and on the whole I am unable to rely on Ms Marten on this issue. I make no finding about that matter.

8.28. <u>Dr Scharnberg</u>

Dr Scharnberg, a Registrar, examined Mrs Paltridge at 9:15am.

8.29. When Dr Scharnberg was first asked in her evidence about what she knew of ruptured splenic artery aneurysm in 2012 she said that the patient would present with significant signs of shock with an acute or surgical abdomen, suggesting rebound guarding and rigidity, with low blood pressure, elevated pulse rate, elevated respiratory rate and a declining level of consciousness. This is an accurate assessment of a person who is in

[50] Transcript, page 602

extremis, but takes no account of the possibility that the initial presentation of a ruptured splenic artery aneurysm will involve a temporary experiencing of severe pain with an initial containment of the haemorrhage followed by a period of stability. If Dr Scharnberg was expecting Mrs Paltridge to have presented with the more acute type of symptomatology, either at the time when she examined Mrs Paltridge or at any earlier point in time before ruptured splenic artery aneurysm needed to be considered, then she had an erroneous understanding of the condition. I believe that she did have such an erroneous understanding at the time. Dr Scharnberg said that she did not consider splenic artery aneurysm as part of any diagnosis when she examined Mrs Paltridge[51].

8.30. Dr Scharnberg asserted that at that time she had not heard of the double rupture phenomenon sometimes associated with ruptured splenic artery aneurysm. On a number of occasions during her evidence Dr Scharnberg reiterated that she believed that a typical presentation of ruptured splenic artery aneurysm would involve severe shock. In short, Dr Scharnberg's evidence amounted to an assertion that a patient suffering a ruptured splenic artery aneurysm would invariably present in the manner that Mrs Paltridge ultimately presented in her fatal episode. This is incorrect.

8.31. Dr Scharnberg is distinguished from the other medical practitioners who examined Mrs Paltridge by the fact that she was actually working at the WCH at the time of Ms Hooper's presentation and death in 2009. For that reason her knowledge of the Hooper matter was naturally of considerable interest to the Court. However, Dr Scharnberg told the Court that she had only '*a vague understanding*'[52] of Ms Hooper's presentation. She told the Court that she did not recall the location or the nature of the pain that the patient had originally presented with or subsequently[53].

8.32. Dr Scharnberg told the Court that any knowledge that she had gained in respect of the 2009 death at the WCH had come from lunchtime discussions, rumour, '*formal*' information and discussion from senior staff about what had occurred and a debriefing of sorts from Dr Matthews to whom I have already referred. She could not recall the specifics about the discussions she had been involved in. She said that the debriefing in 2009 had not involved a description of the woman's presenting symptoms other than

[51] Transcript, page 249
[52] Transcript, page 278
[53] Transcript, page 278

pain[54]. She had received nothing from the Royal Australian and New Zealand College of Obstetricians and Gynaecologists and her current knowledge of the condition had been gleaned from her own research. Similarly, she told the Court that no specific hospital-wide training or group training has taken place in respect of the condition[55].

8.33. Interestingly Dr Scharnberg expressed the view that Ms Hooper's stated presentation, as revealed by cross-examining counsel, was different from Mrs Paltridge's presentation. She did not agree that Ms Hooper's presentation had been similar to Mrs Paltridge's[56]. The facts of Ms Hooper's presentation somewhat speak for themselves and there is a clear correlation in my view.

8.34. There is one other matter concerning Dr Scharnberg's evidence that perhaps should be mentioned and it is that Dr Scharnberg elicited from Mrs Paltridge a complaint of right shoulder pain. An additional note suggests that this was described in terms of her husband having '*wrenched*' her shoulder when catching her during her collapse. Dr Scharnberg told the Court, however, that if this had been described as shoulder tip pain it could have been a symptom of significance to her at the time because it may have involved irritation to the diaphragm as distinct from having a muscular skeletal origin.

8.35. In the event Dr Scharnberg's diagnostic impression appears to have mirrored that of earlier practitioners insofar as *'? renal colic'* and *'? gallstones*' had been the preferred diagnosis to date. She told the Court that she had not discarded a possible splenic origin for the presentation, but regarded other possible causes as more likely[57].

8.36. Dr Scharnberg acknowledged, in the Court's view importantly, that in circumstances where a differential diagnosis of a very serious condition such as ruptured splenic artery aneurysm is on the table, but where there are more favoured and outwardly more likely diagnoses, the arrival at or the exclusion of those competing diagnoses is a matter that needs to be addressed urgently[58]. The Court agrees with that assessment and I indicate that I will be making a recommendation in accordance with that notion.

[54] Transcript, page 285
[55] Transcript, page 288
[56] Transcript, page 286
[57] Transcript, pages 270, 276
[58] Transcript, pages 282-283

8.37. The Court has concluded that Dr Scharnberg's appreciation of Mrs Paltridge's presentation and of the condition of ruptured splenic artery aneurysm generally was imperfect. In my view she was ill equipped to give proper consideration to that issue.

9. The evidence of Registered Nurse and Registered Midwife Irene Marten

9.1. Registered Nurse and Midwife Marten provided a written statement to police that was given on 11 June 2013 and apparently signed on 14 November 2013[59]. Ms Marten also gave oral evidence. Ms Marten was originally represented at the Inquest by Ms Doecke of counsel who also represented the Women's and Children's Health Network and other employees of SA Health, including Drs Cash, Reilly, Master and Scharnberg. During the course of the Inquest, and in circumstances that I will describe in this section, Ms Doecke's representation for Ms Marten would cease.

9.2. I have already referred to Ms Marten's entries in Mrs Paltridge's progress notes. These notes appear consecutively at pages 67 and 68 of Exhibit C6. A note timed at 0310 hours is the last entry on page 67 of the progress notes, save and except for a MEWS escalation procedure sticker that occupies the bottom three lines of that page. At the top of the following page, Ms Marten's notes continue, the first entry relating to the notification of Dr Master, the provision of analgesia and other measures together with the matter that I have already referred to, namely her entry regarding the presence of '*Shoulder tip pain*'. Immediately following this note is an entry timed at 0345 hours which records the fact that Mrs Paltridge was reviewed by Dr Master and that her pain had lessened to a score of 9. Immediately following that entry is another entry timed at 0600 hours concerning a further MEWS assessment and other parameters, including a pain score of 6. Following this entry there are four blank lines followed by Dr Master's own note timed at 0345 hours. I was satisfied that Dr Master had left a space at the upper portion of this page to enable Ms Marten to complete her own notes, or some of them. The entry of Ms Marten timed at 0600 hours must have been made after Dr Master's notes. The issue at stake in respect of Ms Marten's notes and their timing was whether Dr Master's attention had been drawn to Mrs Paltridge's shoulder pain and the nature of that particular type of pain, and whether, for instance, Dr Master had an opportunity to see Ms Marten's entry regarding the same. It will be remembered that Dr Master told the Court that she would have placed some significance on shoulder

[59] Exhibit C12

tip pain if her attention had been drawn to that. On the other hand, Dr Scharnberg who later saw Mrs Paltridge, ascribed shoulder pain to something that was musculoskeletal.

9.3. In Ms Marten's witness statement she had stated the following:

> 'Melanie (sic) had ongoing right shoulder tip pain.
>
> …
>
> Melanie described the pain as stabbing, to the left upper quadrant of her abdomen. Melanie was also complaining of ongoing shoulder tip pain to her right shoulder.' [60]

Ms Marten then described the arrival of Dr Master and Dr Master's examination at which Ms Marten said she was not present. The statement then continues as follows:

> 'Not long after Dr Master had left I went back to see Melanie (sic). Although Melanie's pain and observations were improving, I was still not happy with how Melanie looked. She was lying back in bed. I rang Dr Master back to see if she could come and have another look at Melanie but she was busy, I asked if someone else could come and have a look since she was busy but Dr Master told me she was happy with the review she had conducted. I assisted Melanie to the toilet and stayed with her and assisted her back to bed. I stayed with Melanie in her room until she went back to sleep, I estimate this time to be about 30 minutes.' [61]

9.4. Dr Master had also provided a statement to the Inquest[62]. This was given to police on 19 June 2013 and apparently signed on 30 December 2013. That statement contains the following:

> 'After my examination of Mellanie I asked RM Marten to follow up on some outstanding urine samples. I have no recollection of having any further conversations with RM Marten regarding Mellanie and I did not see her again during my shift.' [63]

Thus there was reason to suppose that even before this Inquest commenced there was a significant conflict between the evidence of Ms Marten and that of Dr Master in respect of an important issue, namely whether Ms Marten had called Dr Master back to see Mrs Paltridge but that Dr Master had refused. Nevertheless, Ms Marten and Dr Master were at first represented by the same counsel. This situation prevailed well into Ms Marten's oral evidence.

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[60] Exhibit C12, page 3
[61] Exhibit C12, page 4
[62] Exhibit C21
[63] Exhibit C21, page 4

9.5. In the event Ms Marten gave evidence on two separate occasions, the second occasion being separated in time and in circumstances where she was then represented by fresh independent counsel, Mr Bonig.

9.6. On the first occasion on which Ms Marten gave evidence she had acknowledged that she had written shoulder tip pain in her note. When first asked as to whether at a time before Dr Master entered the room she had told Dr Master that Mrs Paltridge had right shoulder tip pain, Ms Marten said that she was not sure but thought that she '*may not have*'[64]. At first Ms Marten told the Court that she believed that she had written the note including reference to shoulder tip pain at a time after Dr Master's examination, meaning that Dr Master would not have seen that note. However, she later said this in her evidence:

> 'Q. What would you say about this instance in Mrs Paltridge's case.
> A. With Mrs Paltridge I would say that she had sever - well left upper quadrant pain which was more severe than it was when I had seen her earlier in that night. She also had - I'm not sure whether I mentioned, but if I did I would have said that she had - she did have shoulder pain and she had been brought up by her husband, but I would feel that it was more because Mellanie had mentioned it to me.
> Q. You thought that the shoulder tip pain was significant enough to put in the case notes didn't you.
> A. Yes I did.
> Q. Based on that, wouldn't you also tell the doctor about that prior to them attending on the patient.
> A. Yes I would.
> Q. Because that would be important wouldn't it.
> A. Yes that's correct.' [65]

Later in her evidence Ms Marten seemed to favour the notion that in fact she may have written the note about shoulder tip pain at a time before Dr Master's examination[66]. Then, again at a later point in the evidence that Ms Marten gave on the first occasion she asserted that when Dr Master was leaving the ward following her examination of Mrs Paltridge she asked Dr Master why Mrs Paltridge had shoulder tip pain and that Dr Master had said '*I don't know*'. Ms Marten said that she was sure that she mentioned shoulder tip pain to Dr Master and that she had a memory of doing so[67]. Ms Marten repeated that assertion. When asked by Ms Kereru, counsel assisting, why this had not

[64] Transcript, page 194
[65] Transcript, page 209
[66] Transcript, page 214
[67] Transcript, page 216

been mentioned in her original witness statement, Ms Marten said that she remembered it later and had not remembered it at the time she gave her statement to police.

9.7. On the issue as to the nature of the shoulder pain, Ms Marten told the Court that at midnight Mrs Paltridge had complained of shoulder pain, but that at 3:10am had said that it was aching more than it had previously. She asserted that Mrs Paltridge had said that at some point her husband had picked her up by the arm and shoulder. This had been suggested as being a possible explanation for this pain in Mrs Paltridge's view[68]. However, Ms Marten told the Court that she recorded the pain as shoulder tip pain because she felt that the shoulder was exhibiting pain more than '*just someone who had like pulled their shoulder*'[69]. She believed that the pain was explained by more than simply a pulled shoulder. The words '*shoulder tip pain*' were not those of Mrs Paltridge, but that was the expression that Ms Marten had chosen to describe the pain that Mrs Paltridge was describing. At one point in her original evidence Ms Marten suggested that Mrs Paltridge herself had pointed to her shoulder and had said that she felt like it was more than just her shoulder aching. Ms Marten told the Court that she knew that shoulder tip pain could be a symptom of underlying pathology such as pleuritic irritation. While acknowledging that shoulder pain could have a traumatic origin, Ms Marten agreed that what she was trying to convey in her description of Mrs Paltridge's shoulder pain was something not necessarily consistent with trauma. She told the Court that she had not been convinced that the husband's actions of grasping his wife explained Mrs Paltridge's shoulder pain. She said:

> 'I wasn't entirely convinced that it was all of her pain. I just wasn't. It just didn't sound right.' [70]

Also when asked whether the shoulder tip pain was consistent with something happening internally in Mrs Paltridge, she said:

> 'It just - the clinical picture showed there - I felt the clinical picture showed that there might have been something else wrong, but at the time I just couldn't put my finger on it.' [71]

9.8. The clear impression of Ms Marten's original evidence was that she believed that a traumatic origin for the shoulder pain was not a convincing explanation, that something may have been taking place internally with Mrs Paltridge and that the shoulder pain

[68] Transcript, page 202
[69] Transcript, page 207
[70] Transcript, page 215
[71] Transcript, page 215

was a reflection of that. It is for that reason that she used the term of art 'shoulder tip pain' in her notes. She said that she was concerned enough to ask Dr Master what the possible origin of the shoulder tip pain was but that Dr Master did not know.

9.9. The evidence would suggest that the shoulder pain experienced by Mrs Paltridge is consistent with internal pathology that we know she was experiencing at that time.

9.10. In her original oral evidence Ms Marten was adamant that she had again called Dr Master to return and that Dr Master had refused[72]. When asked as to why Ms Marten herself did not go over Dr Master's head and summon a Registrar she said that she felt intimidated at the time and felt that she could not ring the Registrar[73].

9.11. Following Ms Marten's original evidence Ms Doecke ceased acting for her. I infer that this was occasioned by the evident conflict between Ms Marten's evidence and Dr Master's statement. Ms Marten was recalled to give further evidence. The flavour of her resumed evidence would be starkly different. Dr Master would not give evidence until Ms Marten had completed her evidence on the second occasion.

9.12. On the second occasion that Ms Marten gave evidence she was represented by Mr Bonig of counsel.

9.13. Ms Marten told the Court on the second occasion that, having reflected on the matter, she was certain that the note regarding shoulder tip pain had been written at a time after Dr Master had reviewed Mrs Paltridge. Having considered the matter carefully, in my opinion it is possible that Ms Marten did in fact write all of the note on page 68 of Exhibit C6 at a time after Dr Master had examined Mrs Paltridge and that therefore Dr Master had no opportunity to see the written reference to shoulder tip pain. I deal with the whole issue on that basis.

9.14. However, Ms Marten's evidence concerning the nature of the shoulder pain was very different from what she had said originally about that issue. In answer to questions from her new counsel Mr Bonig, Ms Marten told the Court that Mrs Paltridge had indicated on her own body where her pain emanated and that what she had actually described was not shoulder tip pain. When asked as to why she had described the pain in her notes as shoulder tip pain, Ms Marten provided a convoluted explanation about

[72] Transcript, pages 222-223
[73] Transcript, page 223

her being used to describing post-surgical shoulder pain as 'shoulder tip pain', overlooking the fact, of course, that Mrs Paltridge had not experienced any such surgery[74]. I think what Ms Marten was saying was that her writing 'shoulder tip pain' had been an instinctive reaction. But her evidence on this occasion also contradicted her original witness statement. She explained this by saying that she had been very upset at the time of writing it. She also said that the shoulder pain she was referring to in her note was the pain that had been described to her as possibly having been from Mrs Paltridge's husband's effort at catching her. She agreed that this would not be shoulder tip pain. This is inconsistent with Ms Marten's earlier evidence where she had said that she believed the pain was something additional to, or different from, pain of a traumatic origin.

9.15. There was more important inconsistency in the content of her resumed evidence. Contrary to what Ms Marten had originally said in evidence, she now denied that she had asked Dr Master why Mrs Paltridge had shoulder tip pain and that Dr Master had said that she did not know[75]. Ms Marten indicated that she may have said that to some other person[76]. When specifically asked whether there had been concern in her mind that Mrs Paltridge's shoulder pain may have had some internal origin, Ms Marten said '*no*'[77]. This is a clear contradiction of her earlier evidence. When asked as to why she had changed her evidence, she said that when she had driven home after giving evidence on the first occasion it had occurred to her that her evidence was not correct.

9.16. Ms Marten denied that she was endeavouring to protect Dr Master.

9.17. In her evidence Dr Master denied that she had been told anything about shoulder tip pain at any stage. She denied emphatically that she had been called back by Ms Marten to see the patient again.

9.18. It will be seen from the above analysis that Ms Marten's evidence could not be relied on where it conflicted with Dr Master. However, I hold a deep suspicion that Ms Marten came to the Court on the second occasion in an endeavour to downplay the significance of her entry in the notes concerning shoulder tip pain. In any event I prefer Ms Marten's original evidence about her beliefs as to the possible origin of

[74] Transcript, page 569
[75] Transcript, page 586
[76] Transcript, pages 586-587
[77] Transcript, page 587

Mrs Paltridge's shoulder pain. It was supported by what she had originally said in her witness statement wherein on more than one occasion she described Mrs Paltridge's pain as shoulder tip pain and said nothing about it possibly having a musculo-skeletal origin. Her original evidence that she thought at the time that Mrs Paltridge's own explanation for the pain was unconvincing, and that the nature of the pain may have had a more concerning internal origin, made sense and had a strong ring of truth to it. On the other hand, her revised evidence on this issue made little sense at all. I find that when Ms Marten wrote 'shoulder tip pain' in the clinical notes she did so advisedly and intended the entry to reflect concern on her part that the pain possibly reflected an internal pathology as distinct from having a musculo-skeletal origin. My belief is that the shoulder pain that Mrs Paltridge was experiencing was reflective of her internal pathology.

9.19. However, for reasons that would seem obvious I am unable to rely on any statement made by Ms Marten, either as contained in her witness statement or in her oral evidence, that she drew shoulder pain to Dr Master's attention. I am also unable to accept any statement on her part that she called Dr Master back to re-examine Mrs Paltridge. Be all that as it may, Ms Marten's concern that Mrs Paltridge's shoulder tip pain reflected internal pathology and her general impression of Mrs Paltridge's continuing state of unwellness were matters that required the attention of an experienced medical practitioner and not that of a resident medical officer.

9.20. It was regrettable that the evidence of what transpired between 3am to 4am that morning became so obfuscated. The events of that period were important because the evidence would suggest that Mrs Paltridge may have been saved had a diagnosis of her condition been vigorously pursued at that time. What is clear is that for reasons that are less than clear matters were then left to drift along as they already had for several hours, the only tangible aim being the administration of an ultrasound to be performed at an unspecified time in the morning, an arrangement so vague and uncertain that it would never be carried out. The sad reality was that there was much more urgency required at that time than that.

9.21. In analysing the changes of story involved in Ms Marten's evidence, the Court does not imply any criticism of her counsel.

10. Diagnostic measures

10.1. I have already noted that no definitive diagnosis was made in respect of Mrs Paltridge at any time before her death other than Dr Matthews' belief that when in extremis Mrs Paltridge was experiencing an internal haemorrhage which proved to be the case once she was operated on.

10.2. Mrs Paltridge was subjected to two bedside ultrasound examinations during the course of the afternoon of 14 April 2012. The ultrasound examinations revealed nothing of note. It is fair to say that the ultrasounds, which were administered by Drs Cash and Reilly respectively, had not been designed to reveal pathology of the kind under discussion in this Inquest.

10.3. It was Dr Reilly who ordered the upper abdominal ultrasound for the following morning and for that purpose Mrs Paltridge was to fast from midnight. That ultrasound examination would not be carried out. It is clear that this proposed ultrasound was not intended to specifically address the possibility of a ruptured or leaking splenic artery aneurysm. The Court was unable to establish with any degree of certainty why it was that the ultrasound was not carried out at a time prior to Mrs Paltridge's fatal collapse at about 10:45am on 15 April 2012. It was clear that the ultrasound was required. It was not in any way expedited. What was established was that a sonographer, Ms Catrina Panuccio, was on duty during the morning of Sunday 15 April 2012 and that morning conducted a number of scans on other patients. She was at the hospital from 8:30am until midday. None of this is meant to imply that Ms Panuccio is in anyway at fault in not performing the ultrasound examination. There was evidence to suggest that the form that may have been completed in relation to the request for the examination was misplaced. In short, Ms Panuccio was unaware that she was required to examine Mrs Paltridge and was certainly not aware of any particular urgency as far as the examination was concerned. The reason for this probably is that there was no urgency detected on the part of any person in the performance of any such examination.

10.4. Ms Panuccio gave oral evidence in the Inquest. She told Ms Kereru of counsel assisting that if she had been requested to perform an ultrasound where the clinical details were described as colicky left flank pain in association with left upper quadrant and epigastric pain, she would not have viewed such an examination as urgent and may have given

other scans that she performed that morning greater priority[78]. However, if she had been asked to perform an examination with that clinical picture in mind, she said that she would have looked mainly at the kidneys and the spleen on the left hand side, together with the liver and the gallbladder. With those clinical features, she would have been examining the size of the spleen and the fluid around it, if any. However, Ms Panuccio did say that she would not have been looking for a ruptured splenic artery aneurysm[79]. At that time Ms Panuccio said that she only had a vague awareness of that type of pathology, although she had seen one splenic artery aneurysm during her training, which was already known before the imagery was conducted. That aneurysm had been of a very large character. Generally speaking, according to Ms Panuccio, it is very rare to pick up a splenic artery aneurysm on ultrasound.

10.5. Ms Panuccio did tell the Court that if, say, the appearance of fluid was evident upon any ultrasound that she conducted, that would have been reported to the radiologist and then to the requesting doctor. A radiological registrar would have been available to examine the ultrasound.

10.6. Much of this raised necessary questions as to what, if anything, an ultrasound examination may have revealed and when. The same question applied to other more definitive diagnostic measures such as a CT angiogram. To this end an independent expert radiologist was called during the Inquest to give general evidence about these matters. That person was Dr Avninder Sandhu to whom I have already referred in another context.

10.7. Dr Sandhu gave evidence about the diagnostic modalities that would be relevant to the condition of ruptured splenic artery aneurysm. Dr Sandhu told the Court in effect that the ultrasounds performed by Drs Cash and Reilly would have had limited utility in respect of any possible diagnosis of ruptured splenic artery aneurysm, not that Drs Cash and Reilly were looking for the same in any event. Neither ultrasound in his view would have eliminated the possibility of the existence of free fluid such as blood in the lesser sac. If Mrs Paltridge's haemorrhage at that time had been contained within the lesser sac, which is highly likely at that point, this haemorrhage would not have appeared in the ultrasounds that were taken by Drs Cash and Reilly[80]. In fact Dr Sandhu

[78] Transcript, page 330
[79] Transcript, page 335
[80] Transcript, pages 468, 473, 474 and 481

stated that an initial bleed into the lesser sac would almost never be visualised on an ultrasound[81]. Thus it is that complete reassurance in respect of any possible haemorrhage could not have been derived from the ultrasounds performed by Drs Cash and Reilly[82].

10.8. On the other hand, Dr Sandhu suggested that a sonographer looking at the spleen would be able to pick up free fluid next to it[83]. The ultrasound would have shown free fluid in the left flank[84].

10.9. Dr Sandhu was asked as to what purpose the planned ultrasound in the morning would have served, that is to say the ultrasound that was never administered. Dr Sandhu suggested that this ultrasound would have served as an 'excludogram'[85]. He explained that it would have ruled out a suspected kidney source of Mrs Paltridge's difficulties[86]. However, more importantly having regard to the episode that Mrs Paltridge's experienced at approximately 3am, he suggested that the sonographer in the morning probably would have found free fluid. He said '*I think that would have been picked up if that had been done*'[87]. He further explained that blood that had entered the peritoneal cavity would have been picked up by the ultrasound[88]. The detection of free fluid in the morning could then have led to the administration of a CT angiogram which would have been the diagnostic measure utilised to detect the source of free fluid.

10.10. Dr Sandhu suggested that cross-sectional imaging with a CT angiogram is the main modality for the investigation of acute bleeding into the abdomen and pelvis and would be the gold standard for a diagnosis of splenic artery aneurysm. Dr Sandhu stated that although the radiation would pose some risk to a 23 week old foetus, there were measures that could be implemented to mitigate that risk such as the use of a lead apron. When asked as to whether he himself would have been prepared to perform a CT angiogram in the circumstances that prevailed here, Dr Sandhu suggested that he would have been so prepared provided a consultant had seen the patient and had authorised it.

[81] Transcript, pages 473, 474
[82] Transcript, page 480
[83] Transcript, page 477
[84] Transcript, page 478
[85] Transcript, page 482
[86] Transcript, page 483
[87] Transcript, page 483
[88] Transcript, page 489

10.11. The question is whether in the morning blood had by then migrated into the peritoneal cavity. If it had so migrated, there is reason to believe that if Mrs Paltridge had been administered with the ultrasound sometime during the morning of the day of her death, and at a time before her final collapse, it would have detected free fluid in the abdomen. There seems little doubt that if free fluid had been detected, a medical practitioner at consultant level such as Dr Matthews would have been consulted and would have seen the patient. There is further reason to believe, therefore, that the diagnostic measure of a CT angiogram would have been implemented and Mrs Paltridge's ruptured splenic artery aneurysm would have been diagnosed.

11. The expert evidence

11.1. In this section I will discuss the evidence of Drs Matthews and Walters and that of Professors Pepperell and Welsh. I note that of those four practitioners, Professors Pepperell and Welsh are independent experts in the sense that they had no connection with Mrs Paltridge or her management at the WCH. On the other hand, Drs Matthews and Walters did have an involvement which I have elsewhere described.

11.2. Dr Matthews

Dr Matthews was the consultant obstetrician and gynaecologist who was asked to see Mrs Paltridge when Mrs Paltridge experienced her final and fatal collapse at about 10:45am on 15 April 2012.

11.3. Dr Matthews is the Director of Obstetrics at the WCH. Dr Matthews has been employed at the WCH since 2008. He has fellowships of the Colleges of Obstetricians and Gynaecologists both in England and Australasia which were obtained in 1995 and 1996 respectively.

11.4. Dr Matthews spoke of his own knowledge and experience of ruptured splenic artery aneurysm. He had personal experience with one previous case in the United Kingdom and knew of the Hooper matter in 2009. That case had enjoyed a successful outcome. Dr Matthews spoke of the difficulty of diagnosis in respect of that matter. Dr Matthews had suspected that something was taking place internally and had decided to perform an abdominal incision which when made revealed free blood in the abdominal cavity. The woman had a ruptured splenic artery aneurysm and she survived.

11.5. In respect of the Hooper matter, Dr Matthews had not been personally involved in that case but spoke of staff debriefings in its wake, which I understood to be more related to the wellbeing of involved staff. Dr Matthews said that he thought there had been a root cause analysis conducted '*or some sort of inquiry*', but had not been involved in it[89]. This was a reference of course to the activities of the Subcommittee where no recommendations had been published. However, Dr Matthews suggested that he believed that there had been some education delivered to staff following that matter, including additional training that included weekly training and orientation relating to the management of haemorrhage and shock[90]. Dr Matthews' evidence about that was very general. The measure of what he was saying in any event is afforded by the vagueness of the knowledge of the medical practitioners who saw or examined Mrs Paltridge. It is also measured by the fact that the 24th report to which I have referred mentions nothing about any measures or educational delivery in the wake of Ms Hooper's death.

11.6. As indicated earlier Dr Matthews told the Court that it was quite possible that he himself may have made an earlier diagnosis of Mrs Paltridge if he had been consulted[91].

11.7. Dr Matthews suggested that in retrospect what had probably happened with Mrs Paltridge was that during her admission the splenic artery had been leaking and the complaints of pain and feeling faint were probably related to that[92]. He also agreed that in retrospect Mrs Paltridge had displayed classic symptoms of a ruptured splenic artery aneurysm[93]. Whilst Dr Matthews agreed that this was so in retrospect, he also agreed that when one packaged the signs and symptoms of Mrs Paltridge's presentation together, it would lead a clinician to think about bleeding and shock. In fact he agreed that her presentation would not be all that readily diagnosed as something other than bleeding and shock[94]. He said that he would not disagree with the proposition that there would need to be some specific education directed towards clinicians about this condition. In this regard in his evidence Dr Matthews appeared to suggest that there was a need for educational emphasis to be placed on recognition of signs of shock. The Court makes the observation, however, that the difficulty with this is that patients do

[89] Transcript, page 409
[90] Transcript, page 445
[91] Transcript, page 443
[92] Transcript, page 393
[93] Transcript, page 429
[94] Transcript, page 436

not necessarily present in shock in the first instance. Dr Matthews suggested that the first signs of shock appeared through the night for Mrs Paltridge .

11.8. As far as methods of diagnosis were concerned Dr Matthews told the Court that after he became involved in the matter and the sonographer was asked to perform an ultrasound of Mrs Paltridge, the sonographer identified fluid in the abdomen[95]. Dr Matthews agreed with the proposition that it was very likely that if an ultrasound had been undertaken by a sonographer an hour or so earlier, free fluid would have been identified at that time. To this Dr Matthews said '*I absolutely agree, accept that*'[96]. Aligned with this concession in my view is a further concession by Dr Matthews that if a doctor entertained concern about the possibility of splenic artery aneurysm and of a possible catastrophic haemorrhage, that one would not delay any investigations, and in fact would be conducting them urgently[97]. Dr Matthews acknowledged in this regard that rightly or wrongly he did not believe that the doctors had seriously considered splenic artery aneurysm was likely. Dr Matthews was asked this:

> 'Q. Would you agree then that there is an element of pointlessness in ordering a diagnostic measure that might identify a cause that could - by the time the diagnostic measure is implemented kill the patient.
>
> A. I think if I may, what you're saying is that if you seriously are saying that diagnosis and suggesting investigations, that you would do them straight up rather than delay because of the seriousness. I would concede that.' [98]

11.9. Dr Matthews told the Court that at the WCH awareness of the condition of splenic artery aneurysm is now very great[99]. This is in the light of the fact that there have now been two deaths at the WCH from this cause which is statistically an unusual happening. In this respect Dr Matthews' attention was drawn to the finding of the Victorian Coroner in the Johnson case. He said that he was not aware of the College having circulated anything about this condition through the obstetrics community, an action which we have seen had been suggested by the Victorian Coroner as an appropriate thing to occur[100].

11.10. In both his witness statement[101] and his oral evidence Dr Matthews expressed a compelling opinion that in the view of the WCH Obstetrics Department, the Department

[95] Transcript, pages 439-440
[96] Transcript, page 440
[97] Transcript, page 433
[98] Transcript, page 433
[99] Transcript, page 438
[100] Transcript, page 439
[101] Exhibit C17

should be located within the Royal Adelaide Hospital. He told the Court that the Department had made strong representations to that effect over the years. In his witness statement he said:

> 'These kinds of unusual dramatic scenarios are potentially better managed where adult services are directly available. The RAH Emergency Department for example, just might have picked up on this as there are more people around with more general experience, again this all very hypothetical.' [102]

In his oral evidence Dr Matthews emphasised what he had also asserted in his statement, namely that there is an element of risk in having a maternity unit such as the WCH isolated from adult medical services. He pointed out that the WCH was the last such remaining hospital in Australia. He suggested that having complex adult services dislocated from mainstream adult services poses additional risks. He suggested that if Mrs Paltridge had been in a general hospital they may have considered using the services of a surgical registrar earlier in the process and that in that event perhaps an earlier diagnosis might have been made. In his evidence he said this:

> 'So we don't have general surgical services on our site so cases where there's potential surgical diagnosis while we can get it we do have a memorandum of understanding with Queen Elizabeth Hospital whereby we can access surgical services. So we've had that arrangement in place for years. Formerly it was with the Royal Adelaide Hospital. We switched it to the Queen Elizabeth Hospital because they are able - they seem to be able to offer us a very good service as Dr Walters did in this case. But having said that, the isolation of maternity services from general adult services is in my view a risk factor in and of itself. We can put in place a whole series of mitigations which we have done but it still stands that at least in my view that poses a challenge.[103]

He added that there was also a strong desirability in at least having access to surgical diagnostic services within the WCH as distinct from having to consult a person at a remote hospital such as in this case, the Queen Elizabeth Hospital. Dr Matthews summed it up by saying:

> 'So in my view the collocation of the women's part of the Women's and Children's with the Royal Adelaide Hospital is ultimately the solution.' [104]

11.11. Dr Matthews was very persuasive in his argument for the co-location of maternity services within an adult general hospital.

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[102] Exhibit C17, page 10
[103] Transcript, page 446
[104] Transcript, page 448

11.12. Dr Walters

Dr Walters was the surgeon who performed Mrs Paltridge's surgery. Dr Walters emphasised that he is not a specialist vascular surgeon, although he had undertaken some training in respect of that discipline as part of his general surgical training. Dr Walters pointed out that a vascular surgeon would be the person best skilled to deal with an aneurysm that was so close to the aorta as was the case here. Dr Walters told the Court that corrective surgery even under ideal circumstances would have been difficult due to the proximity of the aneurysm to its origin in the vicinity of the aorta.

11.13. Dr Walters gave some general evidence about the signs and symptoms of an internal haemorrhage. He suggested that the tenderness and either voluntary or involuntary guarding that is the result of blood within the peritoneal space can be masked by pain relief[105]. He did say that guarding, or rigidity as it is otherwise known as, and rebound tenderness are late signs. He disagreed with the suggestion, however, that blood in the peritoneal cavity would cause little rebound tenderness or abdominal wall guarding. On the other hand, bleeding into the retroperitoneum quite often will have no abdominal signs at all. The same applies for the lesser sac. This is relevant to the question of whether, when assessing whether a contained initial bleed from a ruptured aneurysm had occurred, reassurance could be derived from the lack of any such signs and symptoms. The preponderance of evidence on this would suggest that little or no reassurance could be so derived. He suggested that the retroperitoneum was '*potentially a silent space*'[106].

11.14. Dr Walters spoke of the double rupture phenomenon where blood was contained initially in the retroperitoneum. He theorised that Mrs Paltridge's initial fainting episode with pain was the initial leak into the retroperitoneum where it was contained for a period of time. One could lose approximately two litres of blood into that space. He then described the second space or the lesser sac which can contain another one or two litres of blood. A final rupture and bleed might occur into the peritoneal cavity which has the capacity to take up the whole blood volume and which would be a catastrophic event. Dr Walters suggested that in Mrs Paltridge's case her bleeding

[105] Transcript, page 355
[106] Transcript, page 373

tamponaded or stopped for a period of time. She then had another episode at 3am and then there was the final catastrophic rupture[107].

11.15. As far as shoulder tip pain was concerned Dr Walters was of the view that shoulder tip pain from the presence of blood could be either on the left or right shoulder tip[108].

11.16. Dr Walters also gave evidence about the difficulty of surgery in respect of a ruptured splenic artery aneurysm. In his oral evidence Dr Walters placed some emphasis on the fact that Mrs Paltridge's cardiac arrest and the need for CPR had caused technical difficulty as far as her surgery was concerned, and that this was also complicated by the fact that the lack of cardiac output created considerable difficulty in identifying the source of the bleeding. He said '*I couldn't perform a definitive or therapeutic manoeuvre really, because there was no output*'[109]. Clearly, therefore, surgery is inherently more likely to be successful in a patient who is not being actively resuscitated during the course of the surgery.

11.17. Dr Walters was asked to comment upon Mrs Paltridge's chances of survival if she had not gone into cardiac arrest following induction of anaesthesia. To this Dr Walters suggested that in those circumstances he may have been able to undertake a splenectomy and to have clamped the artery. I did not understand Dr Walters to say there would have been any certainty in the outcome, but he explained that it would be a less complicated process in a patient who had a natural output. Dr Walters was asked whether more favourable circumstances, including identification of the bleeding point, may have improved Mrs Paltridge's chances of survival. He suggested that one would have been in a better position to have controlled the situation[110]. He said:

> 'Yes, I think there is no doubt about that. My understanding of these cases are that clearly early diagnosis is important and misdiagnosis or delayed diagnosis is catastrophic because as you have no doubt already heard, there's quite - the foetal and maternal mortality is very high in these rare cases. What is also clear is that having a vascular surgeon or a general surgeon involved early in the piece improves that outcome considerably; it doesn't eliminate it completely but you might have a maternal mortality of 75% which might go to 40 or 30.' [111]

[107] Transcript, page 374
[108] Transcript, page 356
[109] Transcript, page 368
[110] Transcript, page 372
[111] Transcript, page 371

11.18. Professor Pepperell

Professor Roger Pepperell is an obstetrician and gynaecologist who from 1978 to 1998 was Chairman of the Department of Obstetrics and Gynaecology at the University of Melbourne and the Royal Women's Hospital. He has also held other positions within hospitals and within the University. He has had an overseas professorship in obstetrics and gynaecology. Professor Pepperell has given independent expert evidence on many occasions in respect of obstetric and gynaecological matters. He prepared two reports in respect of Mrs Paltridge's death[112]. Professor Pepperell also gave oral evidence at the Inquest.

11.19. At the commencement of his first report[113] Professor Pepperell made the following observation:

> 'Although I have never seen a case of splenic artery aneurysm rupture in pregnancy, I was well aware of the problem because of its well-known very high maternal and perinatal mortality and the need to consider this possible diagnosis in anyone with left sided upper abdominal pain.'

This paragraph from Professor Pepperell's report neatly encapsulates the dilemma in respect of ruptured splenic artery aneurysm in pregnancy. So uncommon is the problem, Professor Pepperell has not seen a case of splenic artery aneurysm in pregnancy, but was nevertheless familiar with the condition, not because of personal experience but because of its potential catastrophic consequences. It was through Professor Pepperell that much of the literature that the Court received in evidence had been made available. To my mind both the literature and Professor Pepperell's notion as set out in the above paragraph taken from his report makes it very plain that the rarity of the condition can never be seen as an excuse for a lack of professional knowledge of that condition.

11.20. Professor Pepperell commented on what he believed the course of Mrs Paltridge's decline had been. In his first report Professor Pepperell expressed the view that Mrs Paltridge presented to the WCH with typical features of a splenic artery aneurysm. He suggested that the final bleeding probably commenced at about 0300 hours on the day of Mrs Paltridge's death[114]. He said that the continuation of the pain and the fact

[112] Exhibits C19 and C19a
[113] Exhibit C19
[114] Exhibit C19, page 6

that it was still at a level of 10 was obviously a major concern and should have been seen as such[115].

11.21. As to Mrs Paltridge's right shoulder pain Professor Pepperell suggested that if Mrs Paltridge had in fact been experiencing shoulder tip pain, as had been recorded by Ms Marten, that would also have been a matter of concern because it would have suggested that there was blood under the diaphragm. Professor Pepperell stated that left shoulder tip pain would be more likely reflective of a bleed from the splenic artery area, although if there was bleeding from the right hand side underneath the liver and the gallbladder it could certainly produce right sided shoulder tip pain. He said that left sided pain is more common because there is more access to the peritoneum in that side. He said that it is possible for blood to have tracked to an area where one might experience right shoulder tip pain[116]. He agreed with counsel assisting that shoulder tip pain whether left or right sided raises a red flag as to the presence of blood in the peritoneal cavity[117]. In any event he was of the view that this would be something that needed to be passed on to Dr Master at the time and, if so, that the information in turn needed to be passed on to another practitioner who could provide assistance[118]. The difficulty is that I am unable to find that Ms Marten did inform Dr Master either by way of a note or verbally that Mrs Paltridge was experiencing shoulder tip pain.

11.22. As to the examination by Dr Scharnberg at 9:15am, Professor Pepperell expressed the view that an ultrasound at that time probably would have revealed free fluid in the abdomen because within about an hour of this Mrs Paltridge experienced her fatal collapse. He suggested that by 9:15am blood from the aneurysm would have entered the peritoneum and could have been recognised on ultrasound as blood in the peritoneal cavity[119]. If that had occurred the appropriate course would have been an emergency laparotomy[120]. Professor Pepperell expressed the view that if a laparotomy had been performed at that time, Mrs Paltridge's response to general anaesthesia almost certainly would have been more favourable. Mrs Paltridge would not have been so anaemic and

[115] Transcript, page 525
[116] Transcript, pages 544-545
[117] Transcript, page 561
[118] Transcript, pages 543-544
[119] Transcript, page 534
[120] Transcript, pages 534-535

at that time she would not have experienced the reduction in her blood volume that clearly occurred at a later time[121].

11.23. Professor Pepperell did not agree that at 9:15am reassurance could have been derived from Mrs Paltridge not showing any signs of rebound tenderness or rebound pain. Professor Pepperell expressed a view, which was disputed elsewhere in the evidence, that blood in the peritoneal cavity does not produce the severe signs that one sees with infection in the peritoneal cavity. It will be remembered that Dr Walters suggested that these types of signs were a late sign in haemorrhage. The evidence that one is compelled to accept, namely that Mrs Paltridge probably was bleeding into the peritoneal cavity at 9:15am, tends to indicate that Professor Pepperell is correct in asserting that no reassurance could legitimately have been derived from a lack of rebound tenderness or rebound pain. The evidence would favour the proposition that Mrs Paltridge may have bled into the peritoneal cavity by that time and that diagnostic measures, including the abdominal ultrasound that was meant to be carried out, may well have established this.

11.24. Professor Pepperell was not critical of the fact that none of the practitioners who saw Mrs Paltridge from time to time did not diagnose a ruptured splenic artery aneurysm. He was more critical of the fact that was a consultant was not brought into the matter at any time prior to Mrs Paltridge's final collapse. I have given anxious consideration to the question as to whether it would be appropriate for the Court to repeat that criticism. I have concluded that the evidence does not allow for that. Were it not for the fact that none of the practitioners in question, probably through no fault of their own, had a complete and proper understanding of the signs and symptoms of ruptured splenic artery aneurysm and for that reason had not given any real credence to the possibility that Mrs Paltridge was experiencing a life threatening episode, the Court would have had no hesitation in endorsing Professor Pepperell's views on this issue. To my mind, fault in this regard lies more with those responsible for the education and professional development of those practitioners.

11.25. Professor Pepperell was critical of the fact that Dr Scharnberg took no observations of her own during the course of her examination of Mrs Paltridge.

[121] Transcript, page 535

11.26. As to relevant methods of diagnosis, Professor Pepperell suggested that the radiation from a CT angiogram after 20 weeks gestation was much less likely to cause a problem for the baby and observed that if it was being performed because of a potentially very serious problem for the mother one would accept the minor risk involved[122]. This opinion was shared by Professor Welsh whose evidence I will come to in a moment. It will also be remembered that the expert radiologist testified that he would take his cue, as it were, from a consultant physician in agreeing to a CT in these circumstances.

11.27. Finally, as to the question of the preventability of Mrs Paltridge's death, Professor in his report Pepperell stated that if Mrs Paltridge had undergone surgery at the hands of an experienced vascular surgeon prior to the massive bleeding occurring, it is almost certain that the aneurysm could have been removed and the bleeding controlled. If the surgery was not performed until the final massive bleeding occurred, the chance of Mrs Paltridge surviving would have been much less. He repeated his view that at 9:15am the surgery would have been difficult, but she would not have been as shocked as she was 90 minutes later, but even in those circumstances there was no absolute guarantee it would have been effective and have saved her life, but it would have been more likely to have done so[123].

11.28. Professor Welsh

Professor Alec Welsh was called to give evidence at the request of the Crown Solicitor acting for the WCH and other entities. Professor Welsh also provided a report[124]. Professor Welsh's post is Professor in Maternal-Foetal Medicine at the Royal Hospital for Women at Randwick, New South Wales. Professor Welsh also has a Chair at the University of New South Wales.

11.29. Professor Welsh also spoke of the rarity of the condition of ruptured splenic artery aneurysm and the difficulty in diagnosis. In this regard he referred to the fact that pregnant women commonly often have presentations with severe abdominal pain that are either not due to a ruptured aneurysm or which give rise to no particular diagnosis at all.

11.30. Professor Welsh commented upon the probable clinical course of Mrs Paltridge's presentation. In his report he states that there were probably three rupturing events, but

[122] Transcript, page 554
[123] Transcript, page 539
[124] Exhibit C22

that there was no clear shock until the third of those events. In his oral evidence Professor Welsh expanded upon this view. He suggested that there was probably an initial bleed in the shopping complex, a probable second bleed at around 3am and then the final catastrophic bleed. Professor Welsh believed that it would be wrong to say that Mrs Paltridge was continually bleeding. Rather, he believed that there were three separate episodes where acute bleeding took place. He was of the belief that examinations of Mrs Paltridge throughout her admission suggested that there was no evidence of blood having migrated into the peritoneal space until the catastrophic collapse at the end[125]. Accordingly, Professor Welsh was of a view that the lack of evidence of guarding and rigidity was of some significance throughout. Professor Welsh believed that Professor Pepperell's suggestion that even if guarding and rigidity was not present one would still have to consider that there might be blood in the peritoneal cavity was '*absolute rubbish*' [126]. On the other hand, the evidence would suggest that these signs would not be present where the blood had effectively tamponaded within the retroperitoneal space. Dr Walters' evidence was that signs such as those under discussion were late signs of internal bleeding in any event. I have preferred the evidence of Dr Walters, a surgeon, as to this issue. It is supported by Professor Pepperell's evidence to the extent that Professor Pepperell asserts that lack of guarding and rigidity was still consistent with the presence of peritoneal blood. The preponderance of evidence is that in considering a possible diagnosis of ruptured splenic artery aneurysm limited significance can be placed on the absence of signs such as abdominal rigidity and the like. Put in another way, if a clinician was waiting for signs such as those to appear before such a diagnosis came to be seriously considered, the clinician would be doing the patient a grave disservice because by then a catastrophic and potentially fatal situation probably would have developed. I do not believe that Dr Scharnberg's failure to detect such signs in Mrs Paltridge's case necessarily meant that she was not experiencing a bleed into her peritoneal cavity at the time of Dr Scharnberg's examination.

11.31. Professor Welsh was not critical of the medical practitioners who saw Mrs Paltridge. Nor was he critical specifically of a failure to notify a consultant specialist concerning Mrs Paltridge throughout. In his report he suggested:

[125] Transcript, page 655
[126] Transcript, page 669

> 'Such rarity of presentation and low likelihood of ever encountering such a case clinically makes it extremely difficult to say with confidence that one would have made the correct diagnosis in this case with any certainty, no matter the seniority of clinician.' [127]

He reiterated this view in his evidence before the Court. In my view it would be very difficult to defend such a position now in the light of the two experiences with the condition at WCH and the findings of the coronial Inquest in Victoria in 2014.

11.32. Like Professor Pepperell, Professor Welsh suggested that a CT angiogram at 23 weeks gestation would not have presented any significant risk to Mrs Paltridge.

11.33. Professor Welsh agreed that Dr Scharnberg should have taken observations herself[128].

11.34. Professor Welsh was asked about a possible scenario that may have developed if a consultant had been called at around 9:30am on the day of Mrs Paltridge's death. Professor Welsh said that he could not say with absolute certainty that if, say, he was the consultant on duty that he would have reached a diagnosis of splenic artery aneurysm. However, he agreed that it would have been safer for Mrs Paltridge for surgery to have been performed before the final catastrophic rupture[129]. He said:

> 'I actually think that the only window that would be relatively safe and even then you've got somebody, you know, the case reports of going in to operate on somebody who's already even had their initial rupture still contain a significant mortality, but I think that it would be somewhere in between that window of 1720 and 3.45. I think at even at 3.45 if already there had been a second bleed, it would be a very unstable situation ... to pregnancy, so that the window if there was one is at that first presentation on around 1720 when the decision was made to admit. But looking at those observations I can see nothing that one would do a CT or a laparotomy on.' [130]

12. Remedial steps taken by the Women's and Children's Hospital since 2009

12.1. A number of measures taken by WCH since 2009 have been mentioned in the evidence and have been listed in the written submission of counsel on behalf of the Women's and Children's Health Network and its employees. I have regard to all those matters.

12.2. Specifically the list states that these steps have been taken since Ms Hooper's case in 2009. For reasons that I have already explained it does not appear that any measure that occurred in the wake of the Hooper case was as a result of any recommendation

[127] Exhibit C22, page 6
[128] Transcript, page 663
[129] Transcript, page 666
[130] Transcript, page 675

made by the Subcommittee that examined the matter pursuant to Part 7 of the Health Care Act 2008. There were no such recommendations. The Court's attention, however, was drawn to recommendations made by an independent legal practitioner following Ms Hooper's case[131]. These recommendations were directed more towards general matters than specifically splenic artery aneurysm. An example of this is a recommendation regarding education of medical and nursing staff concerning the symptoms and diagnosis of shock. It will be remembered that patients presenting in the first instance with a ruptured splenic artery aneurysm, including Ms Hooper and Mrs Paltridge, do not always present in shock.

12.3. Counsel's list refers to a number of other measures including maternal early warning scores and charts (MEWS). I have already made reference to Dr Matthews' evidence about training, in particular that in relation to abdominal scanning to identify free fluid in the abdomen. The evidence did suggest, however, that this might only be seen once there has been a haemorrhage into the peritoneal space. There has also been training in relation to identifying shock in a patient, but the same comment applies, that shock is not always part and parcel of an early presentation of ruptured splenic artery aneurysm.

12.4. There has also been reference to what has been termed the PROMPT training program (South Australian Perinatal Emergency Education Strategy) that has been undertaken to improve the knowledge, understanding and responsiveness of staff to obstetrics situations. This has been designed to cater for conditions including ruptured splenic artery aneurysm because it would allow all staff to better recognise signs of bleeding without a revealed blood loss and to enable clinical signs to be identified in the ward by all staff at all levels.

12.5. The comment that the Court would make is that whatever the merit of these measures may be, they did not seem to resonate strongly with any of the clinical staff who saw or examined Mrs Paltridge. One would hope, however, that since Mrs Paltridge's death, clinicians such as those individuals would be very alive to what a presentation of splenic artery aneurysm might look like at all stages of its progress.

12.6. Tendered to the Court was the WCH Health Network Mortality Committee Review Report[132]. This committee is a different entity from the Committee and Subcommittee

[131] Exhibit C7a
[132] Exhibit C23

established under Part 7 of the Health Care Act 2008. The WCH committee report describes recommendations and measures that were implemented following the death of Mrs Paltridge. The recommendations included a requirement that a senior clinician be notified of all Women and Babies Service which is now incorporated into the Woman's Assessment Service, the establishment of an education system for all staff relating to the recognition of and response to deteriorating patients, including those with presentations including splenic artery aneurysm, and in respect of service agreements with the Queen Elizabeth Hospital for surgical services. I intend to make a broader recommendation, encompassing matters such as these, directed at entities other than the WCH.

13. Conclusions

13.1. These are the Court's conclusions.

13.2. Mrs Paltridge died on 15 April 2012 as a result of a ruptured splenic artery aneurysm. A ruptured splenic artery aneurysm is rare and difficult to diagnose. It occurs more frequently in pregnant women. Although suspected very late in Mrs Paltridge's presentation, and at a time when it failed to alter the outcome, it was not diagnosed in Mrs Paltridge at any time prior to her death.

13.3. Mrs Paltridge experienced severe left upper quadrant pain and loss of consciousness when she collapsed at a shopping complex on the afternoon of Saturday 14 April 2012. She was conveyed to the WCH where she remained until her death the following morning.

13.4. I find that Mrs Paltridge's initial collapse at the shopping complex was as a result of a haemorrhage from a ruptured splenic artery aneurysm.

13.5. For a period of time following Mrs Paltridge's admission to the WCH she was haemodynamically stable. She was not in shock.

13.6. At around 3am the following morning Mrs Paltridge experienced a further episode of severe pain which she described as 10 out of 10. I find that this was reflective of further haemorrhage from Mrs Paltridge's ruptured splenic artery aneurysm. This further haemorrhage was not immediately fatal.

13.7. At that time Mrs Paltridge's presentation still remained undiagnosed. She was planned to undergo an ultrasound examination during the morning of Sunday 15 April 2012. The examination was not scheduled to occur at any particular time. A written request for the examination was misplaced. Accordingly, the arrangement for the examination was attended by uncertainty. The ultrasound would not be carried out at any time prior to Mrs Paltridge's final collapse and death.

13.8. At 10:45am on the Sunday morning Mrs Paltridge experienced a further episode of haemorrhage from the splenic artery aneurysm which in the event proved fatal. A ruptured splenic artery aneurysm was suspected by Dr Matthews, a consultant obstetrician who to that point in time had not seen Mrs Paltridge. Mrs Paltridge was prepared for surgery. When Mrs Paltridge underwent induction of anaesthesia prior to abdominal surgery she experienced a cardiac arrest. Notwithstanding this cardiac arrest, Mrs Paltridge's abdomen was opened and a large haemorrhage was identified. The source of the haemorrhage was at no stage identified during the course of the surgery. The surgery was rendered difficult for a number of reasons including significant blood loss and haematoma into the surgical area, the fact that cardiopulmonary resuscitation had to be carried out manually during the course of the operation and the fact that there was very little output of circulation from which a haemorrhage may have been otherwise identified. There were other difficulties. Mrs Paltridge died on the operating table.

13.9. There is no criticism to be directed at the fact that Mrs Paltridge was not administered a blood transfusion prior to surgery.

13.10. When Mrs Paltridge was seen by registered nurse and midwife Marten at approximately 3am on Sunday 15 April 2012, she described pain at her shoulder which Ms Marten recorded as '*shoulder tip pain*'. The involved shoulder was the right shoulder. I find that when Ms Marten made her notation she intended it to be a reference to the possibility that the shoulder tip pain was symptomatic of internal pathology as distinct from having a musculoskeletal origin. The Court finds that this pain was a symptom of Mrs Paltridge's internal haemorrhage. However, other clinical staff would view this pain as more likely having a musculoskeletal origin. This was due to the fact that Mrs Paltridge stated a belief that she had suffered the pain as a result of her husband having wrenched her shoulder at the time of her original collapse at the shopping complex.

13.11. Mrs Paltridge's clinical course was consistent with her haemorrhage having been tamponaded within the retroperitoneal cavity in the first instance. She experienced a further haemorrhage at approximately 3am which was also contained. It is possible that in the period following 3am Mrs Paltridge bled into the peritoneal cavity. I find that by approximately 9:15am when Mrs Paltridge was seen by Dr Scharnberg, she would have bled into the peritoneal cavity. It is likely in my opinion, and the Court so finds, that had an abdominal ultrasound been administered at that time, and possibly before, free fluid within the abdomen would have been identified. In the event the ultrasound did not occur. In my view the failure of the ultrasound to be carried out had at its root the misplacement of the request form and a failure of clinical staff to appreciate the degree of urgency that was required. Had free fluid in the abdomen been identified, one or both of two things would have followed, namely a CT angiogram in order to establish the origin of the free fluid, and/or a laparotomy which also would have established the presence of haemorrhage. By this means it is possible that Mrs Paltridge's ruptured splenic artery aneurysm would have been diagnosed at that earlier point in time. Had that been the case it is likely, and I find, that Mrs Paltridge's surgery would have been significantly less complicated. She would have been far less obtunded than she was following her final collapse at 10:45am and the chances of her not experiencing a cardiac arrest following induction of general anaesthesia would have been much more favourable. I find that the induction of general anaesthesia was a contributing factor to her cardiac arrest in combination with the significant blood loss that had occurred by that time. If surgery had occurred at an earlier point in time, and was surgery that had not necessitated constant cardiopulmonary resuscitation, her chances of successful surgery would have been greater. That said, surgery would have been technically difficult due to the proximity of the aneurysm to the origin of the implicated blood vessel.

14. It is not possible to determine whether or at what point or points in time Mrs Paltridge's survival could have been assured had her ruptured splenic artery aneurysm been diagnosed.

14.1. At the time of Mrs Paltridge's presentation and death there was a body of academic medical literature in existence to the clear effect that a diagnosis of ruptured splenic artery aneurysm should be considered in any pregnant patient who complains of a sudden onset of severe left upper abdominal pain regardless of whether pain or shock

is prominent at the time of evaluation. Further, the literature suggested that maternal and foetal survival depends upon physician awareness of the possibility of splenic artery aneurysm rupture during pregnancy or labour, prompt recognition of the signs and symptoms of the condition and immediate surgery to arrest haemorrhage. The literature emphasised that rupture during pregnancy was associated with very high maternal and foetal mortality rate. The literature urged an increased awareness of the condition so that obstetricians and other 'frontline' staff could entertain the diagnosis of a ruptured splenic artery aneurysm in any pregnant woman who prevents with severe upper abdominal pain.

14.2. In 2009 the WCH was involved in the management of a patient, Ms Monique Hooper, who died of the consequences of a ruptured splenic artery aneurysm following discharge from the hospital. The circumstances of Ms Hooper's presentation and clinical course bore significant similarities to those of Mrs Paltridge three years later. Ms Hooper's ruptured splenic artery aneurysm had only been diagnosed in extremis and at the time at which unsuccessful surgery was performed. The circumstances surrounding Ms Hooper's death was the subject of an inquiry pursuant to Part 7 of the Health Care Act 2008. There is no evidence that any recommendation or meaningful remedial action was forthcoming from that inquiry or whether any measure was identified that might have prevented or reduced the likelihood of a similar event re-occurring. There is no evidence that any particular meaningful lesson was derived from the circumstances surrounding Ms Hooper's death that may have enabled clinical staff employed at WCH in the future to draw on that experience in order to possibly identify and diagnose, at least within a differential diagnosis, a splenic artery aneurysm in another patient. There were a number of lessons that could have been learnt from Ms Hooper's presentation and death, including that shock was not necessarily a feature of such a presentation in its early stages, that an initial haemorrhage may tamponade within the retroperitoneal space thereby providing a period of relative stability following the initial onset of the pathology, that no reassurance from that period of stability could necessarily be derived, that such a patient requires close observation and referral to a consultant obstetrician and gynaecologist at an early point in time and that diagnostic measures should be undertaken without undue delay.

14.3. The issue is not without its difficulty, but I do not believe that any criticism can be directed to the clinical staff at the WCH who saw or examined Mrs Paltridge in respect

of any failure to diagnose, either definitively or within a differential diagnosis, a ruptured splenic artery aneurysm in Mrs Paltridge. My opinion is that this is due to the fact that no medical practitioner who saw Mrs Paltridge was at a consultant level and in any event had an inadequate and imperfect grasp of the features of a ruptured splenic artery aneurysm. This I find was simply the result of a lack of awareness and of professional development in respect of that condition. Mrs Paltridge should undoubtedly have been seen by a medical practitioner at consultant level at a time well before she was in extremis. It is possible, but by no means certain, for example, that Dr Matthews at an earlier point in time on the morning of 15 April 2012 may have formed a view that Mrs Paltridge was experiencing a ruptured splenic artery aneurysm and have taken the necessary diagnostic and remedial measures at a time before she fatally collapsed.

14.4. At the time with which this Inquest is concerned medical practitioners of all ranks at the WCH should have had a working knowledge of the features of ruptured splenic artery aneurysm to have enabled them to have at least given appropriate consideration to whether or not that was the pathology that Mrs Paltridge was experiencing. They did not have that working knowledge. That knowledge should have included knowledge as to the signs and symptoms of the condition as well as an awareness that diagnostic measures are urgent when such a diagnosis is at least a possibility in a particular patient's case. There should also have been an awareness of a need to bring the patient to the attention of a medical practitioner at consultant level.

15. Recommendations

15.1. Pursuant to Section 25(2) of the Coroners Act 2003 I am empowered to make recommendations that in the opinion of the Court might prevent, or reduce the likelihood of, a recurrence of an event similar to the event that was the subject of the Inquest.

15.2. The Court makes the following recommendations directed to the Chief Executive of SA Health, the Chief Executive Officer of the Women's and Children's Hospital, the Chief Executive Officer of the Country Health SA Local Health Network, the President of the Australian Medical Association (SA), the Chair of the Royal Australian and New Zealand College of Obstetricians and Gynaecologists (SA), and the Chair of the Royal Australian College of General Practitioners (SA), :

1) That educational and professional development strategies be directed to the medical profession, including medical practitioners and nursing and midwifery staff, concerning the condition of ruptured splenic artery aneurysm. Such measures should include reference to (a) the proposition which appears to be generally accepted that a diagnosis of ruptured splenic artery aneurysm should be considered in any pregnant patient who complains of sudden onset of severe left upper-abdominal pain regardless of whether pain or shock is prominent at the time of evaluation, (b) the symptomatology of the condition, (c) the fact that patients who are experiencing a ruptured splenic artery aneurysm will not necessarily present in the first instance in shock, (d) the fact that practitioners should be alive to the possibility that false reassurance might be derived for a period of haemodynamic and other stability following the initial episode, (e) the fact that limited diagnostic reassurance can be derived from a patient's positive response to analgesia, (f) the issue as to whether or not the absence of abdominal guarding and rigidity is of diagnostic significance, (g) the diagnostic measures that are available and appropriate to diagnose a ruptured splenic artery aneurysm, and (h) the need for urgency in the conducting of diagnostic measures in cases where a differential diagnosis of ruptured splenic artery aneurysm is involved;

2) Presentations of a pregnant woman who complains of a sudden onset of severe left upper abdominal pain, especially with evidence of loss of consciousness at the time, should immediately be referred to, as far as is possible, a consultant obstetrician and gynaecologist or other medical practitioner at consultant level, including an Emergency Department consultant or surgical consultant;

3) That such patients be the subject of continual and detailed observation, and that such observation should be supervised by a medical practitioner at consultant level;

4) The recommendation of the Victorian Coroner's Court in respect of the death of Michelle Johnson is endorsed, namely:

> 'Intra-abdominal haemorrhage (e.g. ruptured splenic artery aneurysm, ruptured liver) should be considered as part of the differential diagnosis when a pregnant woman presents with severe abdominal pain especially if she requires narcotic analgesia.'

5) That consultations between consultant medical practitioners and radiologists regarding the appropriateness or otherwise of conducting CT scans of pregnant

women in circumstances where ruptured splenic artery aneurysm is a part of a differential diagnosis be encouraged to take place routinely;

6) In cases where ruptured splenic artery aneurysm is part of a differential diagnosis, but where other preferred or more likely diagnoses need to be explored, that all diagnostic measures in respect of those other diagnoses be conducted urgently and at the first available opportunity;

7) That the services currently provided at the Women's and Children's Hospital be co-located with the Royal Adelaide Hospital.

Key Words: Ruptured splenic artery aneurysm; Hospital treatment; Pregnancy

In witness whereof the said Coroner has hereunto set and subscribed his hand and Seal the 25th day of May, 2016.

Deputy State Coroner