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 28th, 29th and 30th days of August 2013, the 2nd and 3rd days of September 2013 and the 8th day of July 2014, by the Coroner's Court of the said State, constituted of Anthony Ernest Schapel, Deputy State Coroner, into the death of Aurora Doreen Maureen Sleep.*

*The said Court finds that Aurora Doreen Maureen Sleep aged 4 days, died at the Women's and Children's Hospital, 72 King William Road, North Adelaide, South Australia on the 21st day of November 2011 as a result of hypoxic-ischaemic encephalopathy attributed to intrapartum asphyxia secondary to uterine rupture and subsequent displacement of the placenta and baby into the maternal abdominal cavity. The said Court finds that the circumstances of her death were as follows:*

## 1. Introduction and cause of death

1.1. Aurora Doreen Maureen Sleep was born at Mount Gambier Hospital by way of emergency caesarean section at 11:32pm on the evening of Thursday 17 November 2011. She died four days later on 21 November 2011. An autopsy was performed by Dr Nick Manton, a pathologist at SA Pathology. Dr Manton's post-mortem report[1] states the cause of Aurora's death to be hypoxic-ischaemic encephalopathy attributed to intrapartum asphyxia secondary to uterine rupture and subsequent displacement of the placenta and baby into the maternal abdominal cavity. I find that to have been the cause of Aurora's death. Aurora's mother's labour had been induced in anticipation of a vaginal delivery. Her death was the result of irreversible hypoxic brain damage

[1] Exhibit C2a

that was sustained when her mother experienced a uterine rupture during labour. The uterine rupture resulted in Aurora and the placenta becoming displaced into the maternal abdominal cavity. This meant that for a period of time Aurora was deprived of life sustaining oxygen that otherwise would have been delivered through the placenta. Aurora was at 38 weeks gestation when she was delivered. There is no reason to conclude that Aurora was anything other than a healthy and viable unborn child prior to the fatal complication in the course of her delivery.

1.2. Aurora's mother was Ms Ashlee Brown who at that time resided with her partner at Mount Gambier. At the time of giving birth to Aurora, Ms Brown was 22 years of age. Ms Brown had previously undergone a number of pregnancies. Her first resulted in a miscarriage. She then had two children who were both born to when Ms Brown was aged 18. Both children had been born by way of vaginal delivery which had been induced in both instances. Thereafter, Ms Brown unfortunately experienced terminations as well as another miscarriage. Ms Brown's most recent pregnancy prior to Aurora was terminated at 18 or 19 weeks of gestation due to the discovery on ultrasound that the foetus was anencephalic. This pregnancy was terminated in December 2010 by Dr George Olesnicky, an obstetrician and gynaecologist who practised in the South East. The termination occurred by way of dilatation of the cervix and piece meal evacuation. Ms Brown had not undergone a caesarean section delivery at any time prior to the delivery of Aurora. I mention Ms Brown's pregnancy history in some detail as to my mind it is relevant to Ms Brown's attitude to the subjection of an unborn child to risks that might be associated with an induced labour.

1.3. The termination of pregnancy that occurred in December 2010 was subsequently complicated by the discovery that the uterine contents had not been completely evacuated. On 14 February 2011 Dr Olesnicky performed a dilatation and curettage (D&C) which resulted in the remaining foetal tissue from the previous pregnancy being completely removed. However, in the course of the procedure Dr Olesnicky caused a perforation to the fundus of Ms Brown's uterus, a recognised possible complication of a D&C procedure. Dr Olesnicky, who was called to give evidence in the Inquest, told the Court that the perforation was caused by the curette and that it involved a small full thickness perforation of perhaps 8mm. Having identified the uterine perforation, Dr Olesnicky performed a laparoscopic examination of Ms Brown's lower abdomen. He did so in order to define the extent of any damage to, and bleeding from, the perforated site of the uterus and also to determine whether

there was any damage to other intra abdominal organs. No significant bleeding from the perforation at the uterine fundus was defined and so no suturing of the perforation was required. There was no damage to any other intra abdominal organ. Dr Olesnicky's expectation was that the perforation would heal naturally. It was common ground during the Inquest that there would be some resulting scarring caused to the uterus at the site of the perforation. Ms Brown was advised by Dr Olesnicky of the perforation.

1.4. Within a matter of weeks of the D&C that had been performed on 14 February 2011, Ms Brown again found herself pregnant. She consulted a local general practitioner about that in April 2011. Thereafter Ms Brown was seen in connection with her pregnancy by doctors at the Hawkins Clinic in Mount Gambier. Towards the end of Ms Brown's pregnancy she developed unstable blood pressure that was characterised by some significantly high and therefore concerning readings. In order to guard against the possibility of pre-eclampsia it was decided that Ms Brown's baby's delivery would be induced as soon as possible. On the evening of 17 November 2011 Ms Brown presented at the Mount Gambier Hospital for this purpose. By reason of the fact that Ms Brown's cervix was unfavourable and not conducive to artificial rupture of the membranes at that stage, and also taking into account the position of the baby's head, it was decided that induction of the birth would be facilitated in the first instance by the application of prostaglandin gel to the cervix. I add here that this measure had been adopted during both of Ms Brown's successful deliveries of her two children. Of course, there had been no suggestion of a previous uterine injury at those times.

1.5. As indicated earlier Ms Brown was induced at 38 weeks gestation. As I understood the evidence there was no hint or suggestion that Ms Brown would have entered into labour were it not for the induction that she underwent.

1.6. The application of prostaglandin gel to Ms Brown's cervix that evening was soon followed by the commencement of frequent and painful contractions of the uterus which were then accompanied by non-reassuring cardiotocograph (CTG) traces in respect of the unborn baby's heartbeat. There can be no question in my opinion, and no-one has seriously suggested otherwise, but that the uterine contractions that Ms Brown experienced were the direct result of the application of prostaglandin gel to the cervix.

1.7. Although Ms Brown's symptomatology was initially thought to be due to a possible placental abruption, it is clear that her uterus had actually ruptured prior to the baby's delivery by way of emergency caesarean section. When the caesarean section was performed, the uterine rupture and its unfortunate complications, including the entry of the baby and the placenta into the abdominal cavity, were immediately identified. The baby was born without overt signs of life and was actively resuscitated with positive pressure respiration, intubation, CPR and adrenalin. Aurora had profound metabolic acidosis. A heart rate was detected at 19 minutes and 50 seconds. The baby was essentially comatose. Aurora was retrieved to the Women's and Children's Hospital where she died four days later from an hypoxic brain injury, undoubtedly sustained during labour and prior to her caesarean section delivery.

1.8. As a result of the uterine rupture Aurora suffered the fatal hypoxic brain injury to which I have referred. As part of the same caesarean section procedure, Ms Brown underwent a necessary subtotal hysterectomy which meant that, at the age of 22, she was rendered incapable of bearing any more children.

## 2. Issues at Inquest

2.1. In this Inquest the Court examined a number of issues as follows:

- Was there a connection between the uterine rupture experienced by Ms Brown and the earlier perforation of her uterus during the D&C procedure in February 2011;
- Was the uterine rupture contributed to by the administration of prostaglandin gel to Ms Brown's cervix in order to induce labour;
- Whether in all of the circumstances it was appropriate for Ms Brown to have been administered prostaglandin gel having regard to the existence of the earlier uterine perforation;
- Whether at the time with which this Inquest is concerned there were in existence guidelines or protocols in relation to the appropriateness or otherwise of administering prostaglandin gel in circumstances that pertained to Ms Brown's pregnancy;
- Whether Ms Brown was furnished with appropriate information and advice in relation to the proposed method of delivery of Aurora and in respect of the administration of prostaglandin gel in order to induce that delivery;

- Whether Ms Brown's labour and caesarean section delivery had been properly managed;
- Whether Aurora's death could and should have been prevented. It can be said at the outset that Aurora's death almost undoubtedly could have been prevented if Ms Brown had undergone an elective caesarean section and not have undergone an induction of labour with or without the administration of prostaglandin gel. The more appropriate question to be answered is whether in all of the circumstances Aurora's death should have been prevented by those means and, as part of that discussion, there is the issue as to whether it was appropriate in all of the circumstances for Ms Brown to have undergone induction of labour.

## 3. Induction of labour – prostaglandin gels

3.1. There is no question but that the decision for Ms Brown to undergo an accelerated delivery of her child was appropriate in all of the circumstances. The choice as to the modality of delivery in those circumstances could be distilled into the question whether or not Ms Brown ought to undergo a caesarean section or undergo an induction of labour with a view to the natural vaginal delivery of her baby. As I understood the evidence, the question of whether Ms Brown should undergo a caesarean section was not prominent either in her thinking or in that of her attending medical practitioners. I find that it was not mentioned to her in any discussion with her medical practitioners. Ms Brown, who gave oral evidence at the Inquest, told the Court that she would not have had any compunction about undergoing an elective caesarean section if it had been considered appropriate in all of the circumstances and if it had been an advised course of action for her to undertake. I accepted her evidence in that regard. I find that Ms Brown had no fundamental objection to undergoing and elective caesarean section had it been considered necessary or desirable in all of the circumstances. An associated question, however, is whether if there had been any perceived risk to her baby or to herself posed by the fact of, or method of, induction and if that perception of risk however small had been conveyed to her, she would have elected for a safer modality of delivery including a caesarean section. This is a more difficult question and requires a measure of hindsight to be brought to bear on its resolution. I will return to that issue in due course.

3.2. There are a number of methods of inducing labour. Some of those methods are dependent upon the position of the unborn child within the uterus and also upon the state of the woman's cervix. In Ms Brown's case the position of the child in the uterus and the state of her cervix meant that in the first instance an artificial rupture of her membranes, thereby inducing labour, would not have been indicated. An induction of labour in her case essentially boiled down to a need to commence the induction process by the administration of prostaglandin gel to prepare the cervix. This proposed course of action appears to have been decided upon several days before the evening of 17 November 2011, which was the evening that Ms Brown presented at the Mount Gambier Hospital for induction of labour. There is no reason to suppose that this method of induction was inappropriate in her case having regard to her clinical circumstances. The question of the previously perforated uterus, though, was another matter that may have required consideration. I leave that issue aside for one moment.

3.3. Prostaglandin gel can have a number of clinical effects. Included among them are the contemplated ripening of the cervix. As well, prostaglandin gel can result in stronger and longer uterine contractions. As explained by Professor Roger Pepperell, an independent expert obstetrician and gynaecologist who was called to give evidence at Inquest, some patients may develop an excessive response even to a minimal 1mg dose of prostaglandin gel, even when used appropriately. For that reason whenever prostaglandins are used to induce labour, a CTG of the baby's heartbeat is routinely utilised following the insertion of the gel. This is done in order to detect whether any excessive response is taking place and whether it any adverse effect on the baby is being experienced. It was said in evidence on more than one occasion during the course of the Inquest that an individual's reaction to the administration of prostaglandin gels on any given occasion is not entirely predictable. Professor Pepperell told the Court, and I accept his evidence, that the risk of uterine rupture is more likely to occur where there has been surgical damage to the uterus such as that sustained in the course of a caesarean section. Professor Pepperell believed that one could extrapolate from this fact that the risk of rupture is enhanced where there has been uterine perforation at the fundus, which had occurred in Ms Brown's case. Whether that risk exists or is an appreciable one in a case such as Ms Brown's was an issue that was debated at the Inquest and a matter that I will discuss. In any event there are a number of guidelines and protocols operative in South Australia that state explicitly that the use of prostaglandin gels in order to induce labour is

contraindicated in a woman who has undergone a previous caesarean section or any uterine surgery[2]. These guidelines do not distinguish between on the one hand a previous classical caesarean section that has involved the upper segment or on the other a lower segment section. It is well understood, however, that there is greater risk of uterine rupture in cases of previous classical upper segment caesarean section. Classic upper segment caesarean sections are nowadays uncommonly performed in any event.

3.4. The well known publication MIMS[3], as it existed at the time with which this Inquest is concerned, included among a list of contraindications for the use of prostaglandin gel (specifically Prostin $E_2$) in the induction of labour '*previous uterine surgery*'. It does not specify what type of previous uterine surgery would be a contraindication, but it would naturally include a caesarean section. The MIMS publication also lists '*uterine rupture*' as a possible adverse consequence of the administration of prostaglandin[4]. The same publication on the same page identifies the contraindications for the drug Syntocinon (oxytocins), the IV administration of which is another measure utilised in the induction of labour and which can also have a marked effect on the stimulation of the uterus and its contractions. Listed among the contraindications to its use are '*uterine scar, previous uterine surgery (incl caesarean)*'. It will be noted that a pre-existing uterine scar, which is one lasting complication of a uterine perforation such as Ms Brown's, is a contraindication for the use of Syntocinon. Some might therefore argue that almost by implication the absence of any reference to a uterine scar within the listed contraindications for prostaglandin might mean that the existence of a uterine scar is not a contraindication for the use of prostaglandins. That paradox was not argued within the confines of my Inquest and so it is not possible to determine whether any such inference can be drawn. Suffice it to say, if a uterine scar is in fact a contra-indication to the use of prostaglandin gel the product information should say so.

3.5. What is clear, however, is that no documentation or medical authority was tendered to the Inquest that suggested in terms that prostaglandin was contraindicated or indeed prohibited where the woman to be induced had experienced a previous uterine perforation that had either required surgical correction or not. It will be remembered

[2] Exhibit C16 South Australian Perinatal Practice Guidelines – 'Induction of Labour Techniques' and Exhibit C21 Australian College of Rural & Remote Medicine – 'Rural Clinical Guidelines' – 'Obstetrics & Women's Health'
[3] Monthly Index of Medical Specialties
[4] Exhibit C14, page 228

that in respect of Ms Brown, her uterine perforation had not required any surgical repair.

3.6. On the other hand, opinions were expressed within the Inquest, including by Dr Olesnicky, the practitioner who had caused the uterine perforation in Ms Brown in the first place, that prostaglandin is totally contraindicated in anyone who has a scar on the uterus[5]. A question arose during the Inquest as to whether Dr Olesnicky's view in this regard was idiosyncratic or an accurate statement of the position. The independent expert, Professor Pepperell, expressed a slightly less stringent view. The medical practitioners actively involved in Ms Brown's management unanimously expressed the view that a previous uterine perforation was not a contra-indication to the use of prostaglandin gel and that they had acted in accordance with that belief.

## 4. <u>The contribution of prostaglandin gel to Ms Brown's uterine rupture and the loss of Aurora</u>

4.1. I have already referred to the fact that Ms Brown was at approximately 38 weeks gestation at the time of her induction of labour. The induction was a scheduled occurrence. Also, as already indicated, there was no indication that Ms Brown would have gone into spontaneous labour on the evening that she presented to the Mount Gambier Hospital. This is an important fact as it supports the contention that, but for what was to transpire after her presentation at the Mount Gambier Hospital, she would not have gone into labour.

4.2. The prostaglandin gels were administered to Ms Brown at approximately 8pm. One milligram of $PGE_2$, which is the minimal dose, was inserted. According to Ms Brown, approximately 20 minutes after the gels were inserted she was already in pain. By approximately 9:20pm there were more frequent than usual contractions. Ms Brown was offered a bath and for a time the CTG monitoring was discontinued. By 10:20am Ms Brown had developed severe abdominal pain that she described as a '*ripping*' sensation[6]. A vaginal examination revealed bleeding from the uterus that to begin with was considered to be possibly the result of a placental abruption. Although between 10:22pm and 10:33pm Ms Brown's uterine contractions were occurring at a greater than ideal rate, the probability was that the baby and the placenta had not been expelled from the uterus by that latter time. Uterine

[5] Transcript, pages 96, 102
[6] Exhibit C7, Volume 2, page 67

contractions ceased at 10:34pm and, at a time subsequent to that, a progressive fall of the foetal heart rate was defined and the heart rate was ultimately found to be undetectable. A decision was made to perform an emergency caesarean section and this took place commencing at 11:30pm. The surgery revealed the uterine rupture. The baby Aurora as well as the placenta were found in the maternal abdominal cavity which also contained frank blood.

4.3. Dr Olesnicky told the Court that the perforation to the uterus that had been caused during the D&C procedure that he had performed in February 2011 was to the fundus of the uterus, which is part of the upper segment of the uterus. Dr Olesnicky gave evidence about the use of prostaglandins. He told the Court that the application of prostaglandin gel can give rise to uncontrolled or hypertonic contractions. It was Dr Olesnicky's belief that Ms Brown had experienced such hypertonic contractions. In his view Ms Brown's contractions had been too frequent and too strong and it was this that had probably caused the dehiscence of her scar[7].

4.4. The surgery that involved both the delivery of Aurora and the subtotal hysterectomy was performed by Dr Kylie Gayford, who at that time was a third year registrar trainee with the Royal Australian and New Zealand College of Obstetricians and Gynaecologists, and Dr Melissa Smith who was a local consultant obstetrician and gynaecologist. Dr Gayford gave evidence in the Inquest. She told the Court that her surgical examination revealed a large irreparable fundal uterine rupture that required a subtotal hysterectomy. Dr Gayford was asked about the aetiology of the uterine rupture. She said that it was possible that it was related to Ms Brown's previous perforation. Dr Gayford was asked to view a report of an ultrasound of Ms Brown's uterus taken on 18 March 2011 which had described what is almost certainly the site of the previously identified uterine rupture. Dr Gayford said that whereas the report indicated an abnormal appearance towards the left of the fundus, she observed clinically a rupture to the whole of the fundus during the surgery. She said the two '*certainly could be related, likely to be related, but I don't know*'. However, she could see no evidence of any explanation for a uterine rupture other than by reason of the previous perforation. Dr Olesnicky told the Court that what was described in the radiological report of 18 March 2011 was consistent with the location of the original perforation[8].

[7] Transcript, page 111
[8] Transcript, page 132

4.5. The ultrasound report to which I have referred revealed that at the time it was taken the healing process in respect of the perforation was not complete. No further imagery specifically designed to ascertain the progress of the healing of the perforation was obtained before Aurora's delivery.

4.6. Dr Lucie Walters was the medical practitioner who applied the prostaglandin gel to Ms Brown. In her oral evidence before the Court she was asked about her view of what had taken place in respect of Ms Brown's ruptured uterus. She accepted that there might be a connection between the original uterine perforation and the rupture that Ms Brown experienced during labour. She regarded it as a plausible explanation, but said that one could not define an event categorically as being causative just because it precedes a certain outcome. When pressed as to whether there was any other competing explanation, Dr Walters offered that Ms Brown may have been more sensitive to the prostaglandin on this occasion than she had been in previous labours, that, unlike previous occasions, this had caused a hypertonic uterus and that a hypertonic uterus can give rise to a uterine rupture. There is no question here in this case that Ms Brown did proceed to a hypertonic uterus characterised by frequent and strong contractions. At one point Dr Walters endeavoured to remove what prostaglandin gel was remaining around the vagina and cervix in an attempt to ameliorate its effect. Dr Walters added that the fact that the uterus was contracting frequently and strongly not long after the prostaglandin gels were administered had significance in that it was very suggestive that the uterus had immediately responded to the prostaglandin and within a short period of time had gone from a state where it was not contracting to a state where it was contracting quite frequently. There was hyperstimulation at that point which can certainly lead to hypertonia.

4.7. Professor Pepperell told the Court that he agreed with the pathologist's description of the cause of death. He also opined that Ms Brown's previous uterine perforation was almost certainly the cause of her uterine rupture during her labour with Aurora[9]. In his report[10] Professor Pepperell expresses the view that the excessive contraction frequency was due to an excessive effect of the prostaglandin despite the appropriate dose being given. I accept all of that evidence.

[9] Transcript, page 498
[10] Exhibit C24, page 8

4.8. I have found on the balance of probabilities that it was the administration of the prostaglandin gel that in and of itself gave rise to Ms Brown entering into effective labour. On the balance of probabilities I have found that the prostaglandin gel led to hyperstimulation of the uterus and then hypertonia. I have further found on the balance of probabilities that this caused a uterine rupture at the site of the previous uterine perforation. I have also found on the balance of probabilities that the uterine rupture would not have occurred but for the existence of the previous uterine perforation.

## 5. The evidence of Dr Olesnicky

5.1. As already indicated, Dr Olesnicky was the obstetrician and gynaecologist who performed Ms Brown's termination in late 2010. He was also the medical practitioner who in February 2011 performed the D&C in which Ms Brown's uterus was perforated.

5.2. Dr Olesnicky received his basic medical qualification from Adelaide University in 1971. He obtained membership of the Royal College of Obstetrics and Gynaecologists in 1982 and a Fellowship of the Australian College of Obstetrics and Gynaecologists in 1984. He received a Doctorate of Medicine from the Melbourne University in 1986. He also received a Fellowship of the Royal College of Obstetrics and Gynaecologists in 1996. He was a staff specialist at The Queen Elizabeth Hospital for two years following which he entered into private practice, with a visiting medical appointment at that same hospital. From 2004 to 30 June 2011 he practised as an obstetrician and gynaecologist in Mount Gambier.

5.3. Dr Olesnicky described the perforation as being a small hole in the fundus of Ms Brown's uterus. There was no active bleeding, so on laparoscopy he left the perforation alone, expecting it to heal over time. Dr Olesnicky believed that the perforation had been caused by the curette. He agreed with counsel, Mr Harris QC, that the size of the perforation was probably about the size of the tip of a biro[11]. He said elsewhere in his evidence that the hole was probably about 8mm[12].

[11] Transcript, page 104
[12] Transcript, page 108

5.4. Dr Olesnicky told the Court that he could not recall any work undertaken in an endeavour to quantify scarring against future risk of rupture[13].

5.5. In March 2011 Dr Olesnicky arranged for a pelvic ultrasound of Ms Brown. The ultrasound report dated 18 March 2011[14] reported that there was no evidence of retained products of pregnancy, but reported that there was an abnormal appearance of the uterus in the fundus on the left with what appeared to be '*thinning / scarring of the myometrium with the endometrium extending close to the serosal surface*'. The report suggested that a correlation of this feature with Ms Brown's previous surgery be considered. In his oral evidence Dr Olesnicky was questioned about the significance of this report. He told the Court that he had presumed that the report reflected the healing process of the perforation that had been caused during the D&C procedure. In this regard Dr Olesnicky referred to the fact that further scans during the early stages of Ms Brown's pregnancy did not report any abnormalities, although it has to be acknowledged that the state of the myometrium was not the specific reason for those scans being conducted. To my mind nothing can be inferred from those subsequent scans in terms of the satisfactory healing or otherwise of the perforation. In cross-examination by Mr Harris QC, Dr Olesnicky told the Court that although following the perforation there would be a period of time during which the myometrium would be thinner than it otherwise would have been, the expectation was that it would eventually resume its full thickness[15]. However, he disagreed with counsel's suggestion that there would be an expectation with a minor perforation such as this that it would heal and return to the uterus' former strength[16]. He said that one would still develop a scar and that the scar that could give way and tear upon expansion.

5.6. Dr Olesnicky told the Court that Ms Brown was certainly aware of the fact that there had been a perforation of her uterus. In addition, he caused the discharge summary detailing the outcome of Ms Brown's procedure to be sent to the Hawkins Medical Clinic in Mount Gambier on 17 February 2011. This discharge summary had read:

> 'Admitted for evacuation of retained products of conception. Procedure complicated by perforated uterus so laparoscopy performed. No bowel damage noted or active haemorrhage. Stayed overnight for observation and discharged next day.'

The radiology report of 18 March 2011 was not sent to the Hawkins Medical Clinic.

[13] Transcript, page 108
[14] Exhibit C9, page 12
[15] Transcript, page 116
[16] Transcript, page 107

5.7. Dr Olesnicky did not have any further consultation with Ms Brown after the scan of 18 March 2011. He was not consulted at any stage about Ms Brown's pregnancy, nor in respect of her delivery. He had left Mount Gambier in mid 2011, but I did not understand that he would have remained uncontactable thereafter. As well, he left his clinical records with another local obstetrician and gynaecologist, Dr Weatherill.

5.8. Dr Olesnicky gave certain evidence about what in his view had been the potential implications of Ms Brown's uterine perforation. He told the Court that a perforation, or anything like it, that leaves a scar on the uterus might affect the way that a delivery of a baby occurs in the future[17]. He said that a scar is a weak spot on the uterus similar to that which results from caesarean section or uterine surgery in general[18]. He said that although in a future delivery there was '*a small chance it might rupture or dehiscence*', the fact that a woman has a scar on her uterus has to be taken into account when a decision is made as to the method of delivery. He suggested that in all of Ms Brown's circumstances, she should have had a caesarean section[19]. She had an unfavourable cervix and the baby's head position was also unfavourable. This would mean, in his view, that induction by way of an amniotomy, otherwise known as the breaking of the waters, was not indicated. As well, prostaglandin in his view was '*totally contraindicated in anyone whose* (sic) *got a scar on the uterus*'[20]. Dr Olesnicky in this regard pointed out that the MIMS publication suggested that the use of prostaglandin gels was totally contraindicated in people with a uterine scar. It will be seen from previously, however, that MIMS did not expressly state that. What it did indicate was that prostaglandin is contraindicated where there had been *'previous uterine surgery'*. I have already referred to the fact that Syntocinon, on the other hand, is suggested in MIMS to be contraindicated where there is a uterine scar as well as with previous uterine surgery. When it was pointed out to Dr Olesnicky that the MIMS entry in relation to prostaglandin simply referred to a contraindication in terms of previous uterine surgery, he said that this description would include perforation of the uterus. He said that such surgery was in fact synonymous with uterine scarring such that prostaglandin gels was contraindicated in terms of the MIMS publication[21]. Mr Harris QC challenged Dr Olesnicky in respect of the suggestion that a scar to the fundus could have similar consequences as the surgical scar involved in a classical

[17] Transcript, page 94
[18] Transcript, page 94
[19] Transcript, page 95
[20] Transcript, page 96
[21] Transcript, page 122

caesarean section. Dr Olesnicky suggested that a scar is a weak point in the uterus regardless of how big or how hard it is as once it '*starts to give, the tissue around it can also give*'[22]. As to the significance of any risk posed by a perforation scar and the administration of prostaglandin gels, Dr Olesnicky suggested that the chances were that if one were to give prostaglandin gels, one would '*get away with it*'[23]. He put it colourfully in this way:

> 'If you're brave enough to give her the prostaglandin gel when it is contraindicated that's fine.' [24]

In essence, Dr Olesnicky expressed a firm opinion that prostaglandin gels should not be administered where there is any scar on the uterus, however caused[25].

5.9. In his witness statement Dr Olesnicky stated that in his view following a perforation of the uterus there is no period of time over which a woman needs to wait before she falls pregnant again[26]. In that same statement he said he did not recall providing any advice to Ms Brown about that issue. In his oral evidence before the Court he also said that he did not recall having any such discussion with Ms Brown, but that his view was that in order to allow healing to take place, further pregnancy should not occur for about six weeks after a perforation. For Ms Brown's part, she told the Court that following the perforation she asked Dr Olesnicky whether she would be able to have more babies, to which Dr Olesnicky had said to her words to the effect that she should go and start a family and be happy with her current partner[27]. She believed that she was in effect '*fine to go*'[28]. As seen, Ms Brown was pregnant by April 2011. At Inquest, it was common ground between Ms Brown and Dr Olesnicky that she was not given any advice by him about future methods of delivery and what implications, if any, her perforated uterus might carry in that regard. Mr Harris QC asked the obvious question of Dr Olesnicky as to why, if he held such strong negative views about the use of prostaglandins where the woman bears a uterine scar, he did not pass on his concerns in that regard in respect of Ms Brown. He responded by saying that such matters were the responsibility of the treating obstetricians at the time of delivery[29].

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[22] Transcript, page 106
[23] Transcript, page 111
[24] Transcript, page 111
[25] Transcript, page 111
[26] Exhibit C13, page 3
[27] Transcript, page 24
[28] Transcript, page 24
[29] Transcript, page 114

## 6. The evidence of Drs Zwijnenburg, Dunn and Walters

6.1. It is convenient to deal with the evidence of these medical practitioners together. Each of the three practitioners were general practitioners with advanced qualifications in obstetrics. They are not qualified consultant obstetricians and gynaecologists.

6.2. Each of the three medical practitioners had an involvement in Ms Brown's pregnancy and presentation at the time of her approaching confinement. Dr Zwijnenburg of the Hawkins Clinic saw Ms Brown on a number of occasions during the course of Ms Brown's pregnancy. Dr Zwijnenburg told the Court that she did not become aware of the uterine perforation until a visit on 15 September 2011 when Ms Brown was 28 weeks pregnant. On that occasion Ms Brown complained of sharp pains in her right inferior fossa when the baby moved. Dr Zwijnenburg accessed the discharge summary in respect of the D&C procedure. However, she did not see the subsequent ultrasound from March 2011. Dr Zwijnenburg told the Court that she concluded from the discharge summary that Ms Brown's uterine perforation had not required surgical repair, say with sutures. This conclusion was correct. She further concluded that the uterine perforation must have been small and therefore not likely to be significant in respect of an ongoing pregnancy and delivery. She also concluded that the uterus would have fully healed. Dr Zwijnenburg told the Court that she had asked Ms Brown as to whether Dr Olesnicky had said anything to her about the perforation having any effect on future pregnancies and that Ms Brown had been very adamant that there had been none to be concerned about. Ms Brown told her that Dr Olesnicky had said that '*she'd be good to go for another pregnancy*'[30]. It will be remembered that this in essence was the advice that Ms Brown believes she had been given by Dr Olesnicky.

6.3. Dr Zwijnenburg did not believe the uterine perforation had constituted any contraindication either to vaginal delivery per se, or with vaginal delivery assisted by the application of prostaglandin gel for an unfavourable cervix[31]. Dr Zwijnenburg indicated that her understanding was that the scar would have been so minimal that it would not have had any implications on pregnancy or delivery.

[30] Transcript, page 173
[31] Transcript, page 176

6.4. Dr Zwijnenburg could not recall any discussion she had with Ms Brown as to whether or not the perforation posed any risk for her in respect of her pregnancy[32]. She said:

> 'I don't think it's appropriate to counsel women in all risks even if they're minutely small, because first of all it would not leave any room for clinical care and the second thing is that it can only create more anxiety.' [33]

6.5. Dr Zwijnenburg considered that Ms Brown's pain could be explained by abdominal adhesions. Ms Brown continued to complain about such pain when she saw Dr Zwijnenburg again on 2 November 2011. There is no evidence that Ms Brown's pain needed to be clinically assigned to her previous uterine perforation.

6.6. Dr Zwijnenburg again saw Ms Brown on 7 November 2011. By this time Ms Brown's blood pressure had become an issue and the need to consider induction to prevent possible complications of pre-eclampsia needed to be considered. Dr Zwijnenburg did not believe that an elective caesarean section was indicated. She did not believe that it would be inappropriate to induce Ms Brown with cervix ripening agents[34]. This would include prostaglandin.

6.7. Dr Zwijnenburg was asked about the March 2011 ultrasound that Dr Olesnicky had arranged and had seen the report in respect of, but which Dr Zwijnenburg had not. She said that she would have had an expectation that if there had been any significant ultrasound brought into existence she or the patient would have been informed[35].

6.8. Dr Zwijnenburg said that she did not think that she had turned her mind to the fact that Ms Brown had become pregnant so quickly after the insult to her uterus. She said that when she questioned Ms Brown about that issue she said that she had the '*green light*' and that it was '*all good to go*'. Such a statement would be consistent with Ms Brown's admitted state of mind at that time and also consistent with the advice that she says she obtained from Dr Olesnicky.

6.9. In cross-examination by Ms Cacas, counsel assisting, Dr Zwijnenburg stated that she had never heard of any prohibition, either from any consultant obstetrician or through literature, that one should not use prostaglandin gel in connection with the induction of childbirth where there has been a perforation of the fundus of the uterus. In

[32] Transcript, page 179
[33] Transcript, page 179
[34] Transcript, page 184
[35] Transcript, page 174

addition, Dr Zwijnenburg's research since these events had not revealed any further relevant information.

6.10. Dr Zwijnenburg would not be involved in the birth of Aurora as she proceeded on leave prior to that event. Thereafter Ms Brown would be seen on the one occasion on 14 November 2011 by one of Dr Zwijnenburg's Hawkins Clinic colleagues, Dr Stephen Dunn.

6.11. Dr Dunn is an experienced general practitioner who has practised in Mount Gambier since 1981 with a 5 year interruption when he practised overseas. Dr Dunn has a Diploma in Obstetrics from the Royal Australian and New Zealand College of Obstetricians and Gynaecologists. Dr Dunn gave evidence in the Inquest and told the Court that he had been performing obstetrics work in Mount Gambier in excess of 30 years. He has delivered somewhere between 1500 and 2000 babies. As indicated, he saw Ms Brown on 14 November 2011. Dr Dunn made a record of his consultation of that day. He noted that he was seeing Ms Brown in relation to preparation for query induction of labour due to increased blood pressure. He performed a vaginal examination and concluded that induction of labour by way of rupture of the membranes was not technically possible due to the position of the head and the inaccessibility of the cervix. He took a swab for Group B streptococcus analysis. He also took repeat bloods in order to assess the potential impact that raised blood pressure might have in respect of complications such as stroke, pre-eclampsia or eclampsia. He made a tentative appointment for Ms Brown's induction of labour at the Mount Gambier Hospital to take place the following Thursday, 17 November 2011 at 7pm which was in three days time. Dr Dunn explained in his evidence that the appointment was tentative pending satisfactory analysis of the blood tests. The page upon which Dr Dunn made notes of his own examination, which forms part of the Mount Gambier Hospital record[36], suggests that Ms Brown's actual estimated final due date was 2 December 2011. On another page of the Mount Gambier Hospital record, which describes Ms Brown's pregnancy record among other things, Dr Dunn noted as against an already existing note relating to Ms Brown's most recent termination of pregnancy, the following:

> 'Uterine perforation with subsequent curettage settled conservatively.' [37]

[36] Exhibit C7, page 54
[37] Exhibit C7

Dr Dunn told the Court that he believed that he had originally received this information in a handover from Dr Zwijnenburg and that he would have asked Ms Brown about it during the course of his own antenatal consultation. Dr Zwijnenburg had also previously noted that Ms Brown possibly had adhesions from her uterine perforation after her last D&C.

6.12. Dr Dunn explained the timing of Ms Brown's appointment for induction at the Mount Gambier Hospital. The explanation was that the expected method of induction would be the use of prostaglandin gels and it was expected that they would work gently overnight with the aim of conducting the labour during the daylight hours of the following day. His expectation was that the ripening process caused by the application of the gel would be a gradual one. When he made the appointment for Ms Brown, doing so in the expectation that her induction of labour would be facilitated by way of cervical ripening using prostaglandin gels, he also knew that Ms Brown had experienced a prior uterine perforation in connection with the previous termination. In this regard Dr Dunn told the Court that he had no belief at that time, nor at the time of the Inquest, that the induction of labour with prostaglandin gel in a woman who had experienced a perforation of her uterus was absolutely prohibited[38]. Dr Dunn explained that through conversation with Ms Brown herself his belief had been that the perforation had been managed conservatively in accordance with his own notation, that is to say that there had not been any necessity for surgical repair of the perforation[39]. Thus Dr Dunn appears to have made an assumption at the time that the perforation had represented a very minor wound which would heal itself satisfactorily and would therefore not having any subsequent bearing on later pregnancy events[40]. In respect of the materials that suggested that previous uterine surgery, including caesarean section, were contraindications for cervical ripening with prostaglandins, Dr Dunn told the Court that he would not have regarded a perforation of the uterus at D&C to constitute uterine surgery[41]. In any event he did not regard Ms Brown as a person who had a history of previous uterine surgery. Dr Dunn said that literature about risks relating to uterine perforation and subsequent labour was difficult to locate. I pause here to observe that none was produced at the Inquest.

[38] Transcript, page 290
[39] Transcript, pages 290-291
[40] Transcript, page 292
[41] Transcript, page 293

6.13. Dr Dunn acknowledged that he made no further inquiry nor conducted any further investigation in order to obtain more information about the implications of a previous uterine perforation. In this regard Dr Dunn said that he had an expectation in a case such as Ms Brown's that along the chain of clinical events since her perforation and in respect of those in connection with her current pregnancy, and having regard to the fact that Dr Dunn was seeing the patient at 37½ weeks gestation, that any relevant information from a treating specialist would have been transferred to Ms Brown's general practice in the usual way[42].

6.14. In his evidence before the Court I posed to Dr Dunn that the risk of uterine rupture after a previous fundal perforation cannot be known with certainty. Dr Dunn agreed that this proposition was correct because the size of the perforation can vary. When asked whether by virtue of that uncertainty there would be a natural reluctance to perform an induction by way of prostaglandin gel, Dr Dunn disagreed because he believes it was reasonable to assume that a perforation is often a minor, if not trivial, wound that heals well[43]. He did not regard these circumstances in a practical sense as giving rise to an increased risk to rupture[44].

6.15. Dr Dunn stated in his evidence that in determining risk they did not take into account the interval between the insult to the uterus and the delivery of the woman's baby notwithstanding that there are guidelines suggesting that significant intervals are called for when vaginal birth after caesarean section is contemplated.

6.16. Dr Dunn said that he also disagreed with Professor Pepperell's extrapolation that the same degree of risk or incidence of rupture could be expected in respect of a perforation as with an upper segment caesarean section. Dr Dunn made the point that he did not think that a wound which might be half a centimetre across, such as one that might result from a uterine perforation, automatically carried the same degree of risk of subsequent rupture as a wound that might be 15cm across[45].

6.17. In cross-examination Dr Dunn accepted that even a perforation that is treated conservatively will leave some scarring, but added that the question was whether the scarring would lead to any functional weakness[46]. Dr Dunn's understanding at the

[42] Transcript, page 297
[43] Transcript, page 310
[44] Transcript, page 313
[45] Transcript, page 317
[46] Transcript, page 333

time was that it would likely have been a scar of small dimensions, that is to say the dimension of the instrument used, and that the healing would be complete with no functional impairment. He suggested that scarring can be just as strong as the original tissue[47].

6.18. Dr Dunn was also cross examined as to whether any risk associated with Ms Brown's previous uterine perforation should have been explained to her. In this regard Dr Dunn made a general comment to the effect that medical practitioners do not '*bombard people right at the start with a long list of common or rare potential outcomes*'[48]. In any event he said that he was entitled to assume that discussion about possible adverse effects of the induction process would have taken place prior to his involvement[49]. In cross-examination by counsel assisting, Dr Dunn's attention was drawn to the South Australian Perinatal Practice Guidelines for the induction of labour techniques where it is stated that an induction of labour should only follow informed consent by the woman and that the potential risks of induction, among other things, should be explained to her[50]. To this Dr Dunn suggested that the person who made the initial decision that labour be induced would be expected to have that discussion and in this case that would have been Dr Zwijnenburg. Dr Dunn acknowledged that he did not ask Ms Brown whether Dr Zwijnenburg had discussed any risks that might be posed by the induction[51]. He also suggested that the person who was to actually administer the induction process would also have some obligation in that regard[52]. In any event Dr Dunn suggested that any discussion concerning risk would more likely have centred on the risks of not inducing labour as compared to those involved in inducing labour. In any event he also suggested that the use of prostaglandin gel was a commonly practised and low risk procedure and that they would not normally during the course of an antenatal consult spend a long time discussing the theoretical pros and cons or the theoretical risk associated with that particular method of induction. As to the fact that this procedure in Ms Brown's case contained the added complication of a previous perforation, Dr Dunn responded by saying that Ms Brown knew of the perforation and that in any case his understanding at the time as shared by his colleagues was that the proposed course of action was

[47] Transcript, page 333
[48] Transcript, page 337
[49] Transcript, page 338
[50] Exhibit C16, page 2
[51] Transcript, page 342
[52] Transcript, page 342

reasonable and that there was no indication from Ms Brown that there was a different perception of risk. When challenged as to whether Ms Brown herself could seriously be considered as having some personal responsibility to fully inform herself as to the risk associated with perforation and the use of gels, Dr Dunn responded by saying that Ms Brown had seen a specialist and that he would have expected that had the events at the hands of the specialist carried any substantial risk, she would have been aware of them and that she would readily transmit them to him and his colleagues.

6.19. To my mind Dr Dunn's evidence can be succinctly summarised by saying that he did not believe that the previous perforation carried any significant risk in an induction procedure that would be stimulated by the use of prostaglandin gels and that it was not a risk that needed to be explained to the patient.

6.20. Dr Lucie Walters is an Associate Professor in Rural Medicine Education at the Flinders Medical Centre. As part of her role at Flinders University she teaches general practice obstetrics, gynaecology and paediatrics to medical students. She, together with other colleagues including Dr Dunn, has developed a clinical training course known as Rural Obstetric Emergency Training for members of the Australian College of Rural and Remote Medicine. At the time of giving evidence she was a Vice President Elect of that College. Dr Walters received her primary medical degree in 1989. She underwent training in England and obtained Diplomas in Paediatrics and Obstetrics at Birmingham in England. She has practised at the Hawkins Medical Clinic in Mount Gambier, eventually becoming a partner in the practice for a period of about 10 years until 2002. At that time she became a fulltime employee at Flinders University. Although a fulltime employee with that University, Dr Walters still resided in Mount Gambier at the time with which this Inquest is concerned. She has had a clinical role at the Mount Gambier Hospital. In 1996 she and a number of other doctors in Mount Gambier with obstetric qualifications formed a group whereby 24 hour cover would be provided to the Mount Gambier Hospital.

6.21. Dr Walters was the general practitioner who managed Ms Brown's induction and was the practitioner who administered the prostaglandin gels. Following her involvement Dr Walters prepared typewritten retrospective notes in relation to these events[53]. The retrospective notes made by Dr Walters state in effect that she was fully aware of the

[53] Exhibit C7, pages 73-76

previous uterine perforation in respect of Ms Brown's most recent termination of pregnancy. The note states:

> 'I did not seek out further information regarding the uterine perforation as this is a common and usually minor complication of evacuation of retained products and I did not at the time think this was relevant to the current induction of labour.' [54]

6.22. Dr Walters who gave oral evidence told the Court that she probably would have seen the final separation summary in relation to the D&C procedure that had taken place on 14 February 2011. Although she had no independent recollection of sighting it at the time, she said that she would have checked the Group B streptococcus status of Ms Brown and have seen the separation summary as part of that investigation. If Dr Walters had seen the separation summary it would have informed her that a laparoscopy had been performed and that no bowel damage or active haemorrhage had been noted. From this she believes she might have inferred that it was not a significant injury and one which had not required suturing[55].

6.23. That Dr Walters was aware of the previous uterine perforation in my opinion cannot be questioned. The statement of witness of Jennifer Estelle Aston[56] who was a registered nurse midwife on duty at the Mount Gambier Hospital on the evening in question states that before the gels were applied she herself mentioned to Dr Walters that Ms Brown had a previously perforated uterus. She mentioned this to Dr Walters because the information was contained in the pre-admission obstetric record. It is worthwhile observing that Ms Aston, who has practised as a registered nurse and registered midwife over various periods since 1972 and has occupied the position of Head of Nursing in Community Health, and who has a Bachelor of Health Administration from the University of New South Wales, states that at the time with which this Inquest is concerned she was not aware that there was any increased risk involved in the use of prostaglandin gels where there has been a previous perforation of the uterus[57]. Thus she had no discussion with Dr Walters about the question of risk, although she makes it plain in her statement that she left any decisions about the method of induction to the medical practitioner. On the other hand, another nurse who commenced duty at a time after the prostaglandin gels had been administered to Ms Brown, namely Ms Kristal Heading a registered nurse and midwife of many years

[54] Exhibit C7, page 73
[55] Transcript, page 369
[56] Exhibit C25
[57] Exhibit C25, paragraph 17

experience, told the Court that she believed that it is contraindicated to induce a woman with a previous perforated uterus[58]. She said that this had always been her understanding and it was part of her training as a midwife. She said:

> 'No, I'm aware of that people with, women who have had previous injury to their uterus such as perforation or caesarean shouldn't be induced with prostaglandins.' [59]

She added her belief was that in such circumstances induction is not undertaken often, if at all, with prostaglandin. She said it is not recommended. I was not entirely certain that Nurse Heading had always been of that view or whether her view is coloured by the events in question here. For instance, she did not draw any inference that Ms Brown's difficulties that evening were the result of a uterine rupture. Rather, she appears to have shared the view that Ms Brown was experiencing a placental abruption.

6.24. In any event it is clear that Dr Walters knew of the perforation at the time she administered the prostaglandin gels. There was some discussion during the Inquest as to the extent of Dr Walters' knowledge about the nature of the previous perforation and in particular whether she had understood that it was a perforation that had not required suturing or other surgical intervention for its correction. This debate was somewhat arid in that regardless of what Dr Walters understood, the fact of the matter was that Ms Brown's perforation had been a small one and had not required surgical correction.

6.25. Dr Walters testified that she did not believe there was any prohibition on inducing labour by the application of prostaglandin gels in a patient who had a uterine perforation of the type under discussion[60]. Dr Walters still maintains that belief. She regarded a perforation of that type as posing only a '*small and indefinable increase in potential risk*'[61]. Dr Walters also gave evidence that she would not have characterised a perforation where no form of surgical suturing was required as '*uterine surgery*' as described within the guidelines[62]. As to the question of residual scarring following perforation, Dr Walters stated that there is a period of time before scarring achieves its greatest strength and that is around six weeks. Prior to the expiry of that period

[58] Transcript, page 262
[59] Transcript, page 264
[60] Transcript, page 370
[61] Transcript, page 371
[62] Transcript, page 374

scars tend to be less strong than they will ultimately be, but once scars form they may or may not be stronger or weaker than the tissue was before. She acknowledged also that a scar would be placed under pressure more at the time the uterus was contracting than when it was relaxed and so one could certainly say that the whole uterus, scarred and unscarred area, would be under more pressure when the uterus was hypertonic than it would be under normal contraction.

6.26. Ms Cacas, counsel assisting, questioned Dr Walters about the need for a woman in Ms Brown's situation to be informed as to potential risks. She referred Dr Walters to the South Australian Perinatal Practice Guidelines that I have already referred to, which suggest that there is a need to explain the potential risks involved in induction of labour, which should only follow informed consent by the woman. To this Dr Walters stated that at the time she did not believe that perforation was a potential risk. She added that even with the hindsight that this case now produces, she does not believe that there is any evidence that a perforation that requires no suturing is actually a risk factor for induction of labour with prostaglandin. As to the short time between the perforation and Ms Brown becoming pregnant again, Dr Walters acknowledged that she did not have an appreciation of the small magnitude of that period, but said that she believed that time was a matter that one would consider in a vaginal birth after a caesarean section. She did not think that a perforation was of significance in this regard[63]. Like Dr Dunn, Dr Walters did not believe that there was any documentation or literature that specifically suggested that a perforation such as this posed an increased risk[64]. She said that it did not cross her mind to consult with an on-call obstetric registrar or an obstetric consultant about the question of risk because she was confident that there was no risk factor involved[65].

6.27. Dr Walters disagreed with Professor Pepperell's extrapolation relating to the risk posed by an upper segment caesarean section scar. She said that she found that very difficult to believe[66] and has not found any evidence in the literature that would suggest such a frequency.

[63] Transcript, page 412
[64] Transcript, page 413
[65] Transcript, page 414
[66] Transcript, page 421

## 7. The evidence of Dr Gayford

7.1. I have already referred to Dr Gayford. She was the obstetric registrar who, with the obstetrician Dr Smith, was involved in the emergency caesarean section surgery and Ms Brown's subtotal hysterectomy.

7.2. As well as describing the surgery, Dr Gayford gave evidence of a conversation about Ms Brown that she had with Dr Dunn earlier in the evening. This conversation had occurred in the setting of a routine perinatal meeting at the Mount Gambier Hospital that involved local practitioners. She told the Court that Dr Dunn had indicated to her that there was a young lady, undoubtedly Ms Brown, who had experienced two previous normal births, who was pregnant and who was developing gestational hypertension. He wanted to know whether she agreed with induction of labour for a woman in that situation. Dr Gayford told the Court that Dr Dunn did not mention anything about the woman having suffered a previous perforation of the uterus[67]. I understood that Dr Gayford had not disagreed with the proposed course. Dr Dunn, in his evidence, could not recall this conversation, but accepted that it may have occurred. He added that if such a conversation had taken place it is likely that he would have mentioned the previous perforation of the uterus. I am not certain that Dr Dunn would have mentioned the previous perforation to Dr Gayford, but to the extent that there is a suggestion that he may have, it is difficult to regard Dr Gayford as being a completely independent witness not necessarily interested in the outcome of these proceedings. That said, she did give evidence apparently in an impartial manner to the effect that, like the three general practitioners to whom I have referred, she did not consider a perforation of the uterus that did not require surgical repair to fall within the description of '*uterine surgery*' for the purposes of the documented contraindications to the use of prostaglandin gels as set out in the guidelines. Dr Gayford did say that she had never used prostaglandin gels to induce labour in a woman who had a previously perforated uterus[68]. However, she added that if it came to her for a decision as to whether it would be appropriate to administer gels in a woman who had suffered a previous perforation, that she would never make that decision alone and would discuss the issue with a senior colleague[69]. She agreed that at that time a source of senior opinion would have been available in Mt Gambier in

[67] Transcript, page 431
[68] Transcript, page 441
[69] Transcript, page 443

the form of Dr Smith to whom I have already referred and in Dr Weatherill who was also a local consultant obstetrician. In cross-examination by Ms Cacas, counsel assisting, Dr Gayford stated what other doctors had stated, namely that there is not a great deal of evidence to guide management in this situation. She acknowledged that prostaglandin gels would increase the risk, but that at that time she had no good idea as to the extent of the enhancement of risk. She did state also that if Dr Dunn had mentioned Ms Brown's previous perforation she would have needed to have had a closer look at the particular case and to have discussed the issue with a senior colleague[70]. She would not have been unable to give Dr Dunn an off-the-cuff opinion. She also said that in her view it would have been appropriate to consult Ms Brown herself about the matter[71], the reason being that it was Ms Brown's labour after all. In addition, essentially it was Ms Brown's decision as to the medical care that she undertook, and that where there is '*clinical equipoise*', often the patient's opinion is highly sought when making clinical decisions[72], the decision in question here being whether the patient would proceed with the suggested induction of labour as against proceeding with an elective caesarean section. Dr Gayford did imply that the discussion with the patient about risk would be difficult in a case such as this because there was not much good quality evidence to guide the decision. I return to that issue later when discussing Ms Brown's evidence about what she may or may not have decided had she been informed about risk.

## 8. <u>The evidence of Professor Roger Pepperell</u>

8.1. Professor Pepperell is a retired Professor of Obstetrics and Gynaecology. He was a Specialist in Obstetrics and Gynaecology at the Royal Women's Hospital in Melbourne. He is a Fellow of the Royal Australian College of Physicians, a Fellow of the Royal College of Obstetricians and Gynaecologists and a Fellow of the Royal Australian and New Zealand College of Obstetricians and Gynaecologists. He has been a Professor at the Melbourne University from 1997 until 2009 when he took up a position as Professor of Obstetrics and Gynaecology in the Penang Medical College in Malaysia. Professor Pepperell continues to perform clinical work, teaching and examining in obstetrics and gynaecology in Melbourne. He currently examines for the Australian Medical Council. Professor Pepperell had no involvement in Ms

[70] Transcript, page 450
[71] Transcript, page 452
[72] Transcript, page 452

Brown's clinical management. He provided a written report[73] in relation to his assessment of Aurora's management and he gave oral evidence in the Inquest.

8.2. In his written report Professor Pepperell quoted statistics in relation to the incidence of uterine rupture. His report indicates that uterine rupture occurring in a woman who is attempting a vaginal delivery after a previous lower uterine segment caesarean section (LUSCS) is about 0.5% - 1%, but is increased further if labour is induced, particularly if prostaglandin preparations or a Syntocinon infusion is used during the induction process, or where the next delivery occurs less than 18 months after the previous LUSCS. On the other hand where a previous classical caesarean section has been performed, involving an upper segment uterine incision which does not heal as well as a LUSCS incision, the risk of uterine rupture during the pregnancy and in labour is increased and is generally accepted to be between 5% and 10%. Professor Pepperell's report then extrapolates those figures to embrace a situation where a surgical or other insult has been inflicted into the upper part of the uterus including the fundus, either by way of surgical removal of a uterine fibroid or other uterine operative procedure. He goes on to suggest that the same incidence of rupture would also be expected to apply to previous uterine perforation at the uterine fundus. In other words, the report suggests that the incidence of uterine rupture where there has been a perforation of the uterine fundus, and where the method of delivery involves induction by way of prostaglandin gels, is between 5% and 10%. That is an appreciable risk, and I do not believe any person represented at the Inquest suggested otherwise. It is for that reason, as the evidence displayed, that induction by way of use of prostaglandin gels where there had been a previous classical caesarean section is contraindicated. Indeed, and in any event, classical caesarean sections are rarely performed in current times.

8.3. During the course of this Inquest I did not see any literature that deals specifically with the risk of uterine rupture, or the incidence of it, in cases involving induction of labour with the use of prostaglandin gel in a woman who has had a previous uterine fundus perforation that has not required surgical correction. The only document that was produced at the Inquest that suggests that the existence of a uterine scar, not associated with previous uterine surgery as such, is a contraindication in the case of induction of labour, is the MIMS publication in respect of the use of Syntocinon.

[73] Exhibit C24

8.4. Professor Pepperell's report goes on to state that patients need to be informed of the risks that his report has identified, and which I have set out above, who would then, in the light of that information, need to decide on the mode of delivery in respect of a subsequent pregnancy.

8.5. Professor Pepperell's report also states that it is well known that the uterine response to vaginally administered prostaglandin gel cannot be predicted absolutely, with some patients having an excessive response which can cause foetal hypoxia and which increases the risk of uterine rupture. Because of these difficulties, even when induction of labour is indicated on obstetric grounds, many obstetricians would not use prostaglandin when a previous uterine scar is known to be present. He states:

> 'Because of all of these facts, informed consent for an attempt at a vaginal delivery after a previous operative procedure has caused uterine damage, needs to have these facts explained and then the decision made by the patient concerning the mode of delivery desired and accepted.' [74]

8.6. Professor Pepperell's report recites the history of Ms Brown's confinement. He suggests that it would have been advisable for Dr Olesnicky to have been contacted and, in particular, for him to have been asked for advice as to whether the induction that was planned was appropriate. The clear conclusion that I draw from Dr Olesnicky's own evidence is that he would have advised strongly against it and have advised delivery by way of a caesarean section.

8.7. As to the administration of prostaglandin in Ms Brown's case, Professor Pepperell stated that the dose of 1mg that was given '*is the common dose used initially when a patient has had previous deliveries, or when a uterine scar is known to be present*'[75]. This comment suggested to me that Professor Pepperell did not at the time of compiling his report hold the view that prostaglandin in that small dosage is completely contraindicated where a uterine scar is known to be present. I will deal with Professor Pepperell's views as expressed in his oral evidence in a moment.

8.8. Professor Pepperell's report also contains an analysis of the arrangements that were made when Ms Brown's condition significantly deteriorated and the efforts that were made to arrange for an emergency caesarean section. I deal with that issue in a separate section.

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[74] Exhibit C24, page 5
[75] Exhibit C24, page 7

8.9. Professor Pepperell's report concludes by stating that Aurora's death was preventable in that she would have been born alive and in good condition had she been delivered by elective caesarean section rather than Ms Brown's labour being induced. He also concludes by suggesting that the risks of induction needed to be explained to Ms Brown and that the options regarding delivery considered for informed consent for induction. He states:

> 'Although the risk of uterine rupture was still only about 5-10%, when uterine rupture occurs the likelihood of the baby being subjected to severe hypoxia was very high.' [76]

This statement again reprises the suggestion that in Ms Brown's case there would be an incidence of uterine rupture of between 5% and 10% in circumstances such as hers, a figure that was not at the Inquest shown to be directly supported by literature or by other persuasive evidence.

8.10. In his oral evidence Professor Pepperell repeated the figure stated in his report that the risk of uterine rupture using prostaglandin gels where there has been a previous perforation in the upper segment of the uterus was probably about 5% to 10%, that is to say the risk where there has been a previous classical caesarean section or previous myomectomy. He did go on to say that the risk of rupture might depend upon the size of the wound that had been inflicted in the first instance in that the larger the wound, the more likely it is to undergo further damage in subsequent labour, but he conceded that he did not know whether there was '*good clear data*' as to the increased likelihood[77]. However, the mere presence of the previous wound may well increase the risk in respect of future pregnancies and deliveries[78].

8.11. Professor Pepperell expanded upon the relevance of the interval from uterine perforation to next pregnancy and delivery. It appears that Ms Brown had conceived around six weeks from the time of the uterine perforation. Professor Pepperell suggested that this would mean that the child would be delivered less than 12 months since the perforation. He suggested there was data clearly implicating delivery within 18 months as increasing the risk of uterine rupture in a subsequent vaginal delivery. It will be noted, however, that the timeframes quoted in various guidelines and publications that were tendered to the Inquest spoke of such timeframes in the context of pregnancies and deliveries following previous caesarean section. Professor

[76] Exhibit C24, page 11
[77] Transcript, page 468
[78] Transcript, page 468

Pepperell suggested that the relevance of the timeframe is connected to the possible lack of complete healing that may have occurred. In this context Professor Pepperell suggested that the ultrasound that was taken in March 2011 appeared to reveal that healing to that point had been inadequate and would be associated with potential increased risk of rupture later in the pregnancy, either during the antenatal period of the pregnancy, or particularly during labour. This was a proposition that Dr Olesnicky strenuously resists.

8.12. As to the distinction that was sought to be drawn between the accepted contraindication of '*previous uterine surgery*' and a simple perforation of the kind under discussion here, Professor Pepperell suggested that a perforation during a D&C that did not require surgical repair would in his view fall into the gambit of previous uterine surgery because a perforation was known to have occurred and that under those circumstances the risk involved in prostaglandin use are increased[79]. He said that where any perforation has occurred, regardless of whether it needs to be repaired or not, it is an indication that there has been some damage to the uterus, thereby increasing the potential risk[80]. This would give rise to a predisposition to rupture which he suggested clearly occurred in this case[81]. As to the wording of the various guidelines, Professor Pepperell suggested that regardless of whether a known perforation had been surgically repaired, the perforation should be considered as a damaged area of the uterus and one which would be predisposed to rupture and that reference to this predisposition needed to be included in the various guidelines[82].

8.13. There is one important matter in which Professor Pepperell appeared to differ from the position explained by Dr Olesnicky. As already hinted at in his report, Professor Pepperell in his oral evidence stated that he did not consider a uterine perforation to be a total contraindication for the use of prostaglandin gels. He suggested that if a practitioner was to provide the patient with appropriate information then it is up to the patient to make the final decision. He said:

> 'No, I think you've got to give them the information and that they ultimately will make the final decision. Patients today do - are very keen to be involved in that decision-making process and many of them, even though they're told the risk of rupture is - is low and is increased if it's been an upper segment incision, will still decide they wish to

[79] Transcript, page 480
[80] Transcript, page 481
[81] Transcript, pages 481-482
[82] Transcript, page 482

> proceed with an induction process, and it's something then that you need to bear in mind when you're making that decision, but you're not getting informed consent if those matters are never discussed.' [83]

On the other hand, in that same context Professor Pepperell would not agree with the proposition that the risk of rupture during labour in those circumstances is so negligible as not to warrant patient advice as to risk or as to other alternative methods of delivery. He said that it is up to the patient in effect to decide whether they can '*live with*' the known risk[84]. As well, all of this contemplates a situation where there is available within the hospital the necessary facilities to adequately monitor the baby during the labour and where an urgent caesarean section can be effected[85].

8.14. In cross-examination by Mr Harris QC, Professor Pepperell accepted that the risk associated with uterine perforation which had not required suture repair was low but not nil[86]. He acknowledged that not every risk associated with a perforation will equate to 5% - 10%, which is the same risk that is associated with a classic caesarean section. He also acknowledged that the risk profile would be less the smaller the hole, but it would never constitute a nil risk profile[87]. Professor Pepperell also appeared to accept the proposition that a perforation by an instrument during a D&C procedure where the wall of the uterus was compromised but where no surgical repair was necessary, would not necessarily satisfy the definition '*prior uterine surgery*' as it would be generally understood by medical practitioners. On the other hand, Professor Pepperell stated that his personal interpretation is that if a woman had a perforation of the uterus, she had effectively had previous uterine surgery and that therefore the risk of rupture is increased[88]. He acknowledged that this was not the interpretation of the general practitioner obstetricians involved in this case[89].

8.15. During his evidence Professor Pepperell was not in any way shaken as to the need for the patient to be given appropriate advice in relation to risk in cases such as Ms Brown's. He told the Court that a woman in her position would '*clearly need to be informed*' of a number of matters including a description of the uterine damage, the likelihood of the damage healing satisfactorily, that because uterine rupture in

[83] Transcript, page 482
[84] Transcript, page 483
[85] Transcript, page 483
[86] Transcript, page 509
[87] Transcript, page 509
[88] Transcript, page 521
[89] Transcript, page 521

pregnancy is more likely where the time interval between damage and subsequent pregnancy is short a woman should avoid becoming pregnant within the next 12 to 18 months, that the woman would ultimately need to make a decision as to whether in fact a vaginal delivery would be an appropriate method of proceeding or whether, because of the increased risk of rupture during labour, caesarean section as the primary method of delivery would be something to be considered as more appropriate. In addition, it would need to be explained to the patient that one might not always recognise complications early enough to ensure that a baby is delivered in good condition if rupture actually does occur. Professor Pepperell also stated that in the light of the result of Ms Brown's ultrasound in March 2011, a patient in her position would need to be advised of those findings with an indication that if she did become pregnant there would be an increased risk of uterine rupture during the pregnancy and/or the labour and that therefore she should avoid pregnancy until there is as good as possible healing and this would mean probably waiting 18 months. This piece of advice would undoubtedly be resisted by Dr Olesnicky who did not have any belief that the ultrasound signified anything of special concern.

8.16. Professor Pepperell also suggested that there was a need to discuss risk with the woman regardless of the fact that it might be low[90]. Taking into account a measure of uncertainty within the first 12 months of the degree of healing that had taken place following perforation, the uncertainty about the relationship between the known size of the perforation and the incidence of rupture (although it would be accepted that it was greater that nil risk), and the fact that in the case of a individual woman it is difficult to predict her response to the administration of prostaglandin, Professor Pepperell suggested that one would explain to the patient that the risk of uterine rupture is increased by virtue of those unknown factors. As well, the fact that a large proportion of babies will be lost if a rupture does occur, especially where the foetus is expelled into the abdominal cavity as was the case with Ms Brown's baby, needs to be explained and considered. Professor Pepperell said that such information would also need to be given by the practitioner who was involved in the care of the patient at the time the perforation occurred. He suggested that the advice ought to be:

> 'Under normal circumstances the safest thing will be to deliver you by caesarean section but you need to make that final decision.' [91]

[90] Transcript, pages 482-483
[91] Transcript, page 515

## 9. Ms Brown's decision to proceed with induction by way of prostaglandin gel

9.1. The decision of the High Court of Australia in **Rogers v Whitaker** (1992) 175 CLR 479 made it plain that the patient's consent to treatment may be valid once he or she is informed in broad terms of the nature of the procedure which is intended, but that the choice in reality is meaningless unless it is made on the basis of relevant information and advice. The majority of the High Court in their joint judgment explained that the duty to warn a patient of an inherent risk in any treatment arises where the risk is '*material*'. They explained that a risk is material if, in the circumstances of the particular case, a reasonable person in the patient's position if warned of the risk, would be likely to attach significance to it, or if the medical practitioner is or should reasonably be aware that the particular patient, if warned of the risk, would be likely to attach significance to it[92].

9.2. In the case of **F v R** (1984) 33 SASR 189, King CJ suggested that the duty of the doctor to explain the implications of a course of treatment extends to the disclosure of real risks of misfortune inherent in the treatment[93].

9.3. I find that Ms Brown was not provided with any information about whether or not the use of prostaglandin gels in the induction of her baby would pose a risk of uterine rupture. She did not obtain that advice from Dr Olesnicky and she did not get it from the three general practitioners who were involved in her care towards the end of her pregnancy. She told the Court that she was not concerned about her unborn child because the doctors were not concerned[94].

9.4. On the night of her confinement neither Dr Walters nor anyone else had informed her about the possibility of risk. As well, no practitioner mentioned the possibility that in the alternative she could have a caesarean section. Although I did not understand Ms Brown to be saying that she had no idea that an elective caesarean section was available, what I took from her evidence was that the question of an elective caesarean section simply did not arise in her case, that there was no discussion with her as to whether that should be considered as a viable alternative to induction[95] and that as a result the question of her undergoing an elective caesarean section was not the subject of any consideration in her own mind or in anybody else's. She was not

[92] Ibid 483
[93] Ibid 191
[94] Transcript, page 40
[95] Transcript, page 60

told of any possible complications, difficulties or risks involved in what was going to happen to her and to her baby and in particular of any issue that might be posed by the previous perforation. She did not have any knowledge from any other source about the risk that a perforated uterus might pose[96]. She said that she had no specific plans for her birthing process which I took to mean that she had an open mind about the type of delivery that she might undergo, depending on the circumstances[97]. On many occasions during the course of Ms Brown's oral evidence she was absolutely insistent that if the question of risk had been discussed with her at all and that the possibility of having a caesarean section in the alternative had been raised with her, she would have elected for a caesarean section. She said '*I wouldn't have put my baby at risk*'[98]. She stated that she would not have wanted to go ahead with the induction of labour if, because of her perforated uterus, she had been told that inducing labour had any potential to cause harm to her baby[99]. She said that she would have had an elective caesarean section '*if I had known there was any risk at all. I wouldn't have put my baby at any risk*'[100]. When challenged about those statements by Mr Harris QC, she repeated that she would not have put her baby at risk, even to the point of suggesting that she would not have done so even if the risk was miniscule[101]. Ms Brown adopted the same stance when questioned closely on the same topic by Ms Cacas, counsel assisting.

9.5. There is an obvious element of hindsight involved in a consideration of what Ms Brown would or would not have done had she known of the risk that might be posed either to herself or her baby by virtue of the previous perforation and the administration of prostaglandin gel during induction. Clearly her reaction would have largely depended upon the description of the risk, both in terms of what adverse event might happen and in terms of the likelihood of that occurring.

9.6. It is difficult to know what Ms Brown's attitude would have been if she had specifically enquired of any of the three general practitioners who were involved in her care as to whether or not the perforated uterus posed a risk in terms of the proposed induction and its method. The answer probably would have been in the case of each of those doctors that the risk, if any, was negligible. She may even have been

[96] Transcript, pages 62-63
[97] Transcript, page 63
[98] Transcript, page 61
[99] Transcript, page 64
[100] Transcript, page 64
[101] Transcript, pages 74-75

told that there is no literature or other medical information that suggest that a risk is posed in those circumstances. It is not totally impossible that with advice to that effect Ms Brown would have elected to go ahead with the proposed method of induction. I do, however, receive a very strong impression from Ms Brown, and particularly taking into account the circumstances involved in her other failed pregnancies and the need to avoid further negative outcomes, that if she had been advised that there was a risk that was low but which was nevertheless not nil, she would have elected for a caesarean section. This was her seventh pregnancy and although she had given birth to two healthy children in the past, she had undergone a number of other unsuccessful pregnancies, including two miscarriages. She was only 22 years of age at the time of her confinement with Aurora and there is reason to suppose that in all of the circumstances Ms Brown would have gone down the path of least risk and have elected for a caesarean section.

9.7. In my view it can be concluded with some certainty that if she had received advice specifically from Dr Olesnicky that use of prostaglandins in an induction of labour where there has been a perforation of the kind that he saw is totally contraindicated, Ms Brown would have elected for a caesarean section.

## 10. Ms Brown's management at Mount Gambier Hospital

10.1. At this point it is necessary to explain some of the salient features and events of Ms Brown's confinement. Ms Brown was admitted at about 7:15pm on Thursday, 17 November 2011. At about 7:20pm a CTG was commenced. This was implemented to monitor the quality of the unborn child's heart beat and heart rate. At approximately 8:00pm Dr Walters administered the prostaglandin gel at a dose of 1mg. The CTG monitoring continued in accordance with the usual practice following administration of prostaglandin gel. Dr Walters then left the hospital. Ms Brown was left in the care of nursing staff. A note timed at 9:20pm made by registered midwife Nurse Heading, to whom I have already referred, states that the CTG showed a '*reassuring trace*'. Monitoring was discontinued at that time[102]. In fact the CTG trace showed regular contractions at the rate of 5 to 6 in 10 minutes which is not ideal and, if anything, excessive. Ideally the contraction rate at this juncture should have been less than 5 in 10 minutes. It is clear, and I so find, that these contractions were stimulated by the prostaglandin gel. Nurse Heading's note records that it was

[102] Exhibit C7, page 25

suggested that Ms Brown, for the sake of relaxation and pain relief, have a bath. Panadol was also given at that point. Ms Brown herself told the Court that within 15 minutes of the gels being administered she experienced excruciating pain. She says that it was as a result of this that the bath was suggested. She then went into another room in which there was a bath. She went in there with her partner. Another note made by Nurse Heading timed at 10:20pm records that by that time Ms Brown was out of the bath and was now very distressed with constant abdominal pain. The precise period of time that Ms Brown was in the bathroom is not entirely clear, but it must have been a substantial period of time between 9:20pm and 10:20pm. During that period the CTG trace had been discontinued. I understood the evidence to be clear that during that period of time Ms Brown was not seen by the nursing staff. However, to my mind the evidence is not clear as to the point in time when significant concern was felt about Ms Brown's situation for the first time. In particular, I am not entirely certain that at the point that Ms Brown was taken to the bathroom that any concern was felt or recorded at that time. There is nothing in the clinical record to suggest that any significant distress or pain was detected until shortly before Nurse Heading's note was made at 10:20pm. In her evidence Ms Brown suggested that the doctor was telephoned at a time when she was still in the bathroom, but the evidence as a whole would tend to suggest otherwise as no attempt was made to contact Dr Walters until about 10:20pm. The notation by Nurse Heading at 10:20pm had indicated that the contractions that Ms Brown was experiencing were now in excess of 6 in 10 minutes. At that stage there was foetal tachycardia, that is to say an excessive heart rate, at 179 to 190 beats per minute.

10.2. Dr Walters is noted to have arrived at the Mount Gambier Hospital at about 10:40pm. Dr Walters noted that Ms Brown was significantly distressed with severe and constant pain. By then the baby was experiencing obvious foetal bradycardia. On examination Ms Brown's uterus was extremely tender. Ms Brown could not tolerate uterine palpation. A working diagnosis of hypertonic uterus was made at that point and this was attributed to the effect of the gel. Dr Walters made an attempt to perform a vaginal examination to clear the gel but she was unable to do this due to Ms Brown's distress. I am not certain as to whether Dr Walters made the decision to perform an emergency section at that stage or whether the arrival of Dr Gayford prompted this. Certainly by the time Dr Gayford arrived some preparations had already been made to have Ms Brown sent to the operating theatre.

10.3. Dr Gayford was called at 10:52pm. She gave certain advice on the phone and she travelled to and arrived at the hospital a few minutes later. At that point Dr Gayford also entertained an impression of placental abruption. The obstetrician Dr Smith was also summoned to attend and ultimately the incision for the caesarean section was made by Dr Gayford at 11:30pm.

10.4. According to Nurse Heading there was foetal tachycardia for a period of time which was then followed by bradycardia at around 60 beats per minute. Nurse Heading recorded bradycardia at 10:36pm within the clinical record. The bradycardia together with absent variability was a very concerning sign. Clinically Ms Brown was noted to be in constant pain and was very distressed. At 10:50pm the foetal heart rate was noted by Nurse Heading to be less than 80 beats per minute with absent variability, which is again very concerning. At 10:55pm when Ms Brown was in the waiting bay of the operating theatre the heart rate was recorded at being less than 60 beats per minute. At 11:00pm, after CTG monitoring had been replaced with sonic aid monitoring, again the heart rate was less than 60 beats per minute. At 11:05pm the heart beat was still heard at around 60 beats per minute. A vaginal examination performed by Dr Gayford at that point demonstrated bright blood. At 11:10pm Nurse Heading recorded that she was unable to detect a foetal heart rate which would be consistent with the baby being in extremis if not in foetal cardiac arrest.

10.5. In his evidence Professor Pepperell expressed the opinion that any delay that occurred in respect of the setting up of the emergency caesarean section was not excessive[103]. He was referring there to the period of time that elapsed between the phone call to Dr Gayford at 10:52pm and the commencement of the caesarean section with knife to skin at 11:30pm. It took approximately two minutes to deliver the baby. In the same context Professor Pepperell expressed the opinion that Ms Brown's uterine rupture probably occurred when the foetal heart rate was first detected to be abnormal. However, there was a foetal heart rate still present and Ms Brown still continued to contract until 10:33pm. He was of the opinion that the baby was still in the uterus at that stage but had not yet been expelled into the peritoneal cavity. He believed that there perforation of the uterus occurred at around 10:22pm, but that it was not complete until 10:33pm[104]. From that point Professor Pepperell believed that there was a window of opportunity of approximately 10 to 15 minutes following that time

[103] Transcript, page 519
[104] Transcript, page 486

to perform a successful caesarean section, that is to say there was a 10 or 15 minute opportunity for the baby to have any chance of survival. This would have required the baby's delivery at a time before 11:00pm. Professor Pepperell added that unless a hospital is a Level 3 institution with theatre staff already present, including an anaesthetist, there were virtually no hospitals that could have delivered this baby by way of emergency caesarean section within that stipulated timeframe. It is noteworthy that in this context Professor Pepperell agreed with the proposition of counsel assisting that perhaps the risks involved with Ms Brown's induction and especially the method of induction are not worth taking unless one is in a hospital that has all facilities available and can expedite delivery[105]. Certainly in this particular case with no doctors physically at the hospital and with only nursing staff in attendance the chances of securing an emergency caesarean section in time to deliver a healthy and uncompromised baby were extremely thin. The only manner in which an emergency caesarean section could have been effected in this case was if Dr Walters had called an emergency caesarean section at 10:40pm, had secured the necessary theatre staff, including surgeon and anaesthetist, to attend within the next 10 or 15 minutes and had applied knife to skin at or before 11:00pm. It is difficult to see how with the best will in the world this could have been carried out[106].

10.6. There are some matters about Ms Brown's management that have been questioned. At 9:20pm it was clear that Ms Brown was experiencing a greater than ideal number of contractions in a period of 10 minutes. It was also recorded that she was experiencing pain. Although I was not totally persuaded that at that point Ms Brown was experiencing and demonstrating alarming symptoms, Dr Walters told the Court that the pattern of 5 to 6 contractions in 10 minutes recorded at 9:20pm was very suggestive that the uterus had immediately responded to the prostaglandin and that it indicated hyperstimulation of the uterus that could lead to hypertonia[107]. Dr Walters said that she would have regarded that as a '*red flag*'[108] and something that they needed to be concerned about. This, she said, could have prompted continuous CTG to ensure that the baby was not becoming distressed by the uterine contractions and to ensure that proper oxygenation of the baby was maintained. It will be remembered that the CTG was discontinued in order to allow Ms Brown to enter the bath. Dr

[105] Transcript, page 487
[106] Dr Walters is not qualified to perform a caesarean section
[107] Transcript, page 403
[108] Transcript, pages 404, 407

Walters also told the Court that the CTG trace required correlation with Ms Brown's clinical picture. She would ask whether the contractions reflected by the CTG were painful and, if they were not painful, that would be reassuring[109]. The fact that Ms Brown was given Panadol for pain relief and the fact that she was offered a bath was something that Dr Walters said she would have liked to have been told about[110]. I asked Dr Walters what she may have done if she had been contacted at about 9:20pm. She said that having regard to the frequency of contractions so soon after the giving of prostaglandin and that the contractions were painful enough to require pain relief, she probably would have returned to the hospital and have examined Ms Brown[111]. If Dr Walters had detected evidence of hyperstimulation and that the uterus was not relaxing completely between contractions, she probably would have phoned the obstetric registrar at that point. She would have considered providing Ms Brown with the medication to reverse the effect of the prostaglandin gel. Dr Walters said it may have meant that she could have started the treatment that she ultimately did start at an earlier time. As well, the question of an emergency caesarean section may have been considered earlier if it was believed that the perforation had become a risk factor after all[112]. Dr Walters surmised that although she could not predict what the obstetric registrar and the specialist may have decided, it was possible that they would have decided that a caesarean section was the alternative. However, Dr Walters added that at the time she arrived to see Ms Brown displaying abdominal pain and foetal distress, her diagnosis was of a hypertonic uterus and that she still did not consider that uterine perforation was a relevant problem at that point. Dr Walters summarised by agreeing with counsel that all of these matters required consideration at 9:20pm.

10.7. Professor Pepperell expressed a view about this issue which was perhaps more conservative than that of Dr Walters. Professor Pepperell said that while the contraction frequency as revealed by the CTG needed to be slightly less than 5, it was nevertheless quite common to see frequency magnitudes of 6 in 10 minutes when prostaglandin gel is first administered. Professor Pepperell added that contractions of that magnitude of frequency usually settle down spontaneously with time; if one watches the frequency the matter can be proceeded with, providing that the foetal heart rate itself is satisfactory. Professor Pepperell did not suggest that it was

[109] Transcript, page 408
[110] Transcript, page 409
[111] Transcript, page 415
[112] Transcript, page 415

necessary for the nursing staff to have contacted the medical practitioner at 9:20pm[113], although it would not have been unreasonable for her to have been so contacted. As I understood Professor Pepperell's evidence there is no suggestion at that point in time the baby's heart parameters had been revealed as abnormal. In fact his report suggests that at 9:30pm the ceasing of the CTG was not inappropriate because the heart rate was normal.

10.8. That said, by the time Ms Brown was next seen following her having been offered a bath, which in the event she did not have, Ms Brown was in some considerable distress and had constant abdominal pain. The contractions were then in excess of 6 in 10 minutes and the child was detected as being bradycardic once the CTG was reapplied. The evidence as to how such a significant change in Ms Brown's presentation was not detected earlier was to my mind unsatisfactory.

10.9. The remaining issue concerns the fact that when arrangements were being made to effect an emergency caesarean section there was an omission to contact an anaesthetist. The delay that was occasioned was not a considerable one, and one which Professor Pepperell would not have considered as having created an abnormally significant delay to the procedure being commenced. In any event it appears that the child may well have been in extremis and have been irretrievable even prior to 11:00pm. Thus, further delay may not have altered the outcome.

## 11. Conclusions

11.1. The Court reached the following conclusions.

1) The cause of Aurora's death was hypoxic-ischaemic encephalopathy attributed to intrapartum asphyxia secondary to uterine rupture and subsequent displacement of the placenta and baby into the maternal abdominal cavity;

2) Prostaglandin gel was administered to the cervix of Ms Brown in order to induce labour. I find that the administration of prostaglandin gel caused Ms Brown to experience excessively strong and frequent uterine contractions;

3) I find that the excessively strong and frequent uterine contractions experienced by Ms Brown caused her uterus to rupture;

[113] Transcript, page 496

4) I find that the scar on Ms Brown's uterus, being the result of a perforation of her uterus during a D&C procedure on 14 February 2011, was the site of, and source of, the uterine rupture;

5) I find that the administration of prostaglandin gels contributed to Ms Brown's uterine rupture;

6) I find that Ms Brown's uterine rupture caused the expulsion of Aurora and the placenta into the abdominal cavity. I find that this event was the cause of the irreversible hypoxic brain injury that was the cause of Aurora's death;

7) I find that Aurora was a viable unborn foetus prior to the induction of Ms Brown's labour. I find that Aurora's death could have been prevented if the use of prostaglandin gels to induce Ms Brown's labour had been avoided. In the circumstances the use of prostaglandin gels could have been avoided if Ms Brown had undergone the delivery of her baby by way of elective caesarean section;

8) I find that Ms Brown knew of the fact that her uterus had been perforated during the D&C procedure that occurred on 14 February 2011. However, I find that Ms Brown did not have an appreciation of the risk that the uterine perforation posed in respect of the chosen method of delivery of Aurora;

9) I find that Ms Brown was informed by Dr Olesnicky that the uterine perforation did not pose any impediment to Ms Brown becoming pregnant again. I am not certain that Dr Olesnicky stated or implied that she could do so in the near future, but I find that Ms Brown formed the belief from whatever Dr Olesnicky did say that she could become pregnant in the near future without risk;

10) Ms Brown underwent an abdominal ultrasound on 18 March 2011 which demonstrated that the uterine perforation was in the process of healing. It is not possible to assess whether the degree of healing that the ultrasound demonstrated at that time carried any implications as to whether in time the perforation would heal satisfactorily;

11) I find that Dr Olesnicky at all material times held the view that a uterine perforation of the kind experienced by Ms Brown would, in respect of any future pregnancy of Ms Brown, amount to a total contraindication to the use of prostaglandin gel in connection with the induction of labour;

12) I find that Dr Olesnicky did not impart that view to Ms Brown, nor to any of Ms Brown's usual general practitioners. Dr Olesnicky did not have any involvement in respect of Ms Brown's confinement in November 2011. If, say, Dr Olesnicky had assumed contemporary involvement in Ms Brown's delivery of Aurora, he would undoubtedly have advised Ms Brown to have Aurora delivered by way of caesarean section[114]. Alternatively, Dr Olesnicky may have considered induction by way of simple amniotomy. In any event it is clear in my view that Dr Olesnicky would not have induced Ms Brown's labour by way of the administration of prostaglandin gel[115]. Nor would he have advised the same if he had been consulted at the time. In fact, it is clear that he would have strongly advised against it. Dr Olesnicky was at no time consulted by any of Ms Brown's general practitioners at or around the time of her induction of labour in respect of Aurora. It would have been far better if he had been so consulted, or if one of the local consultant obstetricians had been consulted;

13) I find that Dr Olesnicky should have communicated his views about the potential consequences posed by Ms Brown's perforated uterus to both Ms Brown and to her general practitioners. I note in this regard that Dr Olesnicky, through his counsel Ms Cliff, accepts that criticism[116]. In my view Dr Olesnicky's failure to so communicate is mitigated by the fact that it was his genuine belief that the medical practitioners who would be involved in the delivery of Ms Brown's next baby would hold the same professional beliefs as his and be in a proper position to be able to advise Ms Brown and to safely manage any future pregnancy and labour of her[117];

14) To my mind the evidence in this case has demonstrated that the use of prostaglandin gels in the induction of labour in respect of a woman who has experienced a previous uterine fundal perforation that has not required surgical intervention poses a material risk of uterine rupture during labour;

15) Although the issue is not free from difficulty, having carefully assessed the evidence of Dr Zwijnenburg, Dr Dunn and Dr Walters, the Court is not persuaded that those three general practitioners, either singly or collectively, should have appreciated that the risk of uterine rupture posed by Ms Brown's

[114] Transcript, page 124
[115] Transcript, page 129
[116] Transcript, pages 592, 594
[117] Transcript, page 140

previous uterine perforation and the administration of prostaglandin gels was a material risk that needed to be conveyed to Ms Brown. In this regard I have found that each of those three medical practitioners at the time genuinely believed that no risk of the kind described was posed to Ms Brown. Also in this regard I have found that contraindications within the relevant guidelines concerning the use of prostaglandin gels in the induction of labour could reasonably have been interpreted by medical practitioners of the type, qualifications and experience of the three practitioners I have identified as being confined to a previous uterine surgical procedure per se, not including a uterine perforation that had not required surgical intervention.

16) On balance I have found that at about 9:20pm on the night of 17 November 2011 it was reasonable for the Mount Gambier Hospital nursing staff not to have contacted Dr Walters in respect of the nature of Ms Brown's uterine contractions at that point in time. I was not persuaded that at that point there were any CTG or clinical signs in respect of Ms Brown that were alarming. However, I find that within a short space of time, and at a time before 10:20pm, Ms Brown had become very distressed and was in constant and severe pain. As well, the reconnected CTG demonstrated excessively strong and frequent uterine contractions as well as foetal tachycardia;

17) I find that having regard to the type of hospital and the available facilities and personnel, there was no unreasonable delay in effecting Ms Brown's emergency caesarean section save and except by a small delay that was occasioned by the failure to contact the anaesthetist in the first instance;

18) Any delay that was occasioned in the management of the emergency caesarean section, and which could have been avoided, cannot be demonstrated to have materially contributed to the fatal outcome for Aurora;

19) I find beyond any doubt that if Ms Brown had been advised to undergo an elective caesarean section in respect of her delivery of Aurora, she would have elected to do so. Equally I am certain that if Ms Brown had been advised that the risk of uterine rupture was a substantial risk or that it was a risk that would be best avoided, she would have elected for a caesarean section. I am less convinced that she would have elected to undergo a caesarean section if she had been told that the use of prostaglandin gels in an induction of labour would have

posed some but not a substantial degree of risk of uterine rupture. However, I have found that it is more probable than not that in those circumstances she would have elected for a caesarean section.

## 12. Recommendations

12.1. 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 events that were the subject of the Inquest.

12.2. I have already referred to the firm view of Dr Olesnicky that a uterine perforation of the kind experienced by Ms Brown should be regarded as a contraindication to the use of prostaglandin gels in a subsequent childbirth. I understood Dr Olesnicky's view to be that there ought to be a total prohibition placed upon the use of prostaglandin gels in cases such as Ms Brown's. I do not think that Professor Pepperell's view was as extreme as that. The focus of Professor Pepperell's opinions in this regard had more to do with the need to proffer appropriate advice to a woman in Ms Brown's position. That is to say, there is a need to explain the risks that are involved in the use of prostaglandin gels where there has been a previous uterine perforation. It is worthwhile observing that according to Professor Pepperell one in two women who experience a uterine rupture during labour will lose the baby. There is also, of course, the risk of hysterectomy once a uterine rupture has occurred. Having regard to the fact that in Professor Pepperell's view there is a very limited window of opportunity to deliver a baby by way of emergency caesarean section following a uterine rupture, something of the order of 10 to 15 minutes[118], and taking into account that such timeframes would probably only be achievable in Level 3 institutions, some may reasonably argue that the risk associated with undergoing an induced childbirth by the use of prostaglandin gels where there has been a prior perforation of the uterus is indeed a risk not worth taking unless one is in such an institution. It is clear, therefore, that one matter that a woman would need to consider in deciding whether or not she should undergo an induction as opposed to a caesarean section is the nature of the facilities and resources that would be available in the worst case scenario. This then gives rise to a question as to whether or not induction of labour in circumstances of risk such as those that applied to Ms Brown ought to take place in country hospitals. I was told during the Inquest that in order to ameliorate the difficulty that I

[118] Transcript, page 486

have described, the Mount Gambier Hospital has, as part of an emergency caesarean regime, instituted a practice whereby two registered midwives acting together have the authority to declare that an emergency caesarean section should be carried out. This measure has the effect of avoiding the delay that is occasioned by the responsible medical practitioner having to be called, having to travel to the hospital, having to make their own assessment and then calling the emergency caesarean section. I understand the practice now to be that the nursing staff may make the call for the emergency caesarean section and may start making the necessary arrangements for theatre staff to be assembled without having to wait for the responsible medical practitioner to come in and make that call.

12.3. Professor Pepperell expressed the view that there is a need for the relevant protocols and guidelines to be amended to reflect the predisposition of a previous perforation site to rupture, regardless of whether it could be equated to, viewed as or otherwise characterised as previous uterine surgery. Professor Pepperell expressed the view that there should be an inclusion in the relevant guidelines, which I took to mean the South Australian Perinatal Practice Guidelines – Induction of Labour Techniques as well as the Australian College of Rural and Remote Medicine Guidelines, to the effect that where a known perforation of a uterus has previously occurred, it should be regarded as a uterine area of damage predisposed to rupture. Mr O'Leary of counsel who appeared for and on behalf of Country Health SA Incorporated and the Minister for Health and Ageing submitted that if the Court considered making any recommendation in accordance with Professor Pepperell's views that the recommendation should be confined to a referral of the Court's findings to the South Australian Maternal and Neonatal Clinical Network, which is the working group responsible for the Induction of Labour guidelines, for its formal consideration. I will certainly draw these findings to the attention of that entity, but I have been persuaded that Professor Pepperell is correct when he suggests that the guidelines should in some specific manner refer to the risk posed by previous uterine rupture not involving surgical correction, as well as to previous uterine surgery. To my mind it is obvious that for the guidelines to remain as they are they would be misleading.

12.4. I would also add in this context that I intend to draw these findings to the attention of those responsible for the MIMS publication and in particular what appears to be an incongruity between the product information relating to Prostaglandin gel and that relating to Syntocinon. In addition, the product information, and in particular that

relating to contraindications for the use of Prostaglandin gel might also be considered as misleading.

12.5. In his evidence before the Court Professor Pepperell on a number of occasions emphasised the need for women in the position of Ms Brown to receive appropriate information and advice concerning risk, having regard to matters such as the uncertainties that I have earlier described in terms of the degree of healing of the perforation, the relationship between the size of the perforation and the incidence of rupture, the fact that there will be a risk of rupture that is greater than nil and the fact that a person's response to prostaglandin administration may be unpredictable.

12.6. I make the following recommendations:

1) That these findings be drawn to the attention of the Minister for Health and Ageing, the Chief Executive of the Department of Health, the Chair of the South Australian Maternal and Neonatal Clinical Network, the Editorial Board of MIMS Australia, the Chief Executive Officer of the Royal Australian and New Zealand College of Obstetricians and Gynaecologists and the President of the South Australian Branch of the Australian Medical Association for the education of its members;

2) That clinical guidelines be developed, including within the Australian College of Rural and Remote Medicine Rural Clinical Guidelines and the South Australian Perinatal Practice Guidelines – Induction of Labour Techniques, and the South Australian Perinatal Practice Guidelines – Uterine Rupture, relating to the risk of uterine rupture occasioned by the administration of prostaglandin gel in a woman who has had a previous uterine perforation whether surgically repaired or not. Such guidelines should include reference to:

   a) the specific outcome in this case;

   b) uncertainty in respect of the degree of healing of the uterine rupture;

   c) the need to take into consideration the time that has elapsed between the uterine perforation and a subsequent labour;

   d) the need to take into account any relationship between the size of the perforation and the incidence of rupture;

   e) that there will be a risk of rupture, whether calculable or not, which is greater than nil;

f) the need to consider that the individual woman's response to prostaglandin may not be predicted with certainty.

3) That members of the medical profession be advised that in the case of a uterine perforation that has not required surgical repair, there is a need to explain to the patient any risks associated with that rupture and any possible future consequences resulting from it;

4) That the medical profession be advised that in all cases where induction of labour is to be effected by way of prostaglandin gel, that consideration needs to be given to the matters described in subparagraph 2 herein and that those matters be explained to the particular woman in question with advice to the woman in each case that there is a risk involved in the administration of prostaglandin gel in cases where the woman has experienced a previous uterine perforation regardless of whether or not it has been the subject of surgical repair;

5) That general practitioners, including those with obstetric qualifications, be advised that in cases of doubt they should consult a consultant obstetrician about the use of prostaglandin gel in cases involving a previous uterine perforation;

6) That medical practitioners be advised that in cases involving induction of labour by way of the administration of prostaglandin gel where there has been a previous perforation of a uterus, that consideration is given as to whether in the event of a uterine rupture during labour the facilities within the relevant institution or hospital are capable of facilitating an emergency caesarean section without undue delay.

*Key Words: Induction of Labour; Foetal Monitoring*

*In witness whereof the said Coroner has hereunto set and subscribed his hand and Seal the 8th day of July, 2014.*

*Deputy State Coroner*