

## 1. Intrapartum Risk Factors

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### Preamble:

The Midwives Model of Care® recognizes the client/patient as the primary decision maker in all aspects of her care and respects her autonomy. This is supported within a model of well-informed, shared decision-making in order to achieve optimal clinical outcomes. Disclosure of risks is an integral part of the informed consent process, as outlined by NARM (the *North American Registry of Midwives*).

*“If a midwife supports a client’s choices that are outside of her Plan of Care, she must be prepared to give evidence of informed consent. The midwife must also be able to document the process that led to the decision and show that the client was fully informed of the potential risks and benefits of proceeding with the new care plan. It is the responsibility of the midwife to provide evidence-based information, clinical expertise, and when appropriate, consultation or referral to other providers to aid the client in the decision making process.” – NARM*

Licensed midwives are trained experts in the management of low-risk pregnancy and birth outside of the hospital. Certain conditions may present increased risk to mother and/or baby. The risks listed below apply to birth in any setting, and are not all-inclusive. The condition/risk factor listed may require medications and treatments outside of the scope of practice of Virginia Licensed Midwives and, thus may necessitate consultation with a physician, additional testing, and careful consideration for the appropriateness of birth in an out-of-hospital setting. Some conditions in pregnancy should be optimally managed and supported by a multidisciplinary team that may include midwives, obstetricians, perinatologists, family physicians, psychologists, social workers, and spiritual advisors.

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### Conditions requiring on-going medical supervision or on-going use of medications

Clients with chronic medical conditions, on prescribed medications, or under medical care for a time-limited problem that coincides with pregnancy should be advised to consult with their treating healthcare providers regarding the impact of these conditions and medications on pregnancy, as well as any impact pregnancy may have on their other diagnosed conditions. Women who choose not to disclose information regarding any medical conditions they have or medications that they are taking may increase their risk of complications.

### Current substance abuse (including alcohol and tobacco)

Obstetrical complications of cigarette smoking include:

- Growth restriction (IUGR)
- Spontaneous abortion (miscarriage)
- Sudden infant death syndrome (SIDS)

Alcohol abuse leads to:

- Nutritional deficiencies
- Fetal alcohol syndrome

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In addition to increased risk of preterm labor and baby being small for gestational age, complications resulting from abusing other drugs include:

- Heroin and cocaine consumption result in medical, nutritional and social neglect
- Cocaine and amphetamine cause hypertension, placental abruption
- Intravenous abuse also increases the risk of contracting infectious disease.<sup>1</sup>
- Maternal substance use of opioids, benzodiazepines, barbiturates, and alcohol can cause NAS (Neonatal abstinence syndrome).<sup>2</sup> NAS is a set of drug withdrawal symptoms that affect the central nervous, gastrointestinal, and respiratory systems in the newborn when separated from the placenta at birth.

### **Documented Intrauterine growth retardation (IUGR)/small for gestational age (SGA) at term**

Complications<sup>3</sup> for the growth-restricted fetus include:

- Prematurity
- Perinatal morbidity
- Stillbirth

"IUGR is a serious problem, regardless of why the baby is small. About 20% of stillborn babies are IUGR, and perinatal mortality for growth-restricted infants may be 6 to 10 times higher than for those of normal size. Most IUGR stillbirths occur after the 36<sup>th</sup> week of pregnancy and before labor begins."<sup>4</sup>

### **Suspected uterine rupture**

Consequences of uterine rupture:

- There have been no reported maternal deaths due to uterine rupture
- Overall, 14 percent to 33 percent of women will need a hysterectomy when the uterus ruptures
- Approximately 6 percent of uterine ruptures will result in perinatal death
- This is an overall risk of intrapartum fetal death of 20 per 100,000 women undergoing trial of labor after previous cesarean section
- "For term pregnancies, the reported risk of fetal death with uterine rupture is less than 3 percent. Although the risk is similarly low, there is insufficient evidence to quantify the neonatal morbidity directly related to uterine rupture."<sup>5</sup>

### **Prolapsed cord or cord presentation**

Prolapsed cord is a term describing a cord that is passing through the cervix at the same time or in advance of the fetal presenting part. This occurs in approximately 1.4-6.2 per 1000 of pregnancies. Although uncommon, it is considered a true obstetrical

<sup>1</sup> Pregnancy and substance abuse, G. Fischer, M. Bitschnau, A. Peternell, H. Eder, A. Topitz. Archives of Women's Mental Health. August 1999, Volume 2, Issue 2, pp 57-65.

<sup>2</sup> Casper, Tammy, and Megan W. Arbour. "Identification of the Pregnant Woman Who Is Using Drugs: Implications for Perinatal and Neonatal Care." Journal of Midwifery & Women's Health (2013).

<sup>3</sup> Lerner, Jodi P. "Fetal growth and well-being." Obstetrics and gynecology clinics of north America 31.1 (2004): 159-176.

<sup>4</sup> Frye, Anne, Holistic Midwifery, Volume I, Labrys Press, Portland, OR, 2006, p. 990

<sup>5</sup> Guise, Jeanne-Marie, et al. "Vaginal birth after cesarean: new insights." (2010).

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emergency most often necessitating a caesarean delivery. Prolapsed cord is associated with other complications of pregnancy and delivery as well.

Fetal risks:

- Hypoxia
- Stillbirth/death

### **Suspected complete or partial placental abruption**

Placental abruption results from a cascade of pathophysiologic processes ultimately leading to the separation of the placenta prior to delivery. Pregnancies complicated by abruption result in increased frequency<sup>6</sup> of:

- Low birth weight
- Preterm delivery
- Stillbirth
- Perinatal death

### **Suspected placental previa**

Pregnancies complicated with placenta previa had significantly higher rates<sup>7</sup> of

- Second-trimester bleeding
- Pathological presentations
- Placental abruption
- Congenital malformations
- Perinatal mortality
- Cesarean delivery
- Apgar scores at 5 minutes lower than 7
- Placenta accreta
- Postpartum hemorrhage
- Postpartum anemia
- Delayed maternal and infant discharge from the hospital

### **Suspected chorioamnionitis**

Chorioamnionitis is a potentially serious complication:<sup>8</sup>

- Chorioamnionitis is a major risk factor in the event of preterm birth, especially at earlier gestational ages, contributing to prematurity-associated mortality and morbidity
- Increased susceptibility of the lung for postnatal injury, which predisposes for bronchopulmonary dysplasia.

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<sup>6</sup> Ananth, Cande V., et al. "Placental abruption and adverse perinatal outcomes." *JAMA: the journal of the American Medical Association* 282.17 (1999): 1646-1651.

<sup>7</sup> Sheiner, E., et al. "Placenta previa: obstetric risk factors and pregnancy outcome." *Journal of Maternal-Fetal and Neonatal Medicine* 10.6 (2001): 414-419.

<sup>8</sup> Thomas, Wolfgang, and Christian P. Speer. "Chorioamnionitis: important risk factor or innocent bystander for neonatal outcome?." *Neonatology* 99.3 (2010): 177-187.

- Chorioamnionitis is associated with cystic periventricular leukomalacia, intraventricular hemorrhage and cerebral palsy in preterm infants
- Prenatal inflammation/infection has been shown a risk factor for neonatal sepsis

### **Pre-eclampsia/eclampsia**

Complications of preeclampsia include:

- Eclampsia
- HELLP (hemolysis, elevated liver enzymes, low platelets) syndrome
- Liver rupture
- Pulmonary edema
- Renal failure
- Disseminated intravascular coagulopathy (DIC)
- Hypertensive emergency
- Hypertensive encephalopathy
- Cortical blindness

Maternal complications occur in up to 70% of women with eclampsia and include:<sup>9</sup>

- DIC
- Acute renal failure
- Hepatocellular injury
- Liver rupture
- Intracerebral hemorrhage
- Cardiopulmonary arrest
- Aspiration pneumonitis
- Acute pulmonary edema
- Postpartum hemorrhage
- Maternal death rates of 0-13.9% have been reported

Fetal complications in preeclampsia are directly related to gestational age and the severity of maternal disease and include increased rates of:<sup>10</sup>

- Preterm delivery
- Intrauterine growth restriction
- Placental abruption
- Perinatal death

### **Thick meconium stained amniotic fluid without reassuring fetal heart tones and birth is not imminent**

Meconium staining of the amniotic fluid is a common occurrence during labor. Although a large proportion of these pregnancies will have a normal neonatal outcome, its presence may be an indicator of fetal hypoxia and has been linked to the development of:<sup>11</sup>

<sup>9</sup> Norwitz, Errol R., Chaur-Dong Hsu, and John T. Repke. "Acute complications of preeclampsia." *Clinical obstetrics and gynecology* 45.2 (2002): 308-329.

<sup>10</sup> de Souza Rugolo, Ligia Maria Suppo, Maria Regina Bentlin, and Cleide Enoir Petean Trindade. "Preeclampsia: effect on the fetus and newborn." *Neoreviews* 12.4 (2011): e198-e206.

- Cerebral palsy
- Seizures
- Meconium aspiration syndrome

#### **Abnormal auscultated fetal heart rate pattern unresponsive to treatment or inability to auscultate fetal heart tones**

Sustained abnormal fetal heart rate patterns include bradycardia (abnormally low heart rate) and decelerations in the baby's heart rate. Additionally, tachycardia (abnormally high heart rate) is abnormal, and can also be an indication for the need for further evaluation. Historically, a 30-minute rule from decision-to-incision time for emergent cesarean delivery in the setting of abnormal FHR pattern has existed; however, the scientific evidence to support this threshold is lacking.

#### **Excessive vomiting, dehydration, or exhaustion unresponsive to treatment**

- Sufficient fluid intake during labor may prevent hemoconcentration, starvation, and activation of the thrombogenic and fibrinolytic system<sup>12</sup>
- With extreme exhaustion, the chances of fetal distress and non-progressive labor are greatly increased
- Bleeding during or after the placental birth, followed by shock, are much more likely to occur when the woman and her uterus are exhausted<sup>13</sup>
- Maternal exhaustion is diagnosed with a combination of ketonuria, elevated temperature, and elevated pulse. This condition is also known as ketoacidosis, in that the mother's blood becomes abnormally acidic and less able to carry oxygen. Unless this condition is reversed, fetal distress will result<sup>14</sup>

#### **Blood pressure greater than 140/90 which persists or rises and birth is not imminent**

Women with chronic hypertension are at increased risk of:<sup>15</sup>

- Superimposed preeclampsia (25% risk)
- Preterm delivery
- Fetal growth restriction or demise
- Placental abruption
- Congestive heart failure
- Acute renal failure
- Seizures
- Stroke
- Death

#### **Maternal fever equal to or greater than 100.4°**

Fever can indicate infection. Fever in labor is associated with:<sup>16</sup>

<sup>11</sup> Rahman, Shimma, Jeffrey Unsworth, and Sarah Vause. "Meconium in labour." *Obstetrics, Gynaecology & Reproductive Medicine* 23.8 (2013): 247-252.

<sup>12</sup> Watanabe, Takashi, et al. "Effect of labor on maternal dehydration, starvation, coagulation, and fibrinolysis." *Journal of perinatal medicine* 29.6 (2001): 528-534.

<sup>13</sup> Frye, Anne, *Holistic Midwifery, Volume II*, Labrys Press, Portland, OR, 2004, p. 1055.

<sup>14</sup> Davis, Elizabeth, *Heart and Hands: A Midwife's Guide to Pregnancy and Birth*, Celestial Arts, New York, NY, 2004, p. 141.

<sup>15</sup> Hypertension. 2003; 41: 437-445 Published online before print February 10, 2003, doi: 10.1161/01.HYP.0000054981.03589.E9

- Early neonatal and infant death
- Hypoxia
- Infection-related death. These associations were stronger among term than preterm infants
- Meconium aspiration syndrome
- Hyaline membrane disease
- Neonatal seizures
- Assisted ventilation

**Labor or premature rupture of membrane (PROM) less than 37 weeks according to due date**

Premature rupture of membranes before 37 weeks' gestation (and where there is at least an hour between membrane rupture and the onset of contractions and labor) can have consequences for both the mother and the baby:

Risks to Baby:

- Neurologic injury
- Infection
- Respiratory Distress
- Death
- Increased need for neonatal intensive care services

Maternal Risks:

- Infection
- Prolonged Labor
- C-Section
- Death

Because the out-of-hospital birth setting does not provide for immediate access to medications, surgery, and consultation with a physician, there may be increased risks to mother and/or baby if any of these conditions present during the birth. In some communities, the lack of availability of a seamless, cooperative hospital transfer process adds additional risk during intrapartum transfer.

I understand that the intrapartum risks may not be apparent until labor, and my opportunity for referral to a physician, should I choose that, would be limited to hospital transfer and transfer of care to the physician on call at that facility.

I have received and read this document, discussed it with my midwife, and my midwife has answered my questions to my satisfaction.

Client \_\_\_\_\_

Date \_\_\_\_\_

Midwife \_\_\_\_\_

Date \_\_\_\_\_

<sup>16</sup> PETROVA, Anna, et al. "Association of maternal fever during labor with neonatal and infant morbidity and mortality." *Obstetrics and gynecology* 98.1 (2001): 20-27.

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