Module 15

Basic Labour and Delivery in the Nursing Station

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CANADIAN HEALTH CARE AGENCY
EXPERIENCE THE NORTH

- Be able to safely manage a low risk pregnancy
- Determine the stage of labour and what nursing interventions are required
- Determine when further intervention is required for both maternal and fetal health
- Cultural awareness through the antepartum, intrapartum, postpartum period

Learning Objectives

Nuchal cord – when the baby is delivered with it's cord wrapped around its neck

Anorectum – located just through the anal sphincter

Tachysystole – greater than 5 contractions in 10 minutes seen over a 30 minute period

Effacement – the thinning of the cervix during the labour progress

Primip – a mothers first pregnancy

Multip – a mother who is in her second plus pregnancy

***Foetus** – describes a baby this is undelivered

***Newborn** – describes a baby in the initial 28 days of age

Episiotomy – incision of the perineum made by the physician to deliver a baby

Terminology

- Bleeding in Pregnancy
- Spontaneous Abortion/Miscarriage
- Antepartum Hemorrhage
- Ectopic Pregnancy
- Hydatidiform Mole – Molar Pregnancy
- Postpartum Hemorrhage
- Premature Rupture of Membranes
- Preterm Labour
- Severe Hypertension, Severe Preeclampsia and Eclampsia

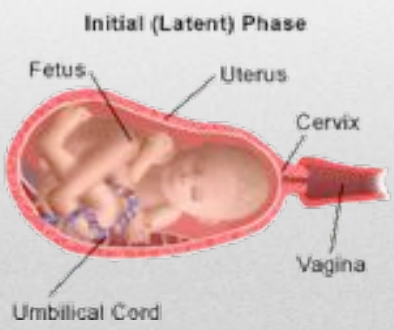
Obstetric Emergencies

KNOWLEDGE of:	SKILL in	JUDGEMENT Regarding:	ATTITUDE that:
The natural birth process and when its progress is outside of the normal parameters with potential risks or harm to the mother or fetus	-Fetal assessment -Cervical assessment -Determining the appropriate stage of labour and required nursing actions	Maternal and fetal wellbeing	The birthing process is a naturally occurring phenomenon requiring support and guidance in a majority of cases and our expertise and skills in the rest.

Definition: From the onset of labour to full dilation of the cervix (10cm)

First Stage- Latent

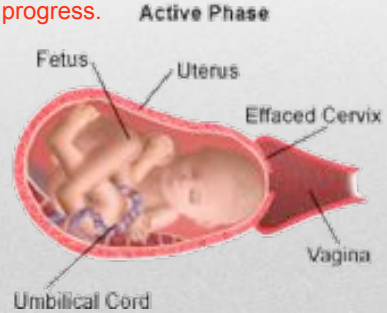
- Irregular contractions become progressively better coordinated
- Discomfort is minimal
- Cervix effaces and dilates to 4 cm



First Stage- Active

- Cervix becomes fully dilated (10 cm)
- Presenting part descends well into the mid-pelvis

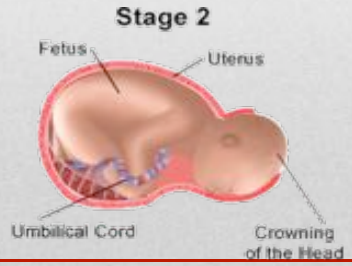
Pelvic examinations are done every 2-3 hours to evaluate labour progress.



Stages of Labour – First stage

Definition: From full cervical dilation (10 cm) to delivery of the fetus

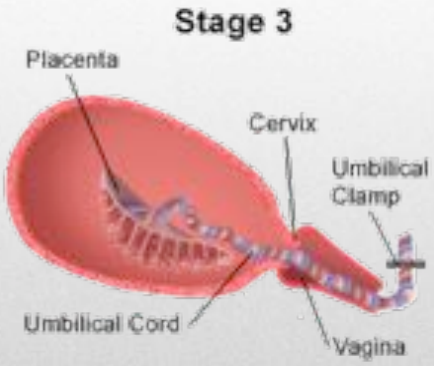
- On average, lasts 2 hrs in nulliparous, 1 hr in multiparas
- It may last another hour or more if conduction analgesia or intense opioid is used (ex. Epidural)
- For spontaneous deliveries, women must supplement uterine contractions by *expulsively bearing down*.
- Women should be attended constantly
- Fetal heart sound should be checked continuously or after every contraction
- Contractions may be monitored by palpation or electronically



Stages of Labour – Second Stage

Definition: Begins after delivery of infant and ends with the delivery of the placenta

- Contractions present until the delivery of the placenta, but much less intense
- Oxytocin IM or IV generally received with the delivery of the anterior shoulder to prevent excessive bleeding (Referred to as active management)
  - *Oxytocin 10 units IM*
  - *Oxytocin 5-10 units IV push*
  - *Oxytocin 20-40 units in 1L of normal saline infused at 100-150 mL/hour*



Stages of Labour – Third Stage

Definition: Referred to as the "Recovery and Stabilization" stage. This period begins with the delivery of the placenta and ends when the uterus no longer tends to relax

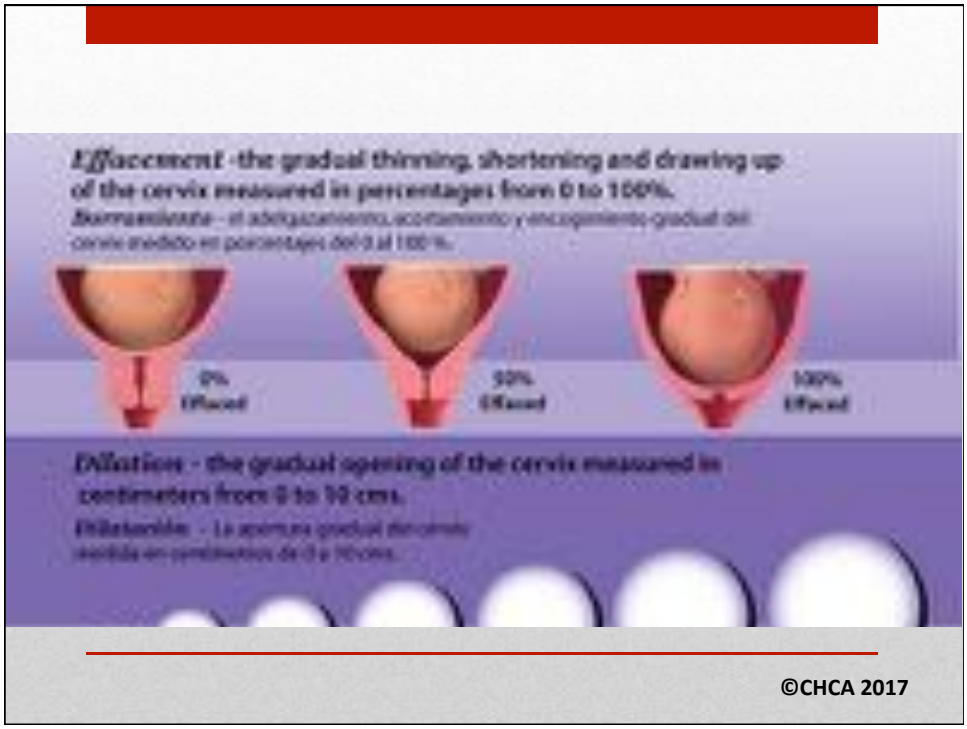
- Perineal repair of episiotomy or lacerations
- Head to toe examination of the newborn
- Baby received medication
  - *Vitamin K 0.5mg IM if less than 1500g and 1.0mg IM if more than 1500g – Preventing haemorrhagic disease of the newborn*
  - *Erythromycin 1cm strip of gel in each bottom eyelid – Preventing bacterial infections that the newborn is subjected to during vaginal delivery*

Stages of Labour – Fourth Stage

Steps:

1. Using the first two fingers on your dominant hand your going to insert them into the vaginal canal to feel for the cervix which will be located roughly the depth of your fingers towards the uterus
2. Once you have located the cervix place one finger at each edge and try to picture how far apart they are in centimeters
3. Note the thickness of the cervix which you will chart as effacement
4. Note where the head or presenting part is located in relation to the pubic bone and this will determine the baby's station

Cervical Assessment



Methods

Intermittent auscultation

1. Determine fetal presentation and position
2. Place Doppler over maternal abdomen where the fetal back is located
3. Palpate maternal pulse to differentiate between the two
4. Listen after a contraction for a full 60 seconds
5. Chart fetal heart as a single number

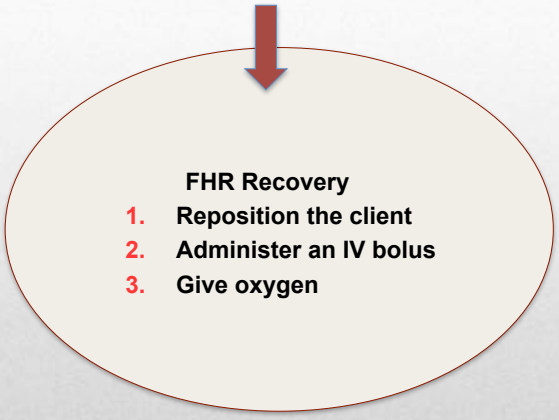
External Fetal Monitor

1. Determine fetal presentation and position to aid in placement
2. Apply monitor to obtain a tracing of the fetal heart rate (FHR) and contraction pattern
3. Determine uterine activity
4. Determine baseline FHR
5. Determine FHR variability
6. Note any accelerations
7. Note periodic or episodic decelerations
8. Note any trends over time
9. Classify the tracing as normal, atypical, or abnormal

Fetal Assessment

Fetal oxygenation monitored indirectly ©CHCA 2017

- Maternal drug consumption (prescribed or street drugs)
- Normal rest and activity patterns
- Hypoxemia/hypoxia/ academia/acidosis
- Hemodynamic stability of mother (dehydration)
- Gestational age: The earlier the gestation, the higher the heart rate
- Congenital anomalies



Fetal heart rate is affected by:

What to feel for:

- Intensity of contraction
- Length of contraction
- Length of resting tone
- Frequency of contractions (start of one contraction to the start of the next)

Intensity classification:

Forehead =
Strong contraction

Tip of nose =
Moderate contraction

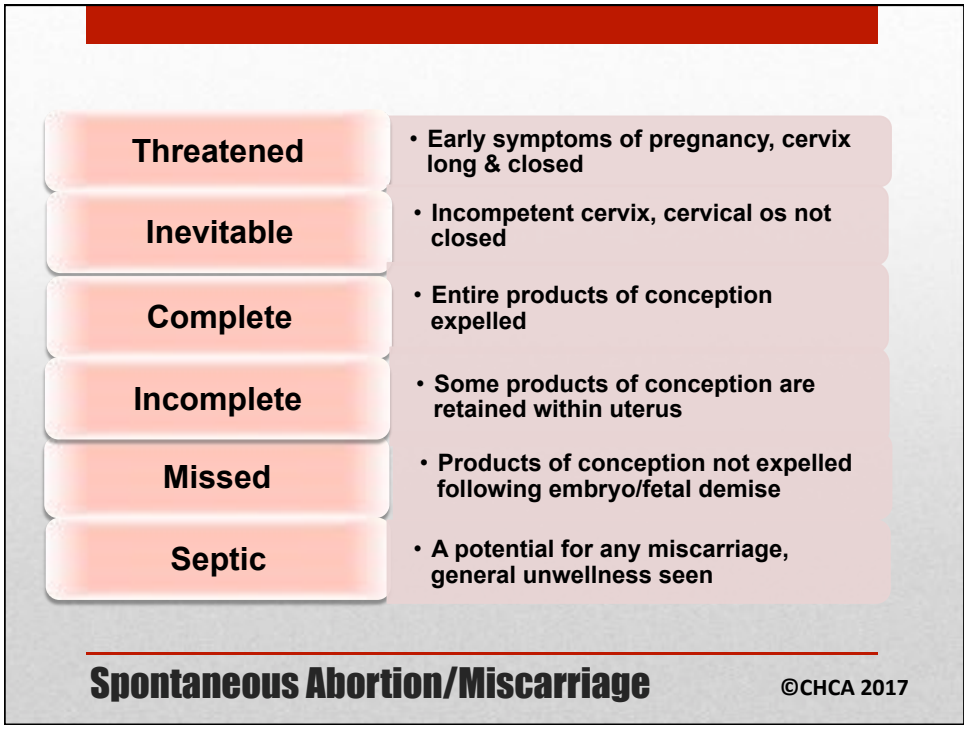
Chin =
Mild contraction

Contraction Palpation

Important Pregnancy Related Conditions

Gestational Age < 20 Weeks	Gestational Age > 20 Weeks
Implantation bleeding Delayed normal menses Cervical lesions (erosion, polyp, dysplasia) Ectopic pregnancy Spontaneous abortion (threatened, inevitable or incomplete) Missed abortion	Placenta previa Abruptio placentae Premature labour Hydatidiform mole Intrauterine death with labour History of penetrative intercourse

Bleeding in Pregnancy


Threatened
• Early symptoms of pregnancy, cervix long & closed
Inevitable
• Incompetent cervix, cervical os not closed
Complete
• Entire products of conception expelled
Incomplete
• Some products of conception are retained within uterus
Missed
• Products of conception not expelled following embryo/fetal demise
Septic
• A potential for any miscarriage, general unwellness seen
Spontaneous Abortion/Miscarriage
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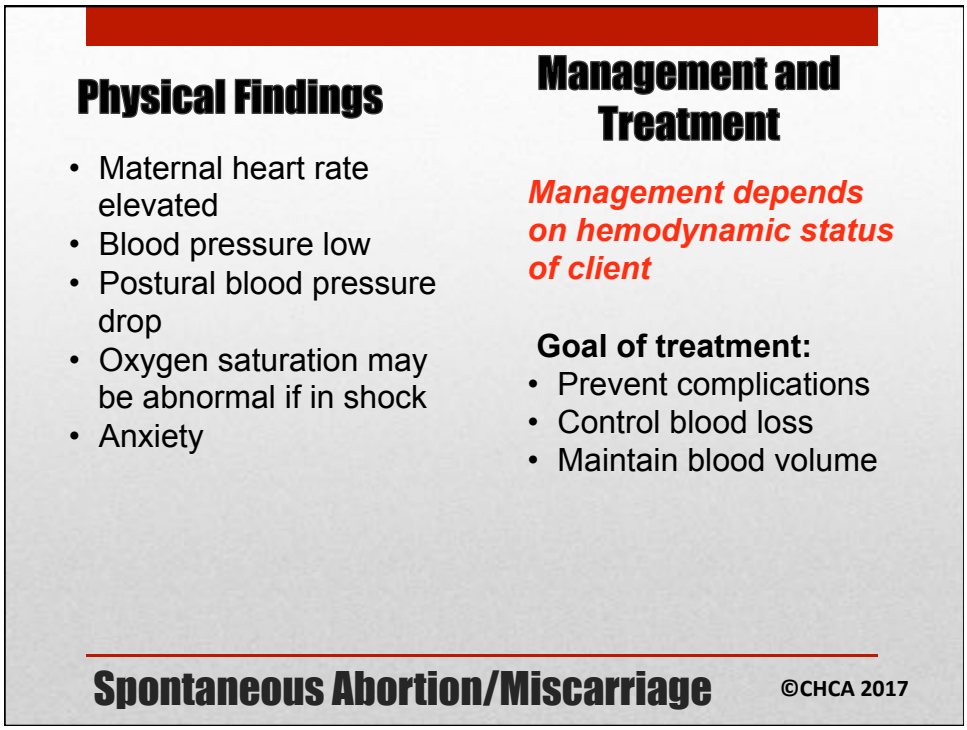

Physical Findings
• Maternal heart rate elevated
• Blood pressure low
• Postural blood pressure drop
• Oxygen saturation may be abnormal if in shock
• Anxiety
Management and Treatment
Management depends on hemodynamic status of client
Goal of treatment:
• Prevent complications
• Control blood loss
• Maintain blood volume
Spontaneous Abortion/Miscarriage
©CHCA 2017

Threatened Abortion/Miscarriage	Incomplete or Inevitable Abortion/Miscarriage
Provide emotional support Increase rest if possible Acetaminophen, 325 mg, 1-2 tabs PO q4h prn for discomfort Nothing per vagum (no tampons, douches, intercourse) Consider, in consultation with a physician, an ultrasound to locate embryonic/fetal cardiac activity and the gestational sac and to rule out ectopic pregnancy (cardiac activity predictive of continued pregnancy in > 90% of cases) Consider monitoring quantitative ß-hCG for prognosis (increase of < 66% in 48 hours predictive of abortion or ectopic pregnancy)	Provide emotional support Administer anti-D immune globulin (WinRho) to Rh-negative women, ideally within 72 hours and after consultation with a physician Discuss whether the blood product will need to be brought into the community for a specific client or if the client needs to leave the community for administration of the blood product Monitor for risk of anaphylactic reaction post administration6 Tissue visible in cervical os should be gently removed with sterile ring forceps and sponge to allow contraction of uterus; minimize manipulation to minimize risk of infection IV Ringer's lactate for fluid resuscitation if evidence of compromise Consult a physician for medical therapy. First-line therapy for bleeding from an incomplete abortion (4-12 weeks' gestation with an open os and vaginal bleeding) is usually misoprostol given orally or vaginally as a single dose or multiple doses71

Spontaneous Abortion/Miscarriage

Definition: Noted vaginal bleeding after 20 weeks gestation

Three main causes…

Abnormal Placentation

Attachment of placental villi directly to the myometrium with potentially deeper invasion into the uterine wall or surrounding organs

Placenta Previa

A placenta implanted in the lower segment of the uterus, presenting ahead of the leading pole of the fetus

Abruptio Placentae

Premature detachment of a normally situated placenta

Antepartum/ Intrapartum Haemorrhage

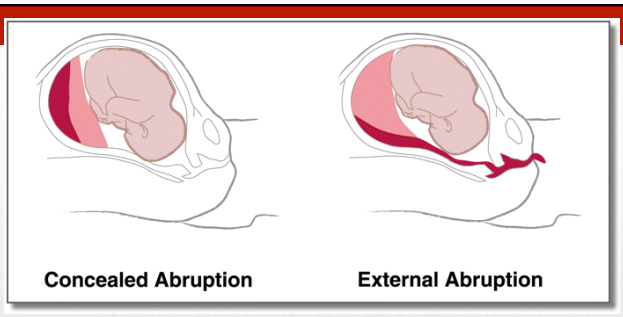
Clinical Presentation

- Vaginal bleeding typically painless, with bright red blood
- Initial bleeding is not massive
- Bleeding tends to recur, becomes heavier as the pregnancy progresses
- Uterine tone not increased
- Complete relaxation of uterus between contractions

Physical Findings

- Heart rate normal or elevated
- BP normal, low or hypotensive
- Fetal heart rate usually normal
- Mild distress to frank shock
- Bright red bleeding per vagina
- Uterus soft, normal tone, non tender

Placenta Previa



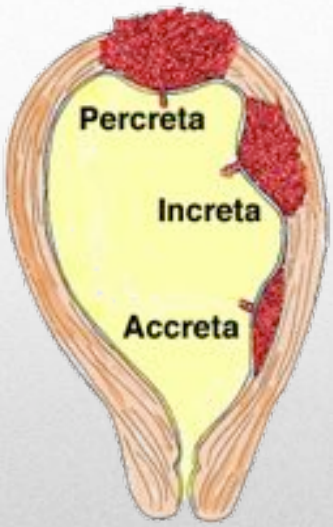
Clinical Presentation

- Vaginal bleeding in 80% of the cases, but may be concealed; Maternal hemodynamic situation may not be explained by observed blood loss
- Pain & increased uterine tone is typical
- Incomplete relaxation of uterus between contractions
- Pain increases with severity

Physical Findings

- Dependent of degree of detachment & amount of blood loss
- BP normal, low or hypotensive
- Fetal heart rate elevated, reduced or absent
- Client in acute distress
- Client may be pale or unconscious (if in shock)
- Membranes ruptured -> amniotic fluid may be bloody

Abruptio Placentae



(The aim is to diagnose prior to active labour to insure proper management)

Diagnosis

- Transabdominal Ultrasound
- Transvaginal Ultrasound
- Ultrasound Doppler
- MRI

Management

- Caesarean section delivery with likely hysterectomy 72% of the timea
- Conservative management may be attempted if further children are desired by mother and involves suturing , packing and closer observation if the physician is able to remove the placenta from the uterine lining

Abnormal Placentation

Pharmacological Intervention

- Verify Rh status; Rh negative clients must be given anti-D immune globulin ideally within 72 hours, if indicated and available
  - ***Anti-D immune globulin (WinRho), 300 µg IM***

  Can only be administered after consultation with a physician

Monitoring & Follow Up

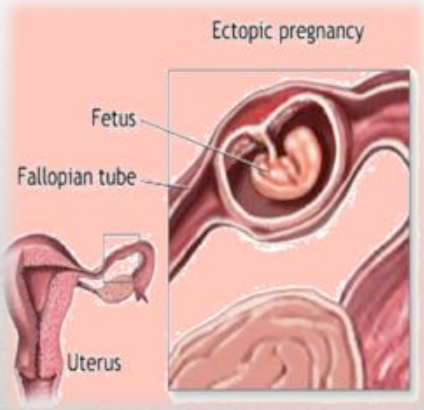
- Monitor vital signs q10-15 min if hypotension is present or vaginal bleeding continues
- Monitor fetal heart rate q15 mins
- Monitor for signs of onset of labour
- Assess stability of pre-existing medical problems

Antepartum/ Intrapartum Haemorrhage

Definition: The implantation of a fertilized ovum outside of the uterine cavity. Occurs most commonly in a fallopian tube, but may also occur in abdominal cavity, on an ovary, or in the cervix. Potentially life-threatening.

Physical Findings

- Heart rate *may* be elevated
- BP low to hypotensive (if ruptured)
- Postural blood pressure drop *may* be present as an early sign of blood loss and postural tachycardia
- Client in moderate to acute distress
- Client *may* walk carefully, slightly bent forward, holding lower abdomen
- Abdominal distension *may* be present
- Lower abdominal tenderness
- Abdominal rebound tenderness, guarding, and/or rigidity *may* be present



Ectopic Pregnancy ©CHCA 2017

If pain NOT severe & client hemodynamically stable

Management

If pain SEVERE & client is not hemodynamically stable

- Arrange an obstetrical consultation with a physician
- Refer for urgent ultrasound, in consultation with a physician

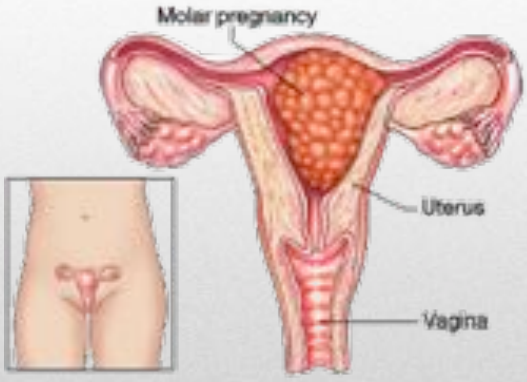
- Verify Rh status. Rh-negative clients must be given anti-D immune globulin ideally within 72 hours, if available and indicated and after consultation with a physician
- Monitor vital signs closely q5-15mins
- Monitor hourly intake and urine output
- Aim for urine output of 50 mL/hr

Ectopic Pregnancy ©CHCA 2017

Definition: A tumor composed of a mass of degenerated chorionic villi that are usually found in the uterus.

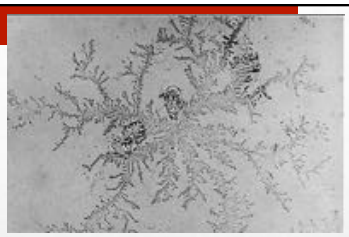
Physical Findings

- Hypertension
- Fundal height *may* be greater than expected, as expected , or smaller than expected for dates
- Examine tissues passed per vagum for presence of cysts
- Fetal parts not palpated
- Fetal heart tones absent



Hydatidiform Mole-Molar Pregnancy

Definition: Spontaneous rupture of the membranes before the onset of regular uterine contractions. Within 24 hours of PROM, 70% women will give birth; 90% of women will have given birth within 48 hours of PROM.



Causes

- **Unknown**
- Abdominal Trauma
- Incompetence of Cervix
- Polyhydramnios
- Multiple gestation
- Abnormal lie of fetus
- Placenta previa
- Viral or bacterial intrauterine infection

Diagnostic Tests

Before any physical examination, use sterile equipment if rupture of membranes is suspected

- Fern test of amniotic fluid on microscopic slide (dry mount, viewed at 10X, observe for fern-like crystals)
- Apply vaginal fluid to nitrazine paper to assess pH. It will turn blue in the presence of amniotic fluid.
- Collect vaginal/rectal swab for Group B streptococcus if not previously done
- Urinalysis, routine and microscopic
- Urine Culture

Premature Rupture of Membranes ("PROM")

Pharmacological Intervention

- ***Antibiotics –*** Discuss with a physician the need for prophylactic antibiotics
- ***Steroids –*** If transport is delayed and gestational age is less than 34 weeks, discuss with a physician the role of corticosteroids in fostering fetal lung maturation

Monitoring

- Monitor for development of labour or infection
- Monitor vital signs, including temperature, q2h
- Monitor fetal heart rate q2h if not in labour (q15 min if in labour)
- Monitor vaginal loss for foul-smelling discharge
- Monitor fundus for development of tenderness

Premature Rupture of Membranes ("PROM") ©CHCA 2017

Definition: Hypertension in pregnancy defined as a diastolic BP of ≥ 90 mmHg, based on the average of at least two measurements, taken in sitting position and using the same arm.

Pre-existing

Hypertension exists before pregnancy or appears before 20 weeks' gestation

Gestational

Hypertension appears at or after 20 weeks' gestation.

Hypertension in Pregnancy ©CHCA 2017

Pre-eclampsia

- Before 34 weeks' gestation
- Heavy proteinuria with one or more adverse conditions*

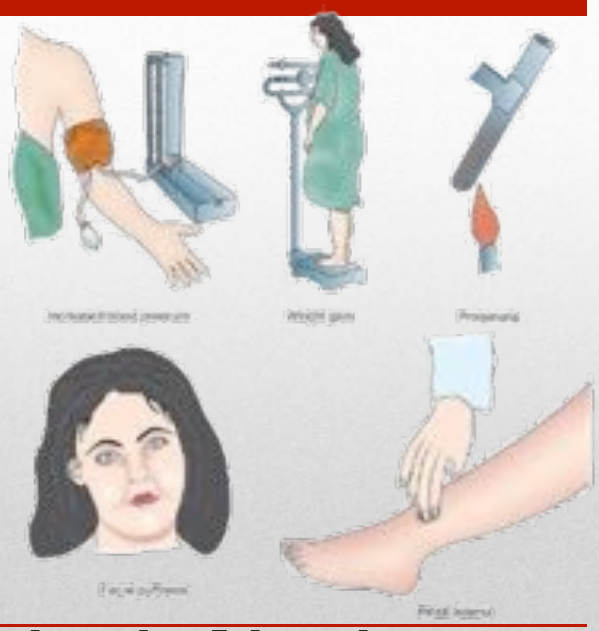
Eclampsia

- Convulsions or coma in pregnant or postpartum woman
- Convulsion may occur in stable client with mildly elevated BP in absence of excessive weight gain and/or edema

**Adverse conditions: Headache, visual disturbances, abdominal or chest pain, nausea, vomiting, pulmonary edema, elevated serum creatinine*

Severe Preeclampsia & Eclampsia ©CHCA 2017

- Increased blood pressure
- Weight gain
- Proteinuria
- Facial Puffiness
- Pedal Edema



Severe Preeclampsia & Eclampsia ©CHCA 2017

Pharmacological Interventions

Agent and Dosage	Comments
Labetalol: Start with labetalol 20 mg IV; repeat 20-80 mg IV q30min, OR 1-2 mg/min, max 300 mg (then switch to oral)	Best avoided in women with asthma or heart failure. Neonatology should be informed, as parenteral labetalol may cause neonatal bradycardia
Hydralazine: Start with hydralazine 5 mg IV; repeat 5-10 mg IV every 30 min OR 0.5-10 mg/hr IV, to a maximum of 20 mg IV (or 30 mg IM)	May increase the risk of maternal hypotension

Common Interventions:

- **Anti-hypertensive Therapy**
- **Anti-seizure Therapy**
- **Thromboprophylaxis**
- **Steroids**

Severe Preeclampsia & Eclampsia ©CHCA 2017

Pharmacological Interventions con't

Antiseizure Therapy: Used for those with severe preeclampsia and eclampsia

- *Magnesium Sulfate – loading dose then infusion.*
  - ***Antidote: Calcium gluconate***

Thromboprophylaxis: For those women prescribed bed rest; discuss with doctor

Steroids: Discuss with physician: if transport is delayed and gestational age is less than 34 weeks; ? Role of fostering fetal lung maturation

Severe Preeclampsia & Eclampsia ©CHCA 2017

Both conditions can cause seizures. If a seizure occurs, remember the following:

- SUCTION nasopharynx prn
- Administer OXYGEN
- POSITION client on her side and cushion appropriately
- RECORD length and type of seizure
- After seizure, ASSESS for uterine contractions, vaginal bleeding, uterine tenderness, abdominal pain and fetal heart rate
- DISCUSS the use of additional seizure medications with physician
- In case of prolonged seizure, consideration should be given to INTUBATION by qualified care provider

Severe Preeclampsia & Eclampsia

Key Questions Upon Arrival

1. When are you due?
2. Are your membranes ruptured and if so what colour is the liquid?
3. How many babies is this for you and how did you deliver your previous children?
4. Any health concerns prior to pregnancy?
5. Any health concerns during your pregnancy?
6. Do you know your blood type?
7. Do you know your GBS status?

Key Signs of Imminent Birth

- Bloody show
- Upon examination bulging perineum, separating labia, excretion of stool
- Presenting part crowning
- Uncontrolled pushing or bearing down
- Woman saying that the “baby is coming”

Risks of Imminent Birth

- Postpartum Hemorrhage
- Perineal damage
- Harm to the newborn

Imminent Births

Physical Findings

- Monitor fetal heart rate
- Fetal heart rate 120-140 bpm
- Bloody show, mucus may be present

Physical examination:

- Assessment of frequency, strength and duration of contraction
- Assessment of fetal lie and presentation using Leopold's maneuvers
- Performing vaginal examination using aseptic technique: Assessing dilation of cervix and fetal presentation, station and flexion if possible

Diagnostic Tests

- Urinalysis: Routine and microscopy; Measure for glucose and proteinuria
- Measure hemoglobin if no baseline is available

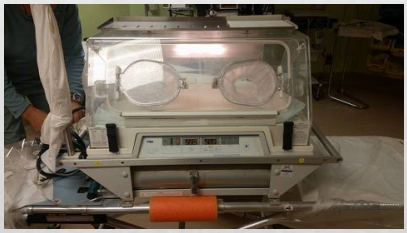
Management

Management depends on how imminent the delivery is.

Delivery in the Nursing Station ©CHCA 2017

Nursing Actions

- STAY CALM – CALL THE MD ON CALL (Speakerphone)
- Get the mother settled into the birthing room
- Call in other nurses
- Collect as much key information as possible either from Antenatal Records or the client
- Get emergency delivery kit or available instruments for delivery, warm up baby warmer and incubator.
- Collect required blood work
- Notify delivering practitioner if available
- As time allows, determine fetal wellbeing



Delivery in the Nursing Station ©CHCA 2017

If the delivery is imminent, prepare delivery equipment, resuscitation equipment, and oxytocin

Care during delivery:

- Work with woman to control delivery of fetal head (ie. breathing through contractions)
- Support perineum to prevent tears
- Once the head is delivered slide your fingers while cupping the newborns head around its neck and shoulders to determine if its cord is wrapped around its neck.
- Gently guide shoulder closest to the symphysis pubis towards it. The posterior shoulder is then curved towards the woman's buttocks
- DO NOT PULL ON BABY, DO NOT RUSH
- Once shoulders are delivered, the rest of the body will deliver with a gentle push from the woman
- Oxytocin (10 units) IM is preferred route for the prevention of PPH in low-risk vaginal deliveries

Care after Delivery:

- Ensure baby is breathing
- Keep baby warm
- If umbilical cord long enough, woman can hold her baby
- After cord stops pulsing, clamp cord in two places and ***cut between clamps***
- Draw arterial and venous blood samples to determine gases and blood type of the baby
- Assign APGAR scores at 1 & 5 minutes

Delivery in the Nursing Station ©CHCA 2017

APGAR Scoring Chart

Assessment Parameters	0	1	2
A- Appearance	Blue or pale	Body pink, extremities blue	Entirely pink
P- Pulse	Absent	< 100	> 100
G- Grimace (Reflex irritability)	Absent	Grimace	Cough, cry or sneeze
A- Activity	Limp	Some extremity flexion	Active motion
R- Respiration	Absent	Weak cry, hypoventilation	Strong cry

Delivery in the Nursing Station ©CHCA 2017

Delivery of the placental and immediate post-partum period

Delivery of placenta:

*This can take up to **1 hour**. **DO NOT** pull on the cord to hasten placental delivery*

Signs of placental separation from uterine wall:

- Woman may feel another contraction & urge to push
- Cord may lengthen
- Gush of blood may occur

Once placenta has separated:

- Place one hand on abdomen, just above symphysis pubis to hold uterus
- Apply gentle traction on cord with other hand
- Ask the woman to push with a contraction to deliver placenta
- Examine placenta and membranes
- ***Place placenta in container; Sent for examination***

After Delivery of placenta:

Massage uterus to ensure it is firm

- Gently but thoroughly examine perineum and vaginal channel for tears.

Post-partum monitoring of newborn:

- Conduct newborn exam
- Apply topical antibiotic ointment to the palpebral conjunctiva of each eye:
  - ***Erythromycin, 0.5% eye ointment, 1cm, single dose***
- Administer vitamin K to newborn's thigh within the first 6 hours of birth:
  - ***Vit. K., 1mg, IM, single dose***

Delivery in the Nursing Station ©CHCA 2017

Labour Complications ©CHCA 2017

Definition: Prolonged head-to-body delivery interval (>60s) due to fetal ant shoulder impacting the maternal pubic symphysis, ultimately preventing passage

Diagnosis

- ***Turtle Sign:*** Appearance and retraction of the fetal head
- ***Erythematous puffy face:*** Facial flushing occurs due to the shoulder impaction with the maternal pelvis

Risk Factors

Maternal Risk Factors:

- Abnormal pelvic anatomy
- Gestational diabetes
- Previous shoulder dystocia
- Short stature

Fetal Risk Factors:

- Macrosomia (obesity, multiparity, DM, post-dates pregnancy

Labour Risks:

- Assisted vaginal delivery
- Prolonged active phase of the first stage of labour
- Precipitous or protracted second stage labour

Shoulder Dystocia

Management

"ALARMER"

Apply suprapubic pressure & Ask for help

Legs - Hyper flex legs (Mc Roberts)

Anterior shoulder dysimpaction (Suprapubic pressure)

Release posterior shoulder

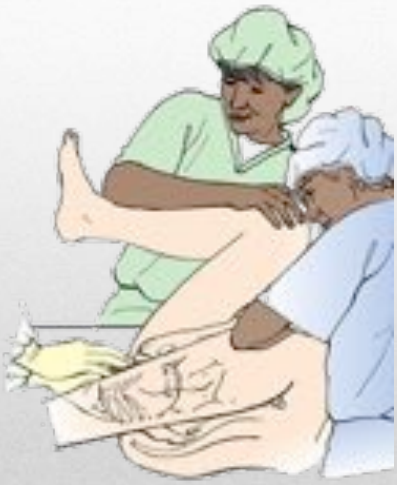
Maneuver of Internal Rotation (Rubin II, Woods)

Episiotomy

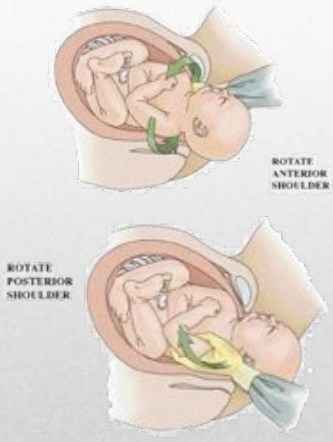
Roll onto all 4s

Shoulder Dystocia

McRobert's Maneuver



Rubin II Maneuver



Woods Corkscrew

Shoulder Dystocia

Definition: Bleeding causing hemodynamic changes within the first 24 hours after delivery

Predisposing Factors

- History of postpartum haemorrhage
- Abnormal contraction patterns (decreased tone, hyper extended uterus)
- Retained placental product
- Trauma of the genital tract (lesions)
- Coagulation abnormalities inherited or developed
- (4 T's: Tone, Tissue, Trauma, Thrombin; in regards to causes)

Diagnosis

- Placenta is not whole – pieces missing
- Excessive bleeding after placental delivery
- Tachycardia
- Tachypnea
- Hypotension
- Anxiety/agitation
- Poor capillary refill
- Cool extremities

Postpartum Haemorrhage

Pharmacological Intervention

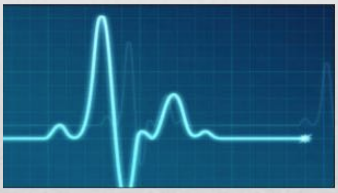
To stimulate uterine contractions:

- Oxytocin 10 units IM stat
  and/or
- 20-40 units in 250 mL of normal saline infused IV at an hourly rate of 500-1000 mL
  and/or
- Oxytocin 5 units IV push over 1-2 minutes stat

If necessary after oxytocin, a physician may also suggest *misoprostol 600-800 µg which can be administered rectally, orally, or sublingually*

Monitoring & Follow Up

- Monitor vital signs and condition frequently
- Monitor hourly intake and urine output



Postpartum Haemorrhage

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