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TO: ALL LUCAS COUNTY PARAMEDICS

FROM: Brent Parquette, NRP - Lucas County EMS
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DATE: December 3, 2013

SUBJECT: Continuing Education – January 2014

To kick the New Year off, in the month of January we will review our clinical approach to assessment and treatment for the *Obstetrical* and *Neonatal* patient. Lecture material presented will be reinforced during the "hands-on" skill stations at the end of each class. I ask that you take the time to review the LCEMS protocols related to:

- OB/GYN Emergencies
- Emergency Childbirth
- Neonatal Resuscitation

The attached pre-test will help better prepare you for the topics and skills to be covered during the month. Answers have been provided for your own self-assessment. There will be a short review period at the beginning of class.

The 2014 CE training schedule has been posted to the LCEMS website for your review. Please make note of class dates and times throughout the year.

If you have any questions or comments please feel free to contact me thru e-mail or by phone.

Happy Holidays to All of You!!

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Lucas County EMS Continuing Education – January 2014
Pre-Test

1. The leading cause of pregnancy-related maternal death is:
 - a. Abruptio Placentae
 - b. Ruptured Ectopic Pregnancy
 - c. Post-Partum Hemorrhage
 - d. Placenta Previa

2. Risk factors for Abruptio Placentae include:
 - a. Recent Trauma
 - b. Cocaine Use
 - c. Prior C-Sections
 - d. All of the above

3. You are called for abdominal pain on a 37-year-old female who states she is 30 weeks pregnant with her first child. She is complaining of sharp RUQ pain that began earlier today, and a headache she has had for the past several days. Her face appears puffy and swollen. Her vital signs are: HR-100, RR-18, B/P-150/100, PO2-96% RA. You suspect this patient may be suffering from:
 - a. Ectopic Pregnancy
 - b. Pre-Eclampsia
 - c. Migraine
 - d. Abruptio Placentae

4. En route to the hospital, your patient from question #3 states that her headache is much worse, and she is now seeing halos around the lights in the ambulance. Her face begins twitching uncontrollably, though she remains alert and oriented. Your treatment of this patient should include:
 - a. Dimming the interior lights in the ambulance; turn siren off
 - b. Administration of 2-4 GM Versed IN/ IV
 - c. Administration of 4G Magnesium Sulfate via slow IV drip
 - d. 20mL/Kg Fluid bolus
 - e. None of the above
 - f. A & C only

5. The ResQGARD can be used on pregnant patients as long as there are no absolute contraindications:
 - a. True
 - b. False

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6. Painless vaginal bleeding that occurs in late third trimester, or with the onset of labor, is likely due to:
 - a. Placenta Previa
 - b. Pre-Eclampsia
 - c. Spontaneous Abortion
 - d. Abruptio Placentae

7. A neonate should be suctioned after delivery:
 - a. Always
 - b. If their 1 minute APGAR score is < 12
 - c. If there is meconium staining present
 - d. If they were a breech delivery

8. A normal childbirth, where both mother and child are stable, requires two Life Squads; one to transport the mother, one for the child:
 - a. True
 - b. False

9. You have just delivered a neonate. After warming and drying you note the child has blue extremities, poor muscle tone, a grimaced appearance, slow breathing, and a heart rate of 80. This patient's APGAR score is:
 - a. 4
 - b. 12
 - c. 8
 - d. 0

10. Your immediate treatment for the patient in question #9 should include:
 - a. Epinephrine 0.01 mg/Kg IV/IO
 - b. 20mg/Kg fluid bolus
 - c. Drying, warming, clearing the airway if necessary
 - d. Airway suctioning followed by immediate CPR

11. _____ is the most important and effective action in Neonatal Resuscitation.
 - a. Stimulation
 - b. Ventilation
 - c. Warming
 - d. Suctioning

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12. Prior to birth, the fetus receives oxygen from:
- Amniotic Fluid
 - The Uterus
 - The Mothers Blood
 - The fetus does not require oxygen
13. The third trimester fetus does not have developed alveoli while in the womb.
- True
 - False
14. Blood is shunted away from the fetus' lungs before birth through the:
- Ductus Arteriosus
 - Aorta
 - Pulmonary Artery
 - None of the above
15. The umbilical cord normally consists of:
- 2 arteries and 2 veins
 - 1 artery and 1 vein
 - 1 artery and 2 veins
 - 2 arteries and 1 vein
16. If the neonate HR falls below _____, chest compressions must begin immediately.
- 80bpm
 - 60bpm
 - 40bpm
 - 100bpm
17. You should evaluate an APGAR score prior to beginning neonatal resuscitation.
- True
 - False
18. Preterm babies may have underdeveloped lungs and be lacking _____, making ventilation difficult.
- Alveoli
 - Blood
 - Surfactant
 - Air

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19. _____ may set in rapidly during neonatal resuscitation due to thin skin and large surface area of the neonate body.
- a. Apnea
 - b. Hypothermia
 - c. Bradycardia
 - d. Diplopia
20. Warming, positioning, drying and stimulating of the neonate should be accomplished during the first _____ seconds after delivery.
- a. 10
 - b. 20
 - c. 30
 - d. 40

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Pre-Test Answer Key

1. Correct Answer: B

Up to two-thirds of ectopic pregnancy deaths occur in the EMS or ED setting. The rupture of an ectopic pregnancy can lead to massive internal hemorrhage and death.

2. Correct Answer: D

While commonly seen due to traumatic causes, Abruptio Placentae can happen due to a variety of problems including medical (pre-eclampsia, prior c-section, multiple-pregnancies) and environmental (cocaine or tobacco use) origins.

3. Correct Answer: B

This patient would not be at risk for a ruptured ectopic pregnancy as they most commonly occur between 4-8 weeks of gestation. It's possible to have abdominal pain due to Abruptio Placentae with no vaginal bleeding; however the patients' vital signs and complaints should lead to the correct diagnosis. The presence of hypertension greater than 140/90, non-dependant edema, chronic headache, and the complaint of RUQ pain are all hallmarks of Pre-Eclampsia. (Tab 900: Section N)

4. Correct Answer: F

According to LCEMS protocols patients with Pre-Eclampsia that exhibit "Seizure or Seizure-like activity" should be given 4Gm Magnesium Sulfate. Eclampsia is often preceded by hypertension, facial twitching, and visual disturbances). It would be appropriate to give these patients Magnesium Sulfate to prevent them from going into a full-body seizure. (Tab 900: Section N)

5. Correct Answer: A

Many things are contraindicated in pregnancy however; the ResQGARD isn't one of them. Make sure the patient does not have any of the listed absolute contraindications.

6. Correct Answer: A

Placenta Previa occurs when the placenta is located partially or fully over the cervical opening. It causes vaginal bleeding that is painless. This can be a life-threatening condition for both mother and fetus, and should be treated accordingly. Placenta Previa can easily be diagnosed with regular prenatal care.

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Pre-Test Answer Key

7. Correct Answer: C

AHA recommendations changed in 2010 for care of a newborn. Airway suctioning is now only recommended in cases of meconium staining, or infants with difficulty breathing. (Tab 1100: Section L)

8. Correct Answer: B

If mother or infant are in distress after delivery it's recommended transporting each as a separate patient in their own Life Squad. If both are stable, keeping mother and infant together is recommended.

9. Correct Answer: A

Apgar is scored from 0-10

For this patient:

Blue Extremities	1
Poor Muscle Tone/Limp	0
Grimace	1
Pulse of 80	1
Slow Respiration	1
TOTAL	4

10. Correct Answer: C

The newborn has a HR of 80bpm and is centrally pink in color. The newborn requires continuous drying, warming and stimulating.

11. Correct Answer: B

Ventilation of the baby's lungs is the most important and effective action in neonatal resuscitation.

12. Correct Answer: C

While in utero, the alveoli in the lungs are filled with fluid. During this time, the fetus receives oxygen from the mother's blood.

13. Correct Answer: B

While in utero the fetus may have fully developed lungs, however, the alveoli are filled with fluid and the blood vessels are constricted.

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14. Correct Answer: A

While in utero, the fetus has an extra artery known as the Ductus Arteriosus. This artery extends from the Pulmonary Artery and shunts blood away from the fetus' lungs. After birth, this artery will normally close by itself.

15. Correct Answer: D

The normal vasculature inside of the umbilical cords includes 2 arteries and 1 vein.

16. Correct Answer: B

After birth, if the fetal HR is 60bpm or less, CPR and PPV should be administered.

17. Correct Answer: B

APGAR scores are evaluated 1 minute after birth and then every 5 minutes. APGAR scores are not needed initially if the neonate requires immediate resuscitative efforts.

18. Correct Answer: C

Surfactant is a complex naturally occurring substance made of six lipids (fats) and four proteins that is produced in the lungs. Surfactant reduces the surface tension of fluid in the lungs and helps make the small air sacs in the lungs (alveoli) more stable. This keeps them from collapsing when an individual exhales. In preparation for breathing air, fetuses begin making surfactant while still in the womb. Babies that are born very prematurely often lack adequate surfactant and must receive surfactant replacement therapy immediately after birth in order to breathe.

19. Correct Answer: B

With thin skin, a large surface body area, and little to no subcutaneous fat, Neonates are prone to rapid onset of hypothermia.

20. Correct Answer: C

Those newly born infants who do not require resuscitation can generally be identified by a rapid assessment of the following 3 characteristics:

- Term gestation?
- Crying or breathing?
- Good muscle tone?

If the answer to all 3 of these questions is "yes," the baby does not need resuscitation and should not be separated from the mother. The baby should be dried, placed skin-to-skin with the mother, and covered with dry linen to maintain temperature. Observation of breathing, activity, and color should be ongoing.