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February 17, 2012

TO: ALL LUCAS COUNTY PARAMEDICS

FROM: Brent Parquette, NREMT-P
Lucas County EMS Continuing Education Program Administrator

RE: March 2012 Continuing Education

During the month of March we will continue to review our approach to the pediatric patient as well as address the obstetrical patient. I would ask that you review the following LCEMS protocols to help better prepare you for class:

Tab 500: Medical Procedures / Equipment

- Section HH – Surgical Airways

Tab 900: Medical Emergencies

- Section M – Gynecological / Obstetrical Emergency

Tab 1100: Pediatrics

- Section H – Pediatric Head Trauma
- Section K – Pediatric Multiple Trauma
- Section L – Neonatal Resuscitation
- Section R – Pediatric Respiratory Distress

Additionally, the KING Vision video laryngoscope will be introduced during class with “hands-on” practice in skill stations. I have included a draft protocol for the KING Vision for you to review prior to class attendance.

A pre-test with answer key has been attached for you to complete before coming to class. If you have any questions or comments please feel free to contact me at 419-213-6508.

March 2012: Pediatric / OB (4.0 hours)

Date	Time	Shift
March 6, 2012 (Tues)	1800 - 2200	B
March 7, 2012 (Wed)	1300 – 1700	C
March 8, 2012 (Thurs)	0900 – 1300	A
March 13, 2012 (Tues)	1800 – 2200	C
March 14, 2012 (Wed)	1300 – 1700	A
March 15, 2012 (Thurs)	0900 – 1300	B
March 20, 2012 (Tues)	1800 - 2200	A
March 21, 2012 (Wed)	1300 – 1700	B
March 22, 2012 (Thurs)	0900 – 1300	C
March 27, 2012 (Tues)	0900 – 1300	B



Product Overview and Description

The King Vision™ Video Laryngoscope is a portable, battery operated, rigid, digital video laryngoscope system that incorporates an integrated reusable display with disposable blades designed to visualize the airway while aiding in the placement of airway devices.

Product Components

The King Vision Laryngoscope consists of two primary components:

- 1) A durable integrated reusable display
- 2) Disposable blade with a channel for tracheal tube guidance

Instructions for Use:

Important: The King Vision Display must be “OFF” before attaching a blade; otherwise, the video image will become distorted. If this happens, simply turn the Display “OFF” then back “ON”.

1. Preparing the King Vision Video Laryngoscope (the Display and Blade combination) for use

- Select the channeled blade to be used.
- Install the Display into the Blade (only goes together one way). Listen for a “click” to signify that the Display is fully engaged with the Blade. Note that the front and back of the parts are color-coded to facilitate proper orientation.
- The size #3 (Adult) Channeled blade is designed to be used with standard ETT sizes 6.0 to 8.0. No stylet is needed.
 - Lubricate the ETT, the guiding channel of the Channeled Blade and the distal tip of the Blade using a water soluble lubricant. Take care to avoid covering the imaging element of the blade with lubricant.
 - The ETT may be preloaded into the guiding channel with its distal tip aligned with the end of the channel. Note that the ETT tip should not be evident on the screen when loaded properly. Alternatively, the ETT can be inserted into the channel after the blade has been inserted into the mouth and the vocal cords have been visualized.



KING Vision Video Laryngoscopy, cont.

2. Powering On

- Press the power button on the back of the King Vision Display.
- The King Vision Display should turn "ON" immediately AND Display shows a moving image.
- Confirm the imaging of the King Vision is working properly.

IMPORTANT: If the LED Battery indicator light in the upper left hand corner of the King Vision Display is FLASHING RED, the battery life remaining is limited and the batteries should be replaced as soon as possible.

3. Insertion of King Vision Blade into the Mouth

- Open the patient's mouth using standard technique.
- In the presence of excessive secretions/blood, suction the patient's airway prior to introducing the Blade into the mouth.
- Insert the blade into the mouth following the midline. Take care to avoid pushing the tongue toward the larynx.
- As the Blade is advanced into the oropharynx, use an anterior approach toward the base of the tongue. Watch for the epiglottis and direct the Blade tip towards the vallecula to facilitate visualization of the glottis on the Display's video screen. The King Vision Blade tip can be placed in the vallecula like a Macintosh blade or can be used to lift the epiglottis like a Miller blade. For best results, center the vocal cords in the middle of the Display's video screen.
- If the lens becomes obstructed (e.g., blood/secretions), remove the Blade from the patient's mouth and clear the lens.
- Avoid putting pressure on the teeth with the King Vision Video Laryngoscope.

4. ETT Insertion

- After you can see the vocal cords in the center of the King Vision Display, advance the ETT slowly and watch for the cuff to pass through the vocal cords. Note that minor manipulation of the blade may be needed to align the ETT tip with the vocal cords.



KING Vision Video Laryngoscopy, cont.

User Tips for ETT Advancement into the Trachea

The most common issue associated with ETT placement with any video laryngoscope is that the blade tip has been advanced too far; there may be a good close-up image of the vocal cords, but the ETT cannot be advanced because the blade/camera is obstructing ETT passage. To address this:

- a. Place the Blade tip in the vallecula or,
- b. If too close to the vocal cords, withdraw the Blade slightly and gently lift in an anterior direction prior to attempting to advance the ETT

5. Blade Removal

- Stabilize/hold the ETT laterally and remove the King Vision Video Laryngoscope from the mouth by rotating the handle toward the patient's chest. As the blade exits the mouth, the ETT should easily separate from the flexible lateral opening of the channel.
- Turn off Display by pressing and holding the POWER button.

6. Separation and Disposal of the King Vision Parts after use

- After the procedure is complete, separate the King Vision Display from the Blade. Dispose of the Blade and clean/disinfect the Display.
- **NOTE: Do not dispose of the King Vision Display!**

Cleaning and Disinfecting of the Reusable King Vision Display

CAUTION:

- **Do not submerge the KING Vision Display in any liquid as this can damage the Display.**

The King Vision Display is designed for easy cleaning and disinfection. The surfaces of the Display are specifically designed to allow proper cleaning without the need for any specialized equipment or supplies.

The KING Vision Display is intended to have minimal direct patient contact during normal use.



KING Vision Video Laryngoscopy, cont

Cleaning / Disinfection Steps

If the Display is visibly soiled or contamination is suspected, follow the cleaning steps outlined below:

- To prevent liquid from entering the King Vision Display, orient the device with the video screen above the battery compartment (upright/vertical orientation).
- Prepare a mild soap/disinfecting solution. Clean the entire outer surface of the Display with the cleaning solution. A cotton swab may be used to clean the crevices of the purple sealing gasket and the ON/OFF button. Take care to avoid getting fluid inside the opening at the bottom of the battery compartment where the electrical connection is located.
- Remove the battery cover and clean the outer edge on either side of the battery compartment with a cotton swab, taking care to avoid the batteries and their contacts. Clean the battery cover.
- After cleaning, remove any residue with a damp wipe or gauze.
- Use a dry wipe/gauze to remove water or allow the device to air dry.
- Replace battery cover.
- Store the King Vision Display in the supplied storage case or other similar pouch, bag or tray to protect from the environment until it is used again.

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OB / Pediatric Emergencies Pre-Test

1. During assessment of the pediatric patient, which sign is the earliest indicator of compensated shock?
 - a. Tachypnea with retractions
 - b. Low blood pressure
 - c. Mottled skin
 - d. Tachycardia

2. What is the **most serious** complication of a seizure?
 - a. Hypoxia
 - b. Muscle fatigue
 - c. Hypoglycemia
 - d. Cardiac dysrhythmias

3. A 3-year-old boy is unresponsive and actively seizing. His skin is pale and warm. The first step in caring for this patient is to:
 - a. Administer diazepam rectally.
 - b. Position the head to open the airway.
 - c. Obtain blood glucose.
 - d. Obtain IV access.

4. In which of the following scenarios is patient information from the caregiver inconsistent with the injury found?
 - a. A 9-month-old infant with a hematoma on the head from falling out of a highchair.
 - b. A 2-year-old boy with several small, healing circular burns from running into a lit cigarette.
 - c. A 2 ½-year-old girl with a facial laceration from pulling a toaster down off a counter.
 - d. A 4-year-old boy with a wrist deformity from falling off a swing.

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5. Which of the following would be the most appropriate method for assessing a newborn's heart rate?
 - a. Palpating a radial pulse
 - b. Auscultating an umbilical pulse
 - c. Palpating a carotid pulse
 - d. Auscultating an apical pulse

6. What is the best way to obtain information about the medical history of a 6-year-old girl who is on a ventilator and has a tracheostomy?
 - a. Ask the caregivers.
 - b. Contact her home health agency.
 - c. Contact the hospital where she is usually admitted.
 - d. Contact her physician.

7. Which of the following steps is most appropriate when immobilizing a child?
 - a. Apply a cervical collar and help the child sit up if respiratory distress develops.
 - b. Pad the backboard from the shoulders to the hips if the head is flexed when the patient is lying flat.
 - c. Secure the body straps across the shoulders, abdomen, and below the knees if the patient is active.
 - d. Place a pillow under the patient's head to pad the backboard and minimize discomfort.

8. A 19-year-old female is complaining of severe left shoulder pain. She is cold, pale, clammy, and apprehensive. There is minimal pink vaginal discharge. You would suspect:
 - a. Pelvic inflammatory disease
 - b. Ruptured ectopic pregnancy
 - c. Dysmenorrhea (Difficult, painful menstrual period)
 - d. Amenorrhea (Loss of / absent menstrual period)

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9. You are called to a shopping mall to care for a 17-year-old patient who states she is 8 months pregnant. She complains of dizziness and a severe headache. Vital signs are: pulse 80, respirations 14, BP 162/98. Her rings appear to be impairing her circulation and you offer to take them off. As you are assisting her, she becomes unresponsive and exhibits tonic-clonic movements. You suspect:
- a. Eclampsia
 - b. Idiopathic epilepsy
 - c. Pregnancy-induced hypertension
 - d. Supine hypertensive syndrome
10. You have found it necessary to complete delivery at the scene. When the baby's head emerges, you notice that the cord is wrapped around the neck. You would:
- a. Quickly place two umbilical claps/ties and cut between them
 - b. Immediately begin transportation to the closest hospital
 - c. Gently loosen the cord and pull it over the baby's head
 - d. Carefully push the head upward and transport the patient
11. If difficulties arise during delivery of a neonate's upper shoulder, you can facilitate delivery by gently:
- a. Pulling on the shoulders
 - b. Guiding the head upward
 - c. Guiding the head downward
 - d. Pushing the head backward
12. When the head of the baby begins to push out of the vagina during a contraction, you should:
- a. Encourage the woman to breathe deeply and slowly
 - b. Gently pull the vagina open from both sides to allow passage of the baby
 - c. Apply gentle pressure to the baby's head, using the palm of your hand
 - d. Slide your finger past the baby's head and check for the possibility of the umbilical cord around the baby's neck

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13. You find it necessary to complete delivery of a 25-year-old multipara at home. As baby's head emerges, you note that the membranes remain intact. Management of this situation requires you to:
- a. Support the baby's head and transport in this position
 - b. Use a scalpel to peel the membranes as the baby emerges
 - c. Remove the cord from the baby's neck without disturbing the membranes
 - d. Puncture the membranes as soon as the head is delivered and remove the baby's face
14. The completion of the third stage of labor is marked by the:
- a. Dilation of the cervix
 - b. Birth of the baby
 - c. Expulsion of the placenta
 - d. Cutting of the umbilical cord
15. Mrs. Brown describes her labor as contractions lasting 40 seconds, every 5 minutes. The additional information that you should obtain to decide if immediate transportation to the hospital is appropriate includes:
- a. Examination for crowning
 - b. Date of last menstrual period
 - c. Internal Examination
 - d. All of the above
16. The pre-hospital treatment for abortion may include all **but** which of the following:
- a. Oxygen
 - b. IV Line
 - c. Transport
 - d. Vaginal Examination

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17. Mrs. Smith has delivered breech. The baby's head has not yet delivered, and 5 minutes have elapsed. You should:
- a. Gently pull the baby out
 - b. Elevate the mother's head
 - c. Transport immediately
 - d. Insert a gloved hand into the mother's vaginal opening and form a 'V' over the baby's nose with your fingers, pushing the vaginal wall tissue away from the baby's face.
18. The umbilical cord contains:
- a. One artery and one vein
 - b. Two arteries and two veins
 - c. One artery and two veins
 - d. Two arteries and one vein
19. Your patient is a 26-year-old 30-weeks-pregnant patient who complains of severe, tearing abdominal pain and some minor vaginal bleeding. Upon palpation, her abdomen is very tender, and her uterus seems to be tightly contracted. Fetal heart tones are absent. She is multigravida, but nullipara. You should suspect:
- a. Abruptio placenta
 - b. Placenta previa
 - c. Miscarriage
 - d. Ectopic pregnancy
20. Which of the following statements is true regarding vital sign changes in the pregnant woman?
- a. The blood pressure rises and the pulse rate falls
 - b. The blood pressure falls and the pulse rate rises
 - c. The blood pressure and the pulse rate rise
 - d. The blood pressure and the pulse rate fall

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21. An abortion performed to save the mother's life is termed:
- a. Elective
 - b. Incomplete
 - c. Spontaneous
 - d. Therapeutic

Questions 22 – 24 refer to the following scenario:

An 8-year-old boy fell from a tree landing on his right arm. He is crying and appears agitated. He presents with pale, warm skin and multiple abrasions on his right shoulder and hip. His right forearm is deformed. BP-92/74; P-128; RR-32.

22. What is the best approach to conducting the assessment of this patient?
- a. Telling him he must lie still or he may become paralyzed.
 - b. Exposing only those areas currently being assessed and then covering them.
 - c. Asking him if it is okay to listen to his lungs and touch his chest and stomach
 - d. Asking him what hurts the most and begin by assessing that area of the body.
23. After completing your initial assessment, the first step in caring for this patient is to:
- a. Manually stabilize the cervical spine to reduce the risk of spinal injury.
 - b. Initiate hyperventilation to reduce the accumulation of acids in the body.
 - c. Cover him with blankets to prevent heat loss.
 - d. Place him in a position of comfort to decrease anxiety.
24. What is the most likely cause for this patient's tachycardia?
- a. Secondary brain injury
 - b. Hypoxia
 - c. Pain
 - d. Hypothermia

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25. What information is **most** important to obtain about a child with smoke inhalation?
- a. Possibility of concurrent trauma
 - b. Position of the patient when found
 - c. History of recent cold symptoms
 - d. Location in the room where the patient was found
26. An 18-month-old boy reportedly fell down the stairs earlier in the day. The caregivers state that he is “just not acting right.” Assessment reveals multiple bruises on his legs / back and a deformity of his right thigh. He is alert and crying. What is the best way to interact with the caregivers?
- a. Confront them by telling them you know that this injury could not have occurred from a fall.
 - b. Ask them why they waited so long to call for help; the delay has made the child very sick; therefore, you will need to administer oxygen and establish an IV line.
 - c. Contact the local law enforcement agency to request that the caregiver be arrested while you transport the child.
 - d. Explain that you are very concerned about the child’s condition and that he needs to be examined at the hospital for a possible broken leg.
27. Ascertaining the due date of a newborn during an impending delivery helps you:
- a. Assemble the correct size of equipment to care for the baby.
 - b. Decide whether the baby will be delivered at the scene or if there is time to transport the mother to the hospital.
 - c. Decide if an on-scene delivery is needed, particularly if the infant is premature, as the labor is often shorter for these infants.
 - d. Determine if meconium aspiration may have occurred.
28. An infant less than one month old should be evaluated by a physician if your evaluation reveals:
- a. Use of abdominal muscles to breathe
 - b. Temperature of 37°C (98.6°F)
 - c. Acting fussier than usual
 - d. Refuses a pacifier

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29. When should the child's head be secured to the spine board during the immobilization procedure?
- a. After the body straps and lateral stabilization devices have been applied.
 - b. After the body straps have been applied, but before the lateral stabilization devices to ensure that the tape is applied tightly.
 - c. Before any straps or lateral stabilization devices have been applied.
 - d. If the child is quiet, the head does not need to be secured once lateral stabilization devices are applied.
30. Which of the following substances can be infused via the intraosseous needle?
- a. All medication and intravenous fluids
 - b. All medications except sodium bicarbonate and dextrose
 - c. Fluids or medication that are not acidic
 - d. Only medication and fluids that have a neutral pH

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Answer Key

1. D
2. A
3. B
4. B
5. D
6. A
7. B
8. B
9. A
10. C
11. C
12. C
13. D
14. B
15. A
16. D
17. D
18. D
19. A
20. B
21. D
22. B
23. A
24. C
25. A
26. D
27. B
28. C
29. A
30. A