



Upcoming Events

MedCenter Air Open House – (at the MedCenter Air hanger)
Aug. 5, 2010 • 4 - 6:30 pm

Triad RAC Meeting (Winston Salem, NC)
Aug. 12

Western RAC Meeting (Asheville, NC)
Aug. 13

CMC-Mint Hill Open House – Helicopter Display
Sept. 25

EM Today in Greensboro – MedCenter Air Booth
Oct. 3 - 5

Air Medical Transport Conference (Fort Lauderdale, Fla.)
Oct. 11 - 14

Needle Decompression in a Trauma Patient

A condition called pneumothorax occurs when air or gas becomes trapped in the pleural space causing part or all of a lung to collapse. When this occurs, a patient is unable to effectively ventilate, decreasing the body's oxygenation and tissue perfusion. This condition can be described as a simple or tension pneumothorax. A tension pneumothorax is a life threatening condition caused by the worsening of a simple pneumothorax and if not properly recognized and appropriate intervention taken will cause death in a trauma patient. It is essential for pre-hospital providers to recognize the signs and symptoms of both a simple pneumothorax and tension pneumothorax and intervene appropriately.

Clinical signs and symptoms of a simple pneumothorax include:

- A history of blunt or penetrating chest trauma
- Tachypnea, dyspnea
- Chest pain
- Decreased or absent breath sounds
- Hemodynamically stable
- Hypoxemia

Clinical signs and symptoms of a tension pneumothorax include:

- Hypotension (defined by N.C. OEMS protocols as a systolic blood pressure of less than 90)
- Clinical signs of shock
- And at least one additional signs:
 - Jugular vein distention
 - Absent or decreased breath sounds on the affected side
 - Hyper-resonance to percussion on affected side
 - Respiratory distress or increased resistance when ventilating an intubated patient

- Tracheal deviation away from the affected side (often a late sign)
- PEA arrest

Prehospital care includes safe and appropriate physical assessment, vital signs and pulse oximetry monitoring, IV access, supplemental oxygen and rapid transport to a care center. In cases of tension pneumothorax, chest decompression is indicated as an additional treatment.

The patient should demonstrate evidence of shock prior to a needle decompression and never based on absent breath sounds alone. The other indication for needle decompression is a patient with trauma to the chest and/or abdomen in cardiac arrest. In this instance bilateral decompressions are recommended.

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The procedure for completing needle decompression involves the placement of a needle into the second inter-costal space on the mid-clavicular line of the affected side of the patient. The needle should be 14 gauge and three inches long. The use of a shorter needle frequently results in the needle not reaching the pleura and is of no benefit.

After locating the second intercostis space, prep the site with procidone-iodine ointment or solution. Insert the catheter into the skin over the third rib and direct it just over the rip into the interspace. Advance the catheter through the parietal pleura until a "pop" is felt and air or blood exits under the pressure. Remove the needle, leaving the catheter in place and secure the catheter hub to the chest wall with dressings and tape. Consider placing a flutter valve and transport the patient to the closest appropriate center. It is important that agencies performing needle decompressions maintain a quality management program to track the procedure's success and complication rates. Practitioners review the skill annually; the crews at MedCenter Air practice and demonstrate competency on the skill semi-annually.

Needle decompression is a life saving skill, but providers must ensure patients have the appropriate symptoms to require the procedure and the proper equipment to complete the procedure. Use of this skill without evidence of tension pneumothorax may result in prolonged hospital visits, unnecessary risk and complications to patients. Please contact MedCenter Air for additional information.

EC135 Helicopter Update

MedCenter Air has successfully completed the transition to the EC135 helicopters. Thank you for your patience as we continue to learn the new aircraft. Multiple landing zone classes have been conducted and many have had the opportunity to review the new aircraft and get hands on training. As we start our hot loading process, we encourage EMS and hospital crews to follow close direction of the flight crews. MedCenter Air will continue to operate all doors and stretchers during loading processes. At no point should anyone approach the aircraft without permission. If you have questions or would like a safety course at your facility, contact 704-355-3996.

We are also looking for photographs of the new fleet in action. If we feature a photograph that you submit, we will reward you with MedCenter Air merchandise.



Hypothermia in a Newborn Infant



One of the most significant causes of death in newborn infants of all gestational ages is hypothermia. These infants lose heat by means of convection, evaporation, radiation and conduction. Evaporation is the most detrimental form of infant heat loss. This is mainly due to the large percentage of body water and increased permeability of the skin in newborn infants. Infants maintain core temperature by producing heat from the break down of brown fat (non-shivering thermogenesis) and peripheral vasoconstriction.

Hypothermia is categorized as mild, moderate and severe. Mild hypothermia ranges from 36.1°C-36.5°C, moderate hypothermia greater than 32°C-36°C and severe hypothermia <32°C. Hypoxia often occurs in severely hypothermic infants due to an increase in cellular metabolism that occurs as the infant tries to stay warm. This causes the cells to use more oxygen. Hypothermic infants are also at risk for hypoglycemia, a result of the high consumption of glucose used for heat production.

In addition to hypothermia at birth, newborns may become hypothermic for a number of iatrogenic reasons such as infection. If hypothermia persists despite intervention, infection should be considered. Additional risk factors of hypothermia in infants are respiratory distress, central nervous system depression, metabolic acidosis, necrotizing enterocolitis and head bleeds.

Preventing hypothermia is important to avoid serious and potentially life-threatening complications to newborns. Infants rely on external interventions to maintain body and skin temperatures. Prevention of hypothermia in a newly born infant includes drying the infant immediately after birth and removing the wet blankets. This will help prevent heat evaporation from the amniotic fluid. Wrapping the infant in warm blankets, increasing the room temperature and applying a hat over the head help reduce heat loss from method convection. Additional methods in preventing heat loss include skin to skin care, laying the infant on a warm surface, using a transwarmer mattress, eliminating drafts and placing the infant in a polyurethane bag.

Maintaining heat in a newborn is an essential basic need. If axillary temperature is below 36.5°C close monitoring is required to aid in the regulation of temperature. This simple but vital concept of temperature regulation will significantly reduce the morbidity and mortality in the newborn.

Contact MedCenter Air
1-800-421-9195



Thank you to our MedCenter Air lecturers speaking at the Air Medical Transport Conference in Fort Lauderdale Oct. 11- 14. Allan Bulkley, Joe Hylton, Andy Fullerton (RRT as Members of a Primary Critical Care Transport Team), Heather Helms

(Healing Broken Hearts), Charlotte Thomas (Social Networking and Air Medical Outreach- The Good, The Bad and The Reality) and Clint Darby (Induced Hypothermia and Transport of the Neonatal Patient).



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