

# Caring for Adult Patients in the PICU and Caring for Pediatric Patients in the Adult ICU

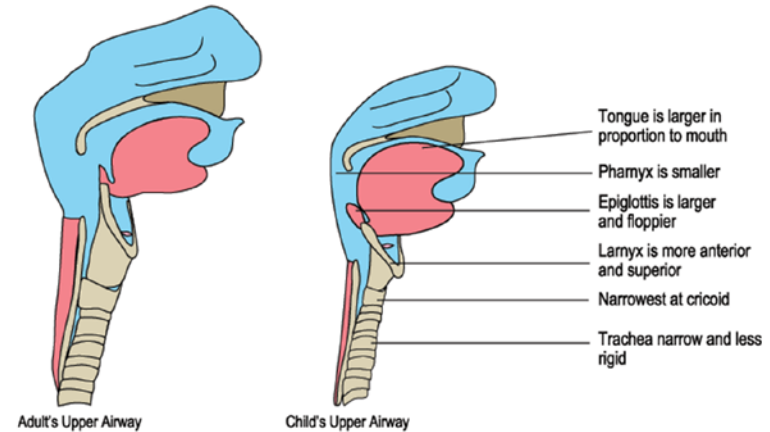
Nancy Blake, PhD, RN, CCRN-K,  
NHDP-BC, NEA-BC, FAAN

# Unique Needs in Pediatrics - Airway

- Tracheal diameter is proportionate to size



- In children under 8 years of age the cricoid cartilage is the narrowest portion of the trachea



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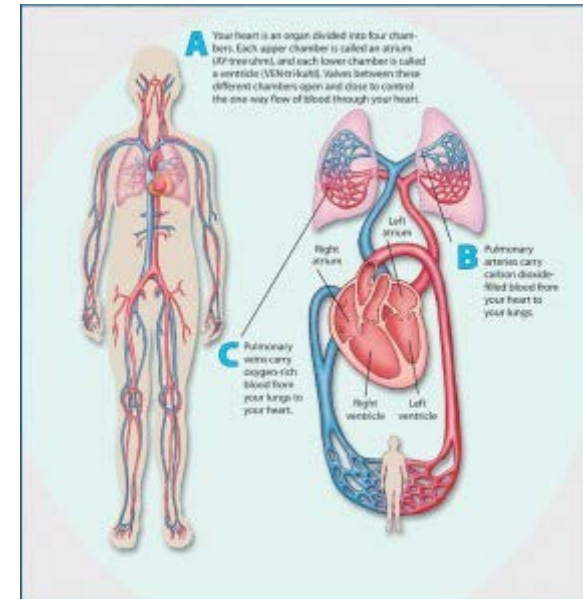
## Unique Needs in Pediatrics - Breathing

- Diaphragm is positioned more horizontally – they rely on the diaphragm to assist with breathing
- Air in stomach can cause the diaphragm to elevate and compromise lung capacity
- Chest wall is more pliable in children



# Unique Needs in Pediatrics - Circulation

- Children can compensate for blood or fluid loss by increasing their heart rate
- Blood volume depends on size of the child



## Unique Needs in Pediatrics - Thermoregulation

- Children (especially infants) have large surface area-to-volume ratio (and less subcutaneous tissue) and lose heat to the environment
- Cold stress causes energy consumption, increased oxygen need and metabolism
- Can get hypoglycemic and deteriorate



# Unique Needs in Pediatrics - Neurological

- Skull is thin and offers little protection to the brain of the infant/ young child
- More prone to head trauma
- Head circumference can be increased with head trauma
- Shear hemorrhage and diffuse brain injury from swelling are more common in kids
- Kids with brain injury have a higher recovery rate



## Unique Needs in Pediatrics - Abdominal

- Protruding abdomen
- Most common injured organisms are liver and spleen
- Pelvic fractures are uncommon because the pelvis is more anterior
- Abdominal muscles are thinner and weaker



## Experiences During the Pandemic

- Adult patients brought to the PICU – Up to 30 years
- Introduced to the PopCORN Group: [Popcorn group](#)
  - <https://www.popcornnetwork.org/resources-for-other-health-professionals>
  - <https://www.popcornnetwork.org/acls-primer>



# REFERENCES

- <https://www.chla.org/pediatric-disaster-resource-and-training-center>
- <https://dhs.lacounty.gov/emergency-medical-services-agency/home/disaster-programs/resource-documents/>

## Executive Summary

### Deliberations and recommendations of the Pediatric Emergency Mass Critical Care Task Force: Executive summary

Nirranjan Kissoon, MD, FRCP(C), FAAP, FCCM, FAPE; for the Task Force for Pediatric Emergency Mass Critical Care

(Pediatr Crit Care Med 2011; 12(Suppl):S103-S108)  
Key Words: children; critical illness; pandemic; pediatric emergency mass critical care; treatment; triage

Despite difficult challenges during responses to the terrorist attacks of September 11, 2001, Hurricane Katrina, and the 2009 Pandemic Influenza A(H1N1) and severe acute respiratory syndrome outbreaks, no North American emergency to date has overwhelmed intensive care unit (ICU) services on a widespread basis since the modern development of the field of critical care. However, planners have recognized that in a future public health emergency we may not be so fortunate. To deal with very large emergencies involving many patients whose survival depends on immediate access to intensive care, an International Task Force for Mass Critical Care proposed recommendations in January 2007 to extend critical care resources for the adult population, referred to as the Emergency Mass Critical Care (EMCC) approach (1–6).

The EMCC approach triples critical care capabilities for a period of up to 10 days in a very large public health emergency by focusing on immediately lifesaving interventions, while delaying or forgoing less urgent care. Crisis standards of care in a large public health emergency would attempt to optimize population outcomes, rather than use unlimited efforts to maximize survival of each individual. Available resources would be substituted or adapted for equivalent or nearly equivalent unavailable resources. Resources would be conserved, reused, and reallocated to those patients most likely to benefit from them. Modest increases in stockpiles and major changes in the organization of care would be essential. While planners in the field acknowledge that mass critical care is a reasonable concept, we lack evidence that such an approach is feasible. However, failure to begin operational planning for mass critical care guarantees a failed response. As public health emergency planners begin to consider the EMCC framework, it is urgent that pediatric implications be detailed for integration into these developing plans. This supplement represents the discussions of a multidisciplinary panel convened by the Oak Ridge Institute for Science and Education (supported financially by the Centers for Disease Control and Prevention), and provides guidance for pediatric EMCC (PEMCC).

Work of the PEMCC Task Force was directed by a 17-member Steering Committee selected on the basis of their expertise and experience, and included representatives from the Task Force for Mass Critical Care, World Federation of Pediatric Intensive and Critical Care Societies, American Academy of Pediatrics, American College of Critical Care Medicine, American College of Emergency Medicine, Royal College of Physicians (Canada), and National Commission on Children and Disasters, as well as several unaffiliated disaster preparedness experts. This Steering Committee led development of all manuscripts and selected individuals for the PEMCC Task Force. The full PEMCC Task Force comprised 44 experts from fields including bioethics, pediatric critical care, pediatric trauma and surgery, neonatology, obstetrics, general pediatrics, emergency medicine, pediatric emergency medicine, disaster preparedness and response, emergency medical services (EMS), infectious diseases, toxicology, military medicine, nursing (including critical care nursing), pharmacy, veterinary medicine, information sciences, public health law, maternal and child public health, and local, state, and federal government emergency planning and response agencies.

Priority topics were organized on the basis of MEDLINE and Ovid database literature searches, bibliographies, state and federal government planning documents, after-action reports of recent medical responses to catastrophes, and through participation in local, state, and federal government working groups on hospital and disaster preparedness. Where evidence was available, it was utilized in formulating recommendations. Where evidence was lacking, recommendations represent expert opinion. Where possible, recommendations are consistent with and easily integrated into prior recommendations of the adult Task Force for Mass Critical Care. The Steering Committee produced draft outlines by synthesizing information obtained in the evidence-gathering process and convened October 6–7, 2008, to review and

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# QUESTIONS

- Contact Information

- Nancy Blake, PhD, RN, CCRN-K, NHDP-BC, NEA-BC, FAAN
- Chief Nursing Officer
- LAC+USC Medical Center
- [nblake@dhs.lacounty.gov](mailto:nblake@dhs.lacounty.gov)