

Dyspnea or Respiratory Distress

Setting: **Emergency Department** Population: **Pediatric**

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Clinical Description

Care of the Emergency Department patient seeking treatment for the sensation or complaint of breathlessness with or without the appearance of difficulty breathing.

Key Information

- Consider foreign body airway obstruction in cases of sudden onset respiratory distress, as well as for children with developmental delay.
 - Dyspnea is a subjective experience. Treat the patient based on complaints or appearance, rather than relying on numerical values.
 - Similar signs and symptoms across conditions make diagnosis difficult. The most common causes originate from heart or lungs; although neuromuscular or psychologic origins should be considered.
 - If an opioid or benzodiazepine agent is used to relieve anxiety and breathlessness, closely observe for respiratory depression or deterioration.
 - Bronchiolitis and croup are associated with difficulty breathing or dyspnea in children.
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Threats to Life, Limb or Function

- airway obstruction
 - anaphylaxis
 - apnea
 - cardiopulmonary arrest
 - hypoxia
 - sepsis
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Clinical Goals

By transition of care

A. The patient will demonstrate achievement of the following goals:

- Goal: Acute Signs/Symptoms are Managed
- Goal: Acceptable Pain Level Achieved

B. Patient, family or significant other will teach back or demonstrate education topics and points:

Correlate Health Status

Correlate health status to:

- history, comorbidity, congenital anomaly
- age, developmental level
- sex, gender identity
- baseline assessment data
- physiologic status
- response to medication and interventions
- psychosocial status, social determinants of health
- barriers to accessing care and services
- child and family/caregiver:
 - health literacy
 - cultural and spiritual preferences
- safety risks
- family interaction
- plan for transition of care

Dyspnea or Respiratory Distress

Presentation

- difficulty breathing
- chest heaviness
- chest tightness
- feeling of air hunger
- feeling of inability to take a deep breath
- respiratory pattern irregular
- tachycardia
- tachypnea

Associated Signs/Symptoms

- accessory muscle use
- apnea
- breath sounds with wheezing or crackles
- cough
- cyanosis
- difficulty speaking or crying
- extreme fatigue
- fussiness
- grunting
- head-bobbing
- hoarseness
- jugular vein distension
- listless
- nasal flaring
- peripheral edema
- pursed lip breathing
- restlessness
- retractions
- shortness of breath
- sighing frequently
- sputum production
- stridor or noisy breathing

Potential Causes

- anxiety
- aspiration
- bronchopulmonary dysplasia
- congenital heart disease
- foreign body aspiration
- gastroesophageal reflux
- infection
- laryngomalacia or tracheomalacia
- panic attack

Initial Assessment

- airway patency
- breath sounds
- breathing pattern
- level of consciousness
- peripheral oxygen saturation
- weight
- work of breathing

History

- allergies
- comorbidities
- immunization status
- last menstrual period (females of childbearing age)
- medications
- alleviating factors
- birth and perinatal history, if infant
- coughing or choking
- effect on eating, sleeping and ability to speak/vocalize
- effort variation with position change or activity

- ongoing treatment side effects
- onset duration and precipitating events
- past episode treatment, such as hospitalization or intubation
- past episodes
- recent exposure, illness
- recent injury
- smoking history and status
- treatment prior to presentation

Laboratory Studies

- ABG (arterial blood gas)
- blood glucose level
- BNP (B-type natriuretic peptide)
- CBC (complete blood count) with differential
- CRP (C-reactive protein)
- D-dimer
- serum electrolytes
- serum lactate
- sputum culture
- toxicology levels
- viral culture

Diagnostics

- chest x-ray
- ECG (electrocardiogram)

Potential Additional Testing

- bronchoscopy
- CTPA (computed tomography pulmonary angiogram)
- echocardiogram
- laryngoscopy

- lateral soft tissue neck x-ray
- peak flow rate measurement
- pregnancy test (females of childbearing age)
- ultrasonography

Problem Intervention(s)

Provide Respiratory Support

- Assess and monitor airway and breathing for effective oxygenation and ventilation; maintain close surveillance for deterioration.
- Maintain open and patent airway with use of positioning, airway adjuncts and secretion clearance.
- Position to minimize the risk of aspiration, ventilation/perfusion mismatch and breathlessness.
- Minimize oxygen consumption and demand; limit activity, reduce fever and utilize breathing techniques.
- Provide oxygen therapy judiciously; titrate to prevent hyperoxemia.
- Consider inhaled beta-1 or beta-2 agonist, such as racemic epinephrine or albuterol, especially in the presence of stridor or wheezing.
- Implement noninvasive or invasive positive pressure ventilation to support oxygenation and ventilation, as well as relieve respiratory distress.

Provide Hemodynamic Support

- Monitor cardiovascular status.
- Observe for, and address, cardiac dysrhythmia.
- Position to support perfusion.
- Evaluate fluid status; provide fluid therapy to improve blood flow, perfusion and tissue oxygenation.
- Monitor and manage electrolyte levels; anticipate the need to correct imbalance; evaluate patient response.
- If cardiac origin identified, consider the need for pharmacologic measures, such as a diuretic or vasoactive agent.
- Anticipate urgent intervention in the presence of hemodynamic instability.

Promote Comfort and Manage Pain

- Use a consistent pain assessment tool; evaluate pain and treatment response at regular intervals.
- Involve patient and family in the management plan.

- Provide nonpharmacologic strategies, such as breathing techniques, positioning, distraction and diversion.
- Consider pharmacologic measures, such as an opioid or benzodiazepine agent, especially for palliation or breathlessness associated with anxiety or panic attack.
- Evaluate risk for opioid use.

Minimize and Manage Infection

- Assess for presence of infection and signs of early sepsis.
- Initiate precautions to prevent the spread of infection.
- Obtain cultures prior to initiation of antimicrobial therapy, when possible.
- Anticipate antimicrobial therapy administration; do not delay in the presence of high suspicion or clinical indicators.

Provide Psychosocial Support

- Proactively provide information; encourage questions and address concerns.
- Provide calm, reassuring presence.
- Recognize, identify and allow expression of emotions.
- Promote parent/caregiver presence at bedside.
- Offer choices to enhance a sense of control.
- Honor spiritual and cultural preferences.
- Recognize and utilize personal coping strategies.

Facilitate Procedures

- Initiate and maintain NPO (nothing by mouth) status.
- Prepare for or assist with procedure, such as chest tube placement, intubation and needle aspiration.
- Facilitate referral for follow-up with a specialist, clinic or disease-management program.

Teaching Focus

- symptom/problem overview

- risk factors/triggers
 - self-management
 - assistive device
 - diagnostic test
 - diet modification
 - medical device/equipment use
 - medication administration
 - opioid medication management
 - orthopaedic device
 - safe medication disposal
 - smoking cessation
 - wound care
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Population-Specific Considerations

Forensics and Legal

- Utilize local, state/province, federal requirements and hospital policy and protocols to manage patient care involving forensics, protective services, workman's compensation and mandatory reportable events and illness.

Human Trafficking

- Human trafficking victims most frequently seek healthcare services from Emergency Departments. Healthcare professionals, alert to signs of trafficking, can guide supportive care for victims.
- Trafficked individuals may be male or female and engaged in sex work or other forced labor. High-risk signs requiring more direct questioning about exploitation include, among others, current employment in a high-risk industry, prior sexually transmitted infections, recent immigration and other vulnerable and minority populations, as well as children who are homeless, runaways or in foster care.

Age-Related

- Infants under 6 months of age are obligate nose breathers.
- Infants and young children are at high risk for RSV (respiratory syncytial virus) infection.
- Asthma is the most common childhood chronic disease; however, most recurrent wheezing in children younger than 5 years of age is generally associated with respiratory tract infections.

Pregnancy

- Beyond 20 weeks gestation, supine position should be avoided. Maternal position should be lateral or lateral tilt to prevent compression of the inferior vena cava and aorta by the pregnant uterus.
- Presentation with a complaint of shortness of breath, absence of any known comorbidities and normal pulse oximetry readings may be “benign” dyspnea of pregnancy. This may occur as a normal response to increased partial oxygen tension in pregnancy that enables adequate fetal oxygenation.
- Potentially serious causes of dyspnea during pregnancy that should be considered include pulmonary embolism, dysrhythmia, pulmonary edema, pneumonia, asthma and cardiomyopathy.
- Incidence of pulmonary embolism is 5 to 10 times higher in pregnancy and the early postpartum phase.
- A pregnant abdomen may cause mechanical interference with breathing.

Table

References

Additional Information: Dyspnea or Respiratory Distress Peds. PDF. Download

American Academy of Pediatrics, Committee on Pediatric Emergency Medicine; American College of Emergency Physicians, Pediatric Committee; Emergency Nurses Association, Pediatric Committee. Joint policy statement—Guidelines for care of children in the Emergency Department. *Journal of Emergency Nursing*. 2013;39(2), 116-131. doi:10.1016/j.jen.2013.01.003 [Quality Measures, Clinical Practice Guidelines]

American Academy of Pediatrics. Clinical Practice Guideline: The diagnosis, management and prevention of bronchiolitis. *Pediatrics*. 2014;134, e1474-e1502. doi:10.1542/peds.2014-2742 [Metasynthesis, Meta-analysis, Systematic Review]

American Heart Association; The American Academy of Pediatrics. (2016). *Pediatric advanced life support provider manual*. United States: American Heart Association. [Review Articles, Expert/Committee Opinion, Core Curriculum, Position Statements, Practice Bulletins]

Centers for Disease Control and Prevention (CDC). (2017). *CDC 24/7: Saving lives, protecting people Respiratory syncytial virus infection (RSV)*. Source [Quality Measures, Clinical Practice Guidelines]

Centers for Medicare & Medicaid Services (CMS). (2017). *NQF 0495. Median Time from ED Arrival to ED Departure for Admitted ED Patients*. Source [Quality Measures, Clinical Practice Guidelines]

Centers for Medicare & Medicaid Services (CMS). (2017). *NQF 0496. Median time from ED arrival to ED departure for discharged ED patients*. Source [Quality Measures, Clinical Practice Guidelines]

College of Respiratory Therapists of Ontario. (2013). *Oxygen therapy clinical best practice guideline* . Source [Quality Measures, Clinical Practice Guidelines]

Combret, Y.; Prieur, G.; Le Roux, P.; Médrinal, C. Non-invasive ventilation improves respiratory distress in children with acute viral bronchiolitis: A systematic review. *Minerva Anestesiologica*. 2017;83(6), 624-637. doi:10.23736/S0375-9393.17.11708-6 [Metasynthesis, Meta-analysis, Systematic Review]

Davis, M. D.; Walsh, B. K.; Sittig, S. E.; Restrepo, R. D.. AARC clinical practice guideline: Blood gas analysis and hemoximetry. *Respiratory Care*. 2013;58(10), 1694-1703. [Quality Measures, Clinical Practice Guidelines]

Dellinger, R. P.; Levy, M. M.; Rhodes, A.; Annane, D.; Gerlach, H.; Opal, S. M.; Sevransky, J. E.; Sprung, C. L.; Douglas, I. S.; Jaeschke, R.; Osborn, T. M.; Nunnally, M. E.; Townsend, S. R.; Reinhart, K.; Kleinpell, R. M.; Angus, D. C.; Deutschman, C. S.; Machado, F. R.; Rubenfeld, G. D.; Webb, S. A.; Beale, R. J.; Vincent, J. L.; Moreno, R. Surviving sepsis campaign: International guidelines for management of severe sepsis and septic shock: 2012. *Critical Care Medicine*. 2013;41(2), 580-637. doi:10.1097/CCM.0b013e31827e83af [Quality Measures, Clinical Practice Guidelines]

Dudley, N.; Ackerman, A.; Brown, K. M.; Snow, S. K.; American Academy of Pediatrics Committee on Pediatric Emergency Medicine; Emergency Nurses Association Pediatric Committee. Patient- and family-centered care of children in the emergency department. *Pediatrics*. 2015;135(1), e255-e272. [Review Articles, Expert/Committee Opinion, Core Curriculum, Position Statements, Practice Bulletins]

Emergency Nurses Association. (2018). *Emergency nursing core curriculum* . St. Louis: Elsevier. [Review Articles, Expert/Committee Opinion, Core Curriculum, Position Statements, Practice Bulletins]

Global Initiative for Asthma. (2017). *Global strategy for asthma management and prevention* . Source [Quality Measures, Clinical Practice Guidelines]

Greenbaum, J.. Identifying victims of human trafficking in the emergency department. *Clinical Pediatric Emergency Medicine*. 2016;17(4), 241-248. [Review Articles, Expert/Committee Opinion, Core Curriculum, Position Statements, Practice Bulletins]

Hammond, B. B.; Zimmermann, P. G. (2013). *Sheehy's manual of emergency care* . St. Louis: Mosby, Elsevier. [Review Articles, Expert/Committee Opinion, Core Curriculum, Position Statements, Practice Bulletins]

Hooten, M.; Thorson, D.; Bianco, J.; Bonte, B.; Clavel Jr., A.; Hora, J.; Johnson, C.; Kirksson, E.; Noonan, M. P.; Reznikoff, C.; Schweim, K.; Wainio, J.; Walker, N.. (2016 [updated 2017, Aug]). *Pain: Assessment, non-opioid treatment approaches and opioid management* . (pp.160). Bloomington (MN): Institute for Clinical Systems Improvement (ICSI). Source [Quality Measures, Clinical Practice Guidelines]

Liang, S. Y.; Theodoro, D. L.; Schuur, J. D.; Marschall, J.; Infection prevention in the emergency department. *Annals of Emergency Medicine*. 2014;64(3), 299-313. doi:10.1016/j.annemergmed.2014.02.024 [Review Articles, Expert/Committee Opinion, Core Curriculum, Position Statements, Practice Bulletins]

Marsac, M. L.; Kassam-Adams, N.; Hildenbrand, A. K.; Nicholls, E.; Winston, F. K.; Leff, S. S.; Feinn, J.. Implementing a trauma-informed approach in pediatric health care networks. *JAMA Pediatrics*. 2016;170(1), 70-77. [Review Articles, Expert/Committee Opinion, Core Curriculum, Position Statements, Practice Bulletins]

National Institute for Health and Care Excellence. (2016). *Sepsis: Recognition, diagnosis and early management*. (*NICE guideline [NG51]*) . Source [Quality Measures, Clinical Practice Guidelines]

Registered Nurses' Association of Ontario. (2013). *Assessment and management of pain* . Source [Quality Measures, Clinical Practice Guidelines]

Registered Nurses' Association of Ontario. (2015). *Person- and family-centred care* . Source [Quality Measures, Clinical Practice Guidelines]

Ringer, T.; Moller, D.; Mutsaers, A.. Distress in caregivers accompanying patients to an emergency department: A scoping review. *Journal of Emergency Medicine*. 2017;53(4), 493-508. [Metasynthesis, Meta-analysis, Systematic Review]

Sterling, S. A.; Miller, R.; Pryor, J.; Puskarich, M. A.; Jones, A. E. The impact of timing of antibiotics on outcomes in severe sepsis and septic shock: A systematic review and meta-analysis. *Critical Care Medicine*. 2015;43(9), 1907-1915. [Metasynthesis, Meta-analysis, Systematic Review]

Troiano, N. H.; Witcher, P. M.; McMurtry Baird, S.. (2019). *AWHONN: High-risk & critical care obstetrics* . Philadelphia: Wolters Kluwer. [Review Articles, Expert/Committee Opinion, Core Curriculum, Position Statements, Practice Bulletins]

U. S. Department of Health and Human Services. (2017). *Human trafficking webinar for health care providers: SOAR to health and wellness* . Source [Review Articles, Expert/Committee Opinion, Core Curriculum, Position Statements, Practice Bulletins]

Walsh, B. K. (2015). *Neonatal and pediatric respiratory care* . St. Louis: Saunders, Elsevier. [Review Articles, Expert /Committee Opinion, Core Curriculum, Position Statements, Practice Bulletins]

Wensley, C.; Botti, M.; Mckillop, A.; Merry, A. F.. A framework of comfort for practice: An integrative review identifying the multiple influences on patients' experience of comfort in healthcare settings. *International Journal of Quality in Health Care*. 2017;29(2), 151-162. doi:10.1093/intqhc/mzw158 Source [Metasynthesis, Meta-analysis, Systematic Review]

Wente, S. J. K. Nonpharmacologic Pediatric Pain Management in Emergency Departments: A Systematic Review of the Literature. *Journal of Emergency Nursing*. 2013;39(2), 140. doi:10.1016/j.jen.2012.09.011 Source [Metasynthesis, Meta-analysis, Systematic Review]

Wolf, L.; Storer, A.; Barnason, S.; Brim, C.; Halpern, J.; Leviner, S.; Lindauer, C.; Patrick, V. C.; Proehl, J. A.; Williams, J.; Bradford, J. Y. (2012). *Clinical practice guideline: Family presence during invasive procedures and resuscitation* . United States: Emergency Nurses Association. [Quality Measures, Clinical Practice Guidelines]

World Health Organization. (2008). *WHO EMLC: Palliative Care* . Source [Quality Measures, Clinical Practice Guidelines]

World Health Organization. (2016). *Paediatric emergency triage, assessment and treatment: Care of critically-ill children* . Geneva: World Health Organization (WHO). [Quality Measures, Clinical Practice Guidelines]

Young, V. B.. Effective management of pain and anxiety for the pediatric patient in the emergency department. *Critical Care Nursing Clinics*. 2017;29(2), 205-216. Source [Review Articles, Expert/Committee Opinion, Core Curriculum, Position Statements, Practice Bulletins]

de Caen, A. R.; Kleinman, M. E.; Chameides, L.; Atkins, D. L.; Berg, R. A.; Berg, M. D.; Bhanji, F.; Biarent, D.; Bingham, R.; Coovadia, A. H.; Hazinski, M. F.; Hickey, R. W.; Nadkarni, V. M.; Reis, A. G.; Rodriguez-Nunez, A.; Tibballs, J.; Zaritsky, A. L.; Zideman, D. Part 10: Paediatric basic and advanced life support: 2010 International Consensus on Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Science with Treatment

Recommendations. Resuscitation. 2010;81(1, Supplement), e213. doi:10.1016/j.resuscitation.2010.08.028 [Review Articles, Expert/Committee Opinion, Core Curriculum, Position Statements, Practice Bulletins]

de Vos-Kerkhof, E.; Geurts, D. H.; Wiggers, M.; Moll, H. A.; Oostenbrink, R.. Tools for 'safety netting' in common paediatric illnesses: A systematic review in emergency care. Archives of Disease in Childhood. 2016;101(2), 131-139. doi:10.1136/archdischild-2014-306953 [Metasynthesis, Meta-analysis, Systematic Review]
