MEDICAL DIRECTIVE
Critical Care Outreach Team (CCOT) – Respiratory Distress

Approved by/Date: Medical Advisory Committee – October 27, 2015

Authorizing physician(s)

Intensivists who are part of the Critical Care Physician Section

Authorized to who

CCOT Responders (RRTs and RNs) that have the knowledge, skill and judgment and who have successfully attained certification by a course of self-study supplied by the Intensivist – Educators appointed by the Authorizing Physicians, participated in Didactic and Simulation education, completed orientation with Critical Care Outreach Team, and have successfully passed examinations.

Patient Description / Population

Adult Patients over 18. Patients who present with symptoms of shortness of breath and exhibit respiratory distress including but not restricted to symptoms of airway compromise, tachypnea, dyspnea, orthopnea, cyanosis, shortness of breath, accessory muscle use, stridor, crackles, wheezes and /or cyanosis.

Medical Directive Description/Physician's Order

1. Manage airway including support of oxygenation and ventilation
2. Oxygen therapy as required to maintain oxygen saturation above or equal to 92%; patients who have COPD 88-92%
3. Initiate monitoring including cardiac, blood pressure and pulse oximetry
4. Vital signs including temperature Q 5-30 minutes and prn
5. Review patient history and diagnosis
6. Stat POC or i-STAT ABG (pH, pO2 and pCO2)
7. STAT Portable Chest X-ray – upright if possible
8. Stat Blood Work (CBC, electrolytes, glucose, urea, creatinine, Magnesium, Phosphorus, Corrected calcium)
9. Insert a large (18 if possible) gauge IV
10. Intraosseous access may be attained when it is a very unstable, life threatening situation and when IV access has not been successful after 2 attempts or 90 seconds of searching for a suitable vein
11. **If on auscultation CRACKLES** - Position patient in Semi to high Fowlers

12. **If on auscultation wheeze or silent chest** – Salbutamol 4-9 puffs q15 min up to 3 times and Ipratropium 4-9 puffs once
13. Continuous Positive Airway Pressure (CPAP)/Bi-level Positive Airway Pressure (Bipap) or CPAP mask initiation:
    - **NOTE: patients who require ongoing CPAP/Bipap must be transferred to a Critical Care Unit**
    - If severe respiratory distress (respiratory rate greater than 30) and/or oxygen saturation less than 90% on 100% oxygen by non-rebreather or high-flow/Optiflow
    - Contraindications: systolic pressure less than 90 mmHg systolic, suspected pneumothorax, decreased level of consciousness leading to compromise of airway patency, inability to sit upright, unable to cooperate with CPAP/BiPAP, abdominal surgery within 7 days, active nausea and vomiting.
    - Start CPAP at 5 cm H20 and increased by 5 cm H20 to maximum 15 cm H20 as required to relieve symptoms/hypoxia and as tolerated by patient
    - May initiate Bipap if ongoing respiratory distress despite CPAP or evidence of hypercapnea (PaCO2 greater than 50 and pH less than 7.3 OR EtCO2 greater than 50 and no ABG available)
    - Initiate inspiratory pressure 5 cm H20 above CPAP setting and titrate up as required to maximum 25 cm H20 total inspiratory pressure.

Specific conditions/circumstances that must be met before the Directive can be implemented

- Patient must be assessed and placed into a severity category by the CCOT responder.
- The patient must have symptoms of crackles, wheezing, shortness of breath, cyanosis, dyspnea, tachypnea, orthopnea, and/or accessory muscle use.
- Each intervention will be explained to the patient and/or family when possible.
- Medications given by hospital personnel or taken by the patient just prior to the event must be included in the calculation of maximum doses.
- Personal protective equipment (mask, protective eyewear or face shield) must be used by staff when within two metres of any patient on CPAP/Bipap, with or without symptoms of an acute respiratory infection.

Contraindications to the implementation of the Directive

- Patient refuses therapy.
- Allergy to salbutamol, ipratropium or MDI propellant will prevent use of the specific agent.
- Patient is in pre-morbid state (silent chest, cyanosis, confusion) – code blue must be activated.

- Patient is incapable of cooperating with the procedures.
- Patients exhibiting signs and symptoms of acute respiratory infection must be managed with Contact/Droplet isolation in a private room to have CPAP/Bipap initiated on the floor.

Identify relevant Delegated Control Act or Added Skill associated with this Directive

Administering a substance by injection or inhalation.
Performing a procedure below the dermis:

- IV Insertion Certification
- IO Insertion Certification

Documentation requirements

- Implementation of the Medical Directive must be documented on the chart under physician orders.
- Vital signs pre and q15 to 30 minutes post medication.
- Response to bronchodilator medication must be documented in the CCOT note.

Review/Evaluation Process (how often/by who)

Every 2 years by Medical Department - Emergency Medicine and Critical Care Council.

Related Documents

Canadian Asthma Consensus Report – Canadian Medical Association Journal 1999; 161:S1- S12.

ORNGE Medical Directives and Standing Orders. Airway-Airway Protocol – Crash. April. 2005. Pg. 33-34.

Ontario Provincial Primary Care Paramedic Medical Directives - Bronchoconstriction Medical Directive. Waterloo Region, Ontario, Canada. Base Hospital Program Jan 1, 2007 pg. 8-9

Ontario Provincial Primary Care Paramedic Medical Directives – Sever Asthma Exacerbation Medical Directive. Waterloo Region, Ontario, Canada. Base Hospital Program Jan 1, 2007 pg. 10.

Ontario Provincial Primary Care Paramedic Medical Directives – Pulmonary Edema Medical Directive. Waterloo Region, Ontario, Canada. Base Hospital Program Jan 1, 2007 pg. 13.

Lakeridge Health Corporation. Emergency Medical Directives: Adult Asthma. Sept 2009.

Lakeridge Health Corporation. Emergency Medical Directives: Adult COPD. Sept 2009.

References

1. Garrard, C, Young, D. Suboptimal care of patients before admission to an Intensive care us caused by a failure to appreciate or supply the ABCs of life support. BJM 1998; 316:1841-1842.

2. Buist MD, Jarmolowski E, Burton PR, et al. Recognizing clinical instability in hospital patients before cardiac arrest or unplanned admission to intensive care: a pilot study in a tertiary care hospital Med J. Aust. 1999; 171:22-25.

3. Berwick, DM. Redesigning hospital care. JAMA. 2006; 295:324-327.

4. Hillman K, Chen J, Cretikos M, et al. Introduction of the medical emergency team (MET) system: a cluster-randomized controlled trial. Lancet. 2005; 365:2091-2097.

5. Bellomo R, Goldstein D, Uchino, S et al. A prospective before and after trial of a medical emergency team. Med J Aust. 2003; 179:283-287.

6. Bellomo R, Goldstein D, Uchino, S et al. Prospective controlled trial of effect of a medical emergency team on postoperative morbidity and mortality rates. Crit Care Med. 2004; 32:916- 921.

7. Buist MD, Moore GE, Bernard SA, et al. Effects of a medical emergency team on reduction of incidence of and mortality from unexpected cardiac arrests in hospital: a preliminary study. BMJ. 2002; 324:387-390.

8. Kenward G, Castle N, Hodgetts, T, et al. Evaluation of a medical emergency team one year after implementation. Resuscitation. 2004: 61:257-263.

9. DeVita MA, Braithwaite RS, Mahidhara R, et al. Use of medical emergency team responses to reduce hospital cardiopulmonary arrests. Qual Saf Health Care. 2004; 13:251-254.

10. Jolley J, Bendyk H, Holaday B, Lombardozzi KA, et al. Rapid Response Teams: do they make a difference? Dimens Crit Care Nurs. 2007; 35:2076-2082.

11. Jones D, Opdam H, Egi M, et al. Long term effect of a medical emergency team on mortality in a teaching hospital. Resuscitation. 2007; 74:235-241.

12. Sebat, F et al. Designing, Implementing and Enhancing a Rapid Response System. Society of Crit Care Med. 2009; 1-217.

13. London Health Sciences, Ontario Canada. UWO Program in Critical Care Document. Educational Objectives for the Critical Care Outreach Teams July 2009. Pg. 1-4.

14. Gentofte Hospital. Full-scale simulation training of MET and staff from general ward. June 14, 2009.

15. Bell M et al. Prevalence and sensitivity of MET – criteria in a Scandinavian University Hospital. Resuscitation 2006; 70:66-73.

16. Aneman A et al. The ERC Guidelines for Resuscitation 2005 and the Medical Emergency Team. Scand J Trauma Resusc Emerg Med. 2006; 14:74-77.

17. Bengtsson A et al. Medical emergency team implementation: experiences from the Karolinska University Hospital. Solna, Sweden. 2006.

18. Credit Valley Hospital, Ontario Canada. RACE Team – Preliminary Diagnostics and Interventions. Jan. 2007.

19. Hodder, Rick. Critical Care Response Team Provider Manual; Canadian Resuscitation Institute 2006.

20. Faculty of Medicine, Liverpool Health Science, Liverpool, Australia. Medical Emergency Team, 2005, pg. 1-3.

21. North York General Hospital, Toronto, Canada. Adult Cardiac Arrest Medical Directives. Oct. 2005 pg. 1-7.

22. Institute for Healthcare Improvement: Establish a Rapid Response Team - Getting Started Kit: Rapid Response Teams - How-to Guide. Cambridge, Massachusetts, USA. Oct. 2005.

23. The Canadian Society of Respiratory Therapists (CSRT). CSRT-Advocacy – Rapid Response Teams /Medical Emergency Teams. April 2005.

24. Trillium Health Centre, Toronto, Ontario, Canada. Assessment and Medical Inpatient by Medical Emergency Team. June 8, 2006. Pg. 1-4.

25. McFarlan S, Hensley, S. Implementation and outcomes of a Rapid Response Team. J Nurs Care Qual. 2007, Vol 22; 4:307-313.

26. Jackson M. Rapid Response Teams; what does the RRT bring? Bingham and Women's Hospital, Boston MA. USA. 2005.

27. Anderson N, Sutton A, et al. Lessons from the Field "ICU without Walls". The Calgary Health Regions ICU Outreach Team. Alberta Canada. June 2004.

28. Hamilton Health Sciences Corporation. Critical Care Response Team : Master Medical Directives. Ontario. Canada. 2003.

29. Lakeridge Health Corporation. Medical Directive - Adult Intubation by Registered Respiratory Therapists. Ontario, Canada, Oct 2009.

30. Lougheed D et al. Canadian Respiratory Guidelines. Recommendations for the Management of Asthma, Children (6 years and older) and Adults. Can Respir J 2010. Vol. 17(1).