
Project Summary

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Objective

To update the asthma pathway with the asthma committee's most recent recommendations.

Recommendations

1. The ED and Inpatient asthma pathways will be combined to optimize treatment as a seamless continuum between the two areas of the hospital.
2. Patients should be evaluated for admission after one hour of therapy.
3. Albuterol MDIs will be used more frequently in the treatment of mild and moderate exacerbations.
4. Ipratropium bromide treatment will be used only in the initial treatment of moderate to severe asthmatics (RS 6-12) and discontinued after 24 hours of use.
5. Magnesium sulphate IV 50 mg /kg x1 can be used in the ED for the adjunctive treatment of patients who remain severe (RS 9-12) after 1 hour of continuous nebulized albuterol.
6. Dexamethasone will be used for initial therapy in the ED and patients will be transitioned to prednisone / prednisolone in the inpatient setting.
7. Patients need only reach albuterol every four hour dosing to be discharged from the hospital.
8. The new asthma management plan (AMP) will be used to promote better communication with families.

Rationale (Safety, Quality, Cost, Delivery, Engagement, and Patient/Family Satisfaction):

- Costs will be reduced by eliminating the use of ipratropium MDI in the inpatient setting. This will decrease utilization of respiratory therapy resources for administration as well.
- Delivery of care will be improved by expediting patient flow through the emergency department and inpatient setting.
 - Increased albuterol MDI use in the emergency department has been shown to reduce ED length of stay.
 - Evaluation for admission based on response to therapy after 1 hour is anticipated to reduce length of stay in the ED.
 - Inpatient length of stay may be reduced by facilitating discharge at albuterol q4 hours in place of q6.
- Quality of care will improve by:
 - Making magnesium sulphate IV available as an option for treating recalcitrant severe exacerbations. This may reduce ICU admission as well.
 - The change to using prednisone and prednisolone for inpatients should reduce the number of patients who are discharged with an inadequate steroid course which would have resulted in returns to the ED or inpatient setting.
- Engagement is grounded in the fact that the pathway has been developed by RNs, RTs, and MDs.
 - The implementation will include a training module to educate the clinical staff who will be using the pathway.
- Patient/Family Satisfaction will be addressed by implementing clinical standard work that will assure the highest quality of care.
 - The improved asthma management plan should enhance patient education.
 - It is hoped that fewer patients will need to return to the ED or be readmitted with longer steroid courses.

Project Summary

Evidence

- National Asthma Education and Prevention Program (NAEPP): Expert Panel Report 3 (EPR-3): Guidelines for the Diagnosis and Management of Asthma—Full Report 2007
- Acute Asthma Guideline, Cincinnati Children's Hospital Medical Center: Evidence-based care guideline for management of acute asthma exacerbation in children
- Cates CC, Crilly JA, Rowe BH. Holding chambers (spacers) versus nebulizers for beta-agonist treatment of acute asthma. *Cochrane Database Syst Rev* 2006 Apr 19;(2):CD000052. Review
- Kelly AM, Kerr D, Powell C. Is severity assessment after one hour of treatment better for predicting the need for admission in acute asthma? *Respir Med* 2004;98(8):777–81
- Camargo CA Jr, Spooner CH, Rowe BH. Continuous versus intermittent beta-agonists in the treatment of acute asthma. *Cochrane Database Syst Rev* 2003b;(4):CD001115
- Papo MC, Frank J, Thompson AE. A prospective, randomized study of continuous versus intermittent nebulized albuterol for severe status asthmaticus in children. *Crit Care Med* 1993;21(10):1479–86
- Qureshi F, Zaritsky A, Poirier MP. J Pediatr. 2001 Jul;139(1):20-6. Comparative efficacy of oral dexamethasone versus oral prednisone in acute pediatric asthma. *J Pediatr*. 2001 Jul; 139(1):20-6
- Smith M, Iqbal SH, Rowe B, N'Diaye, T. Corticosteroids for hospitalized children with acute asthma. *Cochrane Database of Systematic Reviews*. 1, 2009
- Cheuk DK, Chau TC, Lee SL. A meta-analysis on intravenous magnesium sulphate for treating acute asthma. *Arch Dis Child*. 2005 Jan;90(1):74-7. Review.
- See asthma pathway on CHILd for expanded bibliography.

Implementation Highlights

- New ordersets
- Asthma pathway training module
- Respiratory therapy teaching sessions / video
- GME sponsored resident noon conference
- Integration with Clindoc

Metrics Plan

- Monitor ED length of stay, number of cases, ED admit rate (to inpatient & ICU), ED return visit rate, corticosteroid type, ipratropium use, magnesium sulfate use, and adjusted charges/case.
- Monitor inpatient length of stay, order set usage, order set usage for complicated asthma, return rate to inpatient, corticosteroid type, ipratropium use, number of discharges and adjusted charges/case.
- CAC-3 statistics for asthma management plan (AMP)

PDCA Plan

The asthma CSW owner and committee will follow metrics, continue to review medical literature, and make alterations to pathway in response to these.

Revision History

Date Approved: August 2011

Review Due: June 2014