Hospital Clinical Guidelines
EVIDENCE TABLE
GUIDELINE TOPIC: Non Intensive Care Use of Aminophylline for Severe Acute Asthma in Children

Please record all references used in developing the clinical guideline. This form must be filled out electronically and emailed to Jody.Smith@rch.org.au
NB: If you need assistance with completing this table, please contact Jody Smith on x 6956.

Reference ***(include title, author, journal title, year of publication, volume and issue, pages)***	**Method**	**Evidence level (I-V)**	**Summary of recommendation from this reference (point form)**
Mitra, A. Bassler, D. Goodman, K. Lasserson, TJ. Ducharme, FM. (2006) *"Intravenous Aminophylline for Acute Severe Asthma in Children over 2 years receiving inhaled bronchodilator"*. The Cochrane Collaboration, Issue 1 pg:1-43	Systematic Review	I	• In children with a severe asthma exacerbation, the addition of intravenous aminophylline to B_2^- agonists and glucocorticoids (with or without anticholinergics) improves lung function within 6 hours of treatment • Aminophylline use in children may be appropriate if children have a role in severe acute exacerbations of asthma where response to maximised therapy (inhaled bronchodilators and glucocorticoids) is poor. • There is insufficient evidence to assess the impact on oxygenation, PICU admission and mechanical ventilation. • Aminophylline is associated with a significant increased risk of vomiting
Yung, M. South, M *"Randomised controlled trial of aminophylline for severe acute asthma"* Archives of Disease in Childhood. 79(5):405-10.	Randomised, double blind, placebo controlled trial	I-II	• The placebo and treatment groups of children were similar at baseline. • The 48 children in the aminophylline group had a greater improvement in spirometry at six hours and a higher oxygen saturation in the first 30 hours. • Five subjects in the placebo group were intubated and ventilated after enrolment compared with none in the aminophylline group. • Aminophylline continues to have a place in the management of severe acute asthma in children unresponsive to initial treatment.
Keeley, D. & McKean, M *"Asthma and other wheezing disorders in children". (2005).* Clinical Evidence Concise 2005, 14:1-2. BMJ Publishing Group.	Systematic Review	I-II	• Adding intravenous theopyhlline improved lung function and symptom scores 6-8 hours after treatment. • Theophylline can cause serious adverse effects if therapeutic blood concentrations are exceeded.

Royal Children's Hospital "*Asthma Best Practice Guidelines"*. (1999) Asthma Strategy Group	Practice Guideline	I-V	• The RCH Asthma Best Practice guidelines are not prescriptive but are recommendations for best-practice based on evidence available at the time of development. Recommendations are made in light of all identified evidence. However, where the evidence is conflicting or absent, a balanced view is presented and recommendations are based on the consensus opinion of the Asthma Strategy Group.
Kemp, C. McDowell, J. Bogovic, A. Lilley, B. Cranswick, N. Tibballs, J. Health." *Paediatric Pharmocopeia"*. (2002) Pharmacy Department Royal Children's Hospital.		I-V	• The presentation is outstanding with very clear dosage guidelines and practical notes to guide prescribers. As we all know, product information for drugs often falls well short of the important information needed for safe and effective prescribing in infants and children. The Royal Children's Hospital Paediatric Pharmacopoeia plugs this gap. • The Paediatric Pharmacopoeia is a very important national information source. Its place in therapy is especially relevant now that the awareness of preventable adverse medication events is so high.
Royal College of Paediatrics and Child Health "*Medicines for Children"*. (2003) United Kingdom. P: 27-28		I-V	• A collaborative exercise of the Royal College of Paediatrics and Child Health and a group known as the Neonatal and Paediatric Pharmacists Group, in the UK. The book has 75 contributors and has been through an extensive review process by 60 reviewers during its production.
Thomson Micromedex (Drugdex) (1974-2006) United States		I-V	• Current, accurate drug knowledge reviewed by international experts, the evidence-based documents cover FDA-approved and investigational prescription and non-prescription drugs, as well as non-U.S. preparations.
Comino, E. Bauman, A. Mitchell, C.A. Ruffin, R.E. Antic, R. Zimmerman, P. Gutch, R.C (1991-1993) National Asthma Campaign "*Asthma Management Handbook"*(1988)	Four serial cross-sectional population surveys	I-V	• There is evidence that the National Asthma Campaign may have contributed to increased awareness and improved management of asthma in children • The net impact of the NAC and other activities has been an increase in awareness about asthma in Australia.

B Bursch, L Schwankovsky, J Gilbert, R Zeiger (1999). *"Construction and Validation of four childhood asthma self-management scales: parent barrier, child and parent self efficacy and parent belief in treatment efficacy"*. Journal of Asthma	Cross sectional survey	IV	• This study examined the psychometric properties of four new health belief measures for asthmatic children and their parents. • A valuable tool to assess family-based asthma management that addresses gaps in available assessment methodologies

Level of Evidence
Clinical Guidelines
Royal Children's Hospital

The Hierarchy of Evidence

The Hierarchy of evidence is based on the National Health and Medical Research Council (2000) and Oxford Centre for Evidence-based Medicine Levels of Evidence (May 2001)

I Evidence obtained from a systematic review of all relevant randomised control trials.

II Evidence obtained from at least one properly designed randomised control trial.

III-1 Evidence obtained from well-designed pseudo-randomised controlled trials (alternative allocation or some other method).

III-2 Evidence obtained from comparative studies (including systematic reviews of such studies) with concurrent controls and allocation not randomised, cohort studies, case control studies, or interrupted time series with a control group.

III-3 Evidence obtained from comparative studies with historical control, two or more single–arm studies, or interrupted time series without a parallel control group.

IV Evidence obtained from case-series, either post-test or pre-test and post test.

V Expert opinion without critical appraisal, or based on physiology, bench research, or historically based clinical principles.

Clinical guidelines are based on reviews of the best available evidence. **Level 1 evidence represents the gold standard for intervention studies;** however it is not available for all areas of practice and for some guidelines it may be appropriate to utilise results from studies with lower levels of evidence. Some clinical guidelines may also be informed by experts in the field, locally (RCH) and internationally (Journal articles) (expert opinion) etc. This NHMRC Hierarchy can be used to grade evidence. Please record details on the evidence table and return to Clinical Quality and Safety (CQS) with guideline draft. The Evidence table can be filled out electronically or printed and used as a hard copy.

Please contact Jody Smith Clinical Guideline and Path Coordinator on ext 6956 if you have any concerns or require assistance.