# Pre-school Wheeze – Chesty, wheezy, sneezy…



Dr Ben McNaughten
(Consultant Paediatrician with Special Interest in Respiratory Medicine, RBHSC)

Dr Dara O'Donoghue
(Paediatric Respiratory Consultant, RBHSC)

Catherine Russell
(Asthma nurse specialist, RBSHC)

GP NI

ROYAL BELFAST HOSPITAL FOR SICK CHILDREN
SimEd Team

Northern Ireland
mdta
Medical & Dental Training Agency

@SimEdRBHSC

CPOW week Sept 2022

7 Nights

81 Admissions

43 Respiratory related admissions (53%)

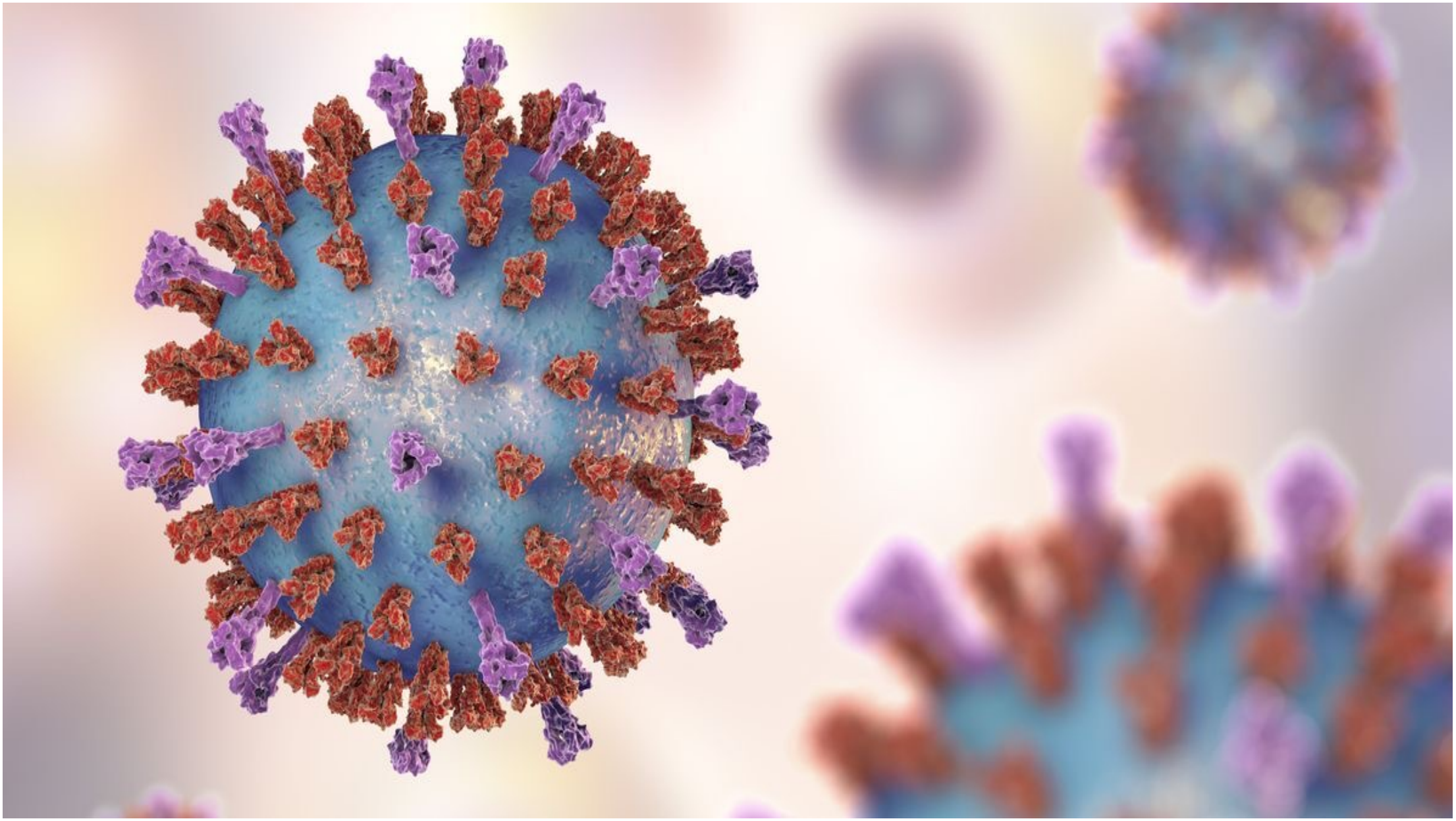
38 Pre-school respiratory related admissions (47% of all admissions)



# Case 1



- 3 month old
- 2 day history – coryzal and cough
- Over last 24 hours:
  - Increased work of breathing
  - Decreased feeding
- 3 year old brother has ‘head cold’
- On examination:
  - Bright and alert
  - Snuffly
  - Scattered creps and wheeze
  - Mild subcostal indrawing
  - Clinically well hydrated



**NICE Guidelines:**

***'Diagnose bronchiolitis if the child has a coryzal prodrome lasting one to three days, followed by:***

- ***Persistent cough and***
- ***Tachypnoea and/or chest recession and***
- ***Wheeze and/or crackles on chest auscultation'***

# Key elements of clinical assessment:







**Apnoeas?**

**High Risk patient?**

**Admission criteria:**

- **O2 sats persistently < 92% in room air**
- **Persisting severe respiratory distress e.g. marked recession, RR >60, grunting**
- **Apnoeic spells [observed or reported]**
- **Need for frequent suction**
- **Failed trial of feeding or intake < than 50%**



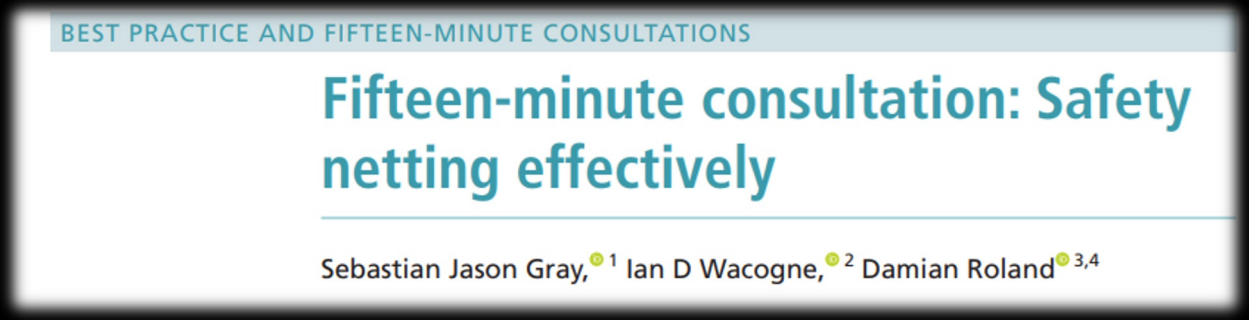


**Focus on supportive care**










**Gray SJ, Wacogne ID, Roland D**
**Fifteen-minute consultation: Safety netting effectively**
***Archives of Disease in Childhood - Education and Practice* 2019;104:226-230.**

# Case 2



- 2 year old
- 2 day history of ‘rattly’ cough and pyrexia
- Normally well
- No known allergies
- On examination:
  - Appropriately annoyed
  - Wet ‘rattly’ cough
  - Mildly tachypnoeic
  - No significant indrawing
  - Focal creps at right base

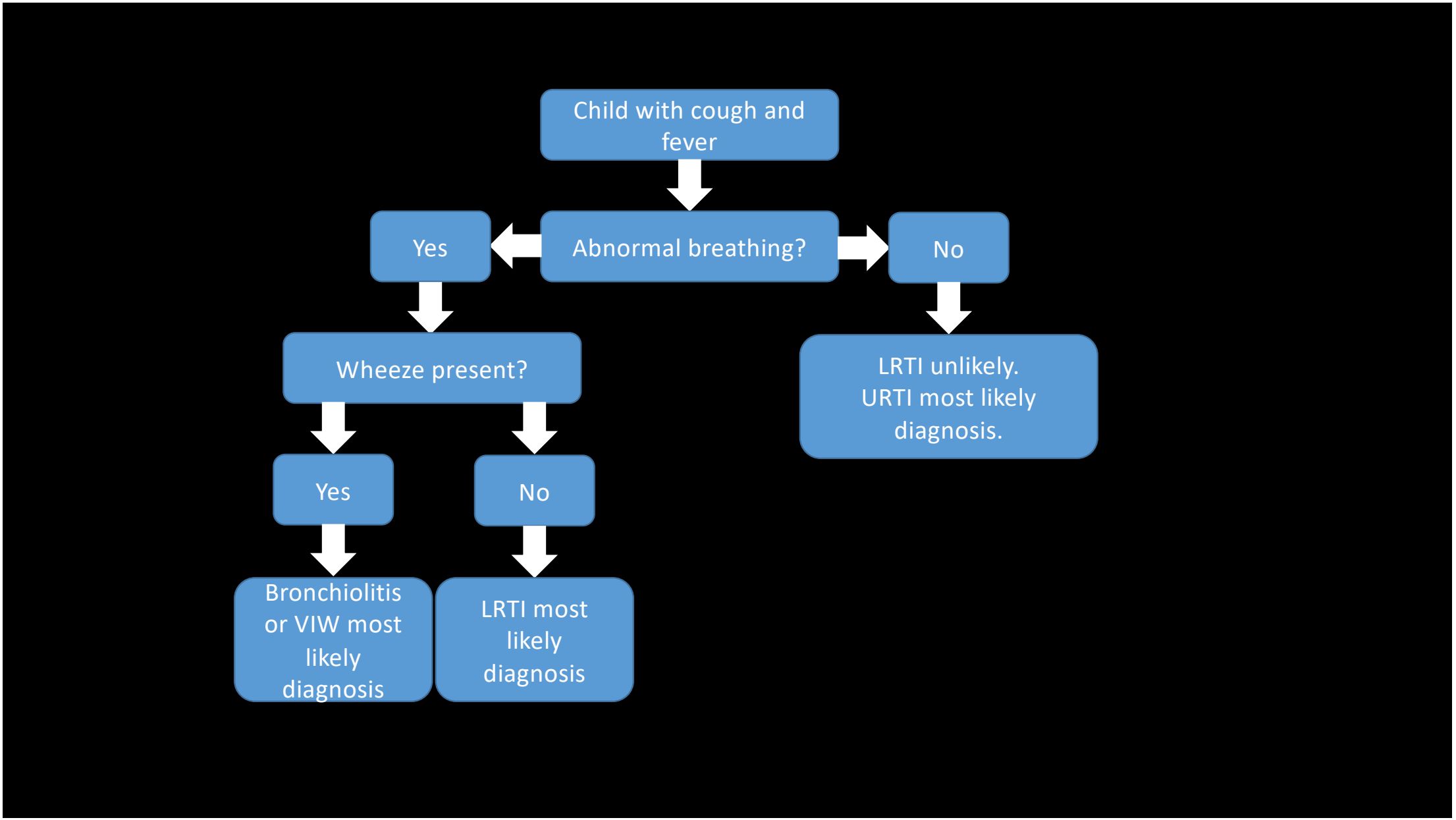
# Community Acquired Pneumonia



# High Risk Groups



*All children with a clear clinical diagnosis of pneumonia should receive antibiotics as bacterial and viral infections cannot be reliably distinguished from each other...*


Child with cough and fever
Abnormal breathing?
Yes
No
Wheeze present?
LRTI unlikely. URTI most likely diagnosis.
Yes
No
Bronchiolitis or VIW most likely diagnosis
LRTI most likely diagnosis

# Poll 1: Which antibiotic would you give first line?

1. Co-amoxiclav
2. Azithromycin
3. Amoxicillin
4. Clarithromycin
5. Other

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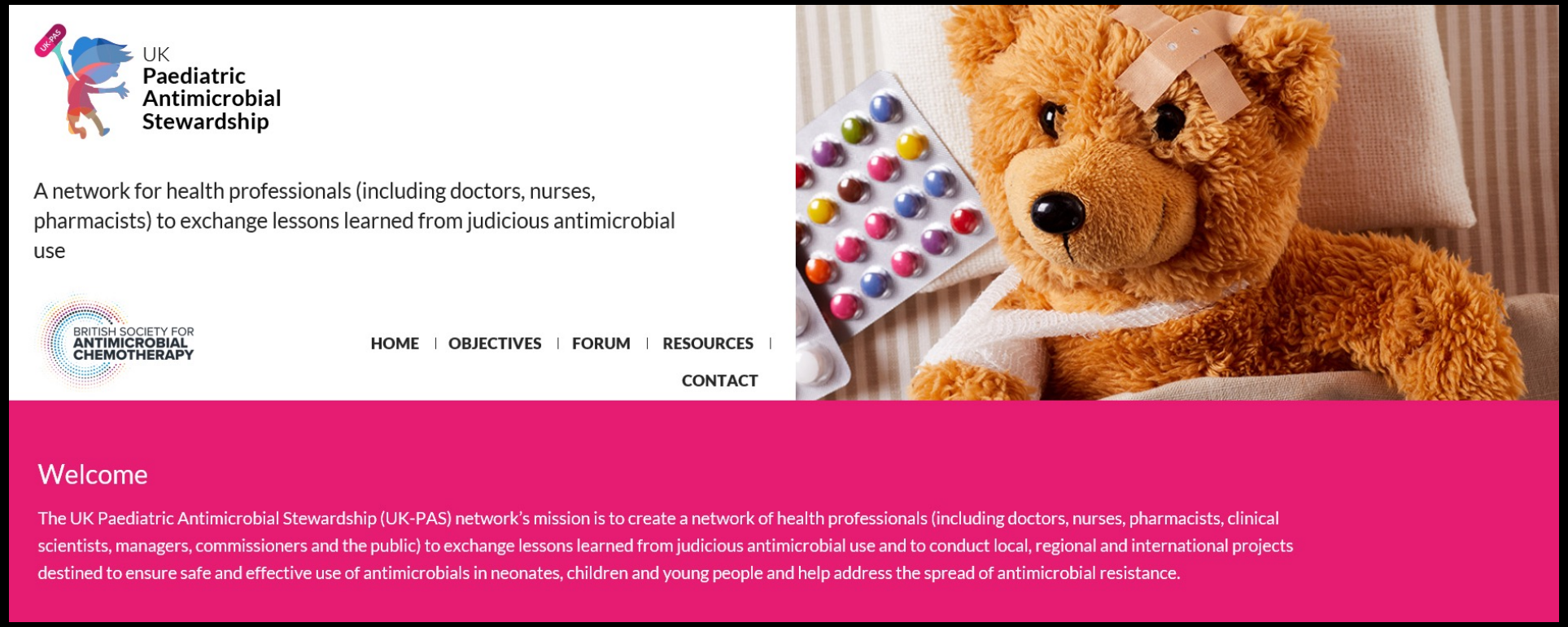
# Poll 2: Which antibiotic would you give first line if the patient had a penicillin allergy?

1. Co-amoxiclav
2. Azithromycin
3. Amoxicillin
4. Clarithromycin
5. Other

# Poll: Which antibiotic would you give first line?

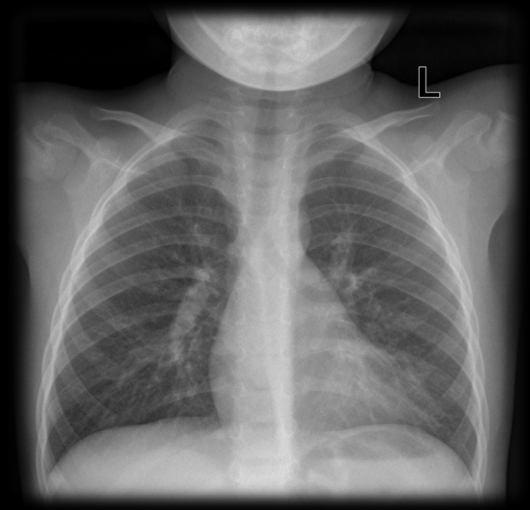
1. Co-amoxiclav
2. Azithromycin
3. Amoxicillin
4. Clarithromycin
5. Other






# https://uk-pas.co.uk

**NOT a routine investigation in children with suspected CAP**




**Consider if poor clinical response to treatment after 48 hours or concerns re potential complications**

**Children with signs and symptoms of pneumonia who are not admitted to hospital should NOT have a CXR**

**Follow up CXR should only be considered in those with collapse or persisting symptoms**

# Case 3



- 18 month old
- 3 month history of cough
- Parents describe a persistent wet cough
- No history of wheeze/atopy
- No other history of note
- On examination:
  - Thriving
  - Occasional wet cough
  - Otherwise examines well

# Poll 3: What is the most likely diagnosis?

1. Asthma
2. Cystic Fibrosis
3. Persistent Bacterial Bronchitis
4. Ciliopathy
5. Immune-deficiency



PBB???

# Case 4



- 4 year old
- 2 day history of coryzal symptoms and cough
- Over last 24 hours – increased work of breathing
- On examination:
  - Coryzal
  - Tachypneoic
  - Bilateral expiratory wheeze on auscultation
  - Mild – moderate in-drawing

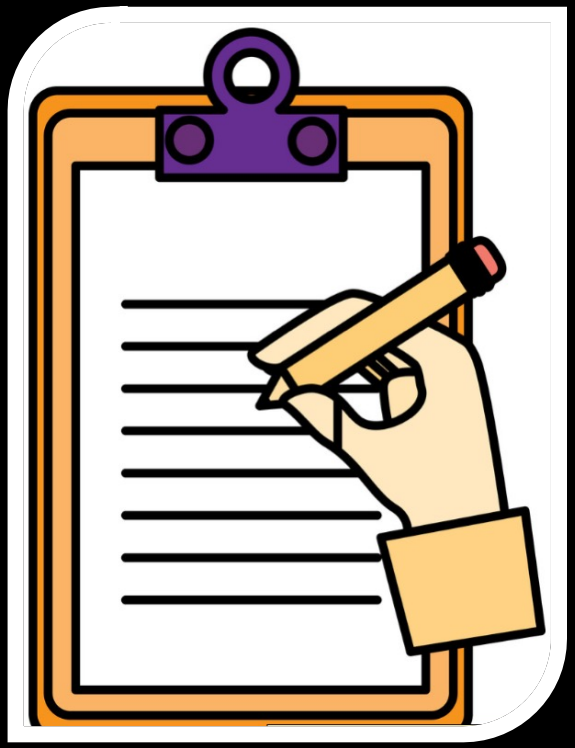
# Poll 4: What is the most likely diagnosis?

1. Viral induced wheeze
2. Exacerbation of asthma
3. Community acquired pneumonia
4. Need further information
5. Other



X





# VIW Vs Asthma

**Challenging in this age group –**

- **Various phenotypes suggested including EVW and MTW**
- **Difficult to reliably distinguish between groups and who will respond to particular therapies**
- **ERS, BTS/SIGN and GINA all vary slightly in recommendations**
- **RBHSC Respiratory team consensus opinion based on recommendations in these guidelines…**

# Acute exacerbations of wheeze….



| Oral Steroids |
| --- |
| 1. All children with a diagnosis of asthma and acute wheezing unless very mild. |
| 2. Older children with acute wheezing (>5yrs) |
| 3. Younger children (1-5yrs) with acute wheezing severe enough to warrant admission to hospital |
| 4. Younger children (1-5yrs) with a second episode of wheeze in the same season |

# Dex Vs Pred

# Controller therapy….

| Inhaled Corticosteroids |
| --- |
| 1. All children with asthma |
| 2. All children with more than one episode of wheezing in the same season |
| 3. Consider in children with wheeze with a strong (1st degree) family history of atopy or asthma. |

**Start as a ‘therapeutic trial’**

**Children <1 should probably not receive oral steroids or inhaled corticosteroids without very careful thought**

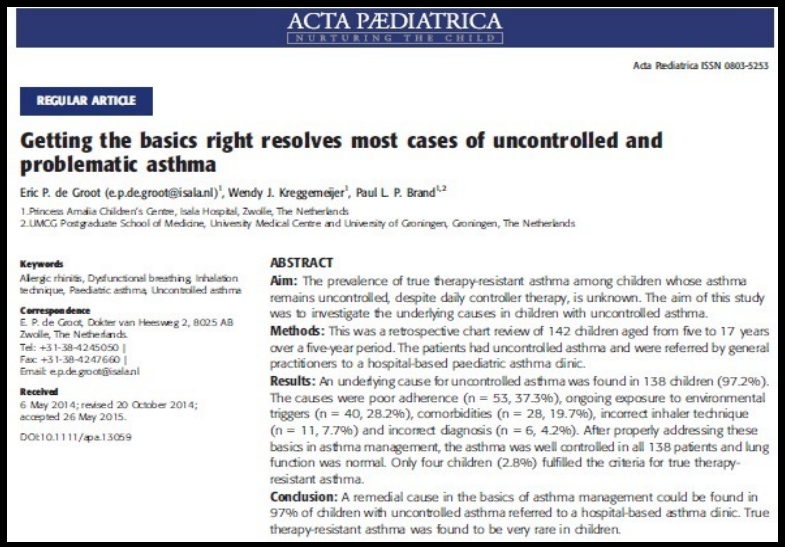
# Controller therapy….




Vs




NDC 55111-763-03
DR.REDDY'S
Unit dose carton of 30 packets
Montelukast Sodium Oral Granules, 4 mg*
For Pediatric Patients 6 months to 5 years of age.
PHARMACIST: DISPENSE THE ACCOMPANYING
Rx Only
ORGANIC • ORGANIC • ORGANIC
EARTH'S BEST
ORGANIC
2
6 months+
Apples & Plums
USDA
ORGANIC



ACTA PÆDIATRICA
NURTURING THE CHILD

Acta Pediatrica ISSN 0803-5253

REGULAR ARTICLE

## Getting the basics right resolves most cases of uncontrolled and problematic asthma

Eric P. de Groot (e.p.de.groot@isala.nl)[1], Wendy J. Kreggemeijer[1], Paul L. P. Brand[1,2]

1.Princess Amalia Children's Centre, Isala Hospital, Zwolle, The Netherlands
2.UMCG Postgraduate School of Medicine, University Medical Centre and University of Groningen, Groningen, The Netherlands

**Keywords**
Allergic rhinitis, Dysfunctional breathing, Inhalation technique, Paediatric asthma, Uncontrolled asthma

**Correspondence**
E. P. de Groot, Dokter van Heesweg 2, 8025 AB Zwolle, The Netherlands.
Tel: +31-38-4245050 |
Fax: +31-38-4247660 |
Email: e.p.de.groot@isala.nl

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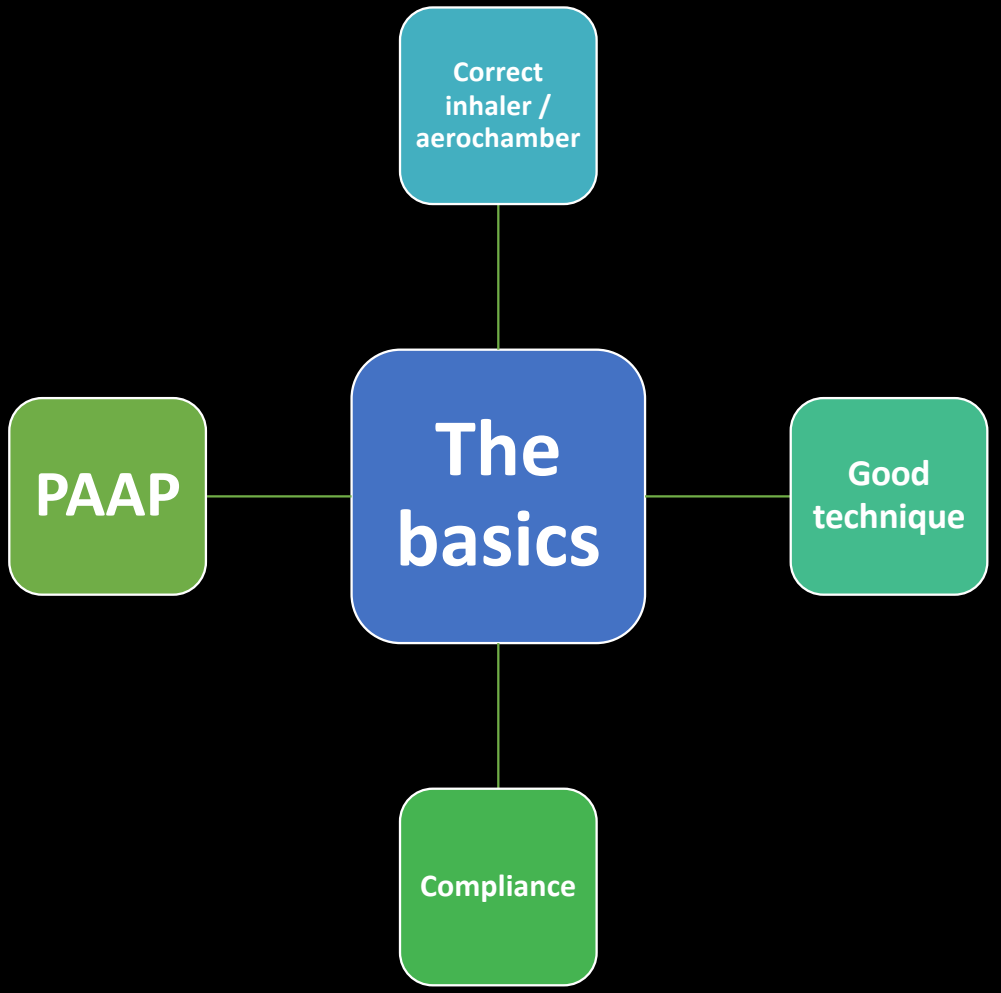
**ABSTRACT**

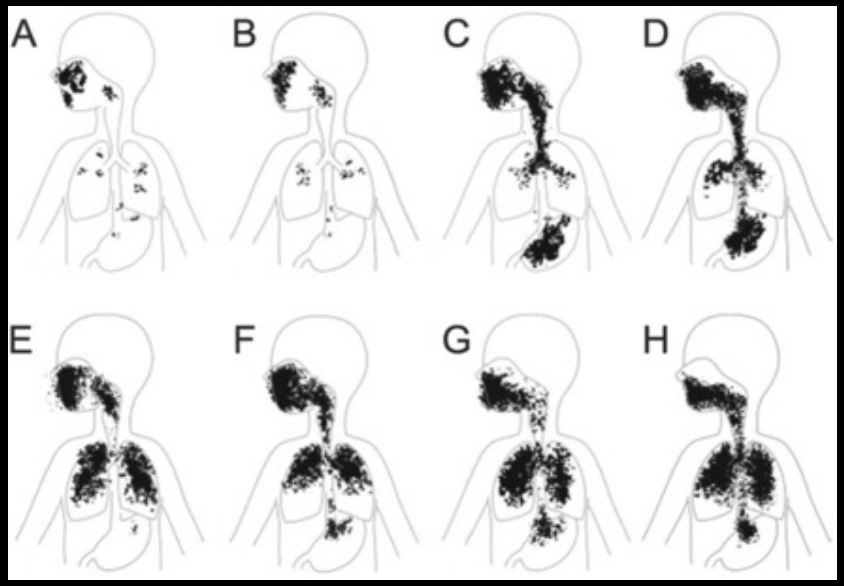
**Aim:** The prevalence of true therapy-resistant asthma among children whose asthma remains uncontrolled, despite daily controller therapy, is unknown. The aim of this study was to investigate the underlying causes in children with uncontrolled asthma.

**Methods:** This was a retrospective chart review of 142 children aged from five to 17 years over a five-year period. The patients had uncontrolled asthma and were referred by general practitioners to a hospital-based paediatric asthma clinic.

**Results:** An underlying cause for uncontrolled asthma was found in 138 children (97.2%). The causes were poor adherence (n = 53, 37.3%), ongoing exposure to environmental triggers (n = 40, 28.2%), comorbidities (n = 28, 19.7%), incorrect inhaler technique (n = 11, 7.7%) and incorrect diagnosis (n = 6, 4.2%). After properly addressing these basics in asthma management, the asthma was well controlled in all 138 patients and lung function was normal. Only four children (2.8%) fulfilled the criteria for true therapy-resistant asthma.

**Conclusion:** A remedial cause in the basics of asthma management could be found in 97% of children with uncontrolled asthma referred to a hospital-based asthma clinic. True therapy-resistant asthma was found to be very rare in children.






A. MDI through loose fitting mask

B. Nebuliser through loose fitting mask

C. MDI through tight mask in crying child

D. Nebuliser through tight fitting mask in crying child

E. MDI through tight mask in quiet child

F. MDI through tight mask in quiet child

G. Nebuliser through tight mask in quiet child

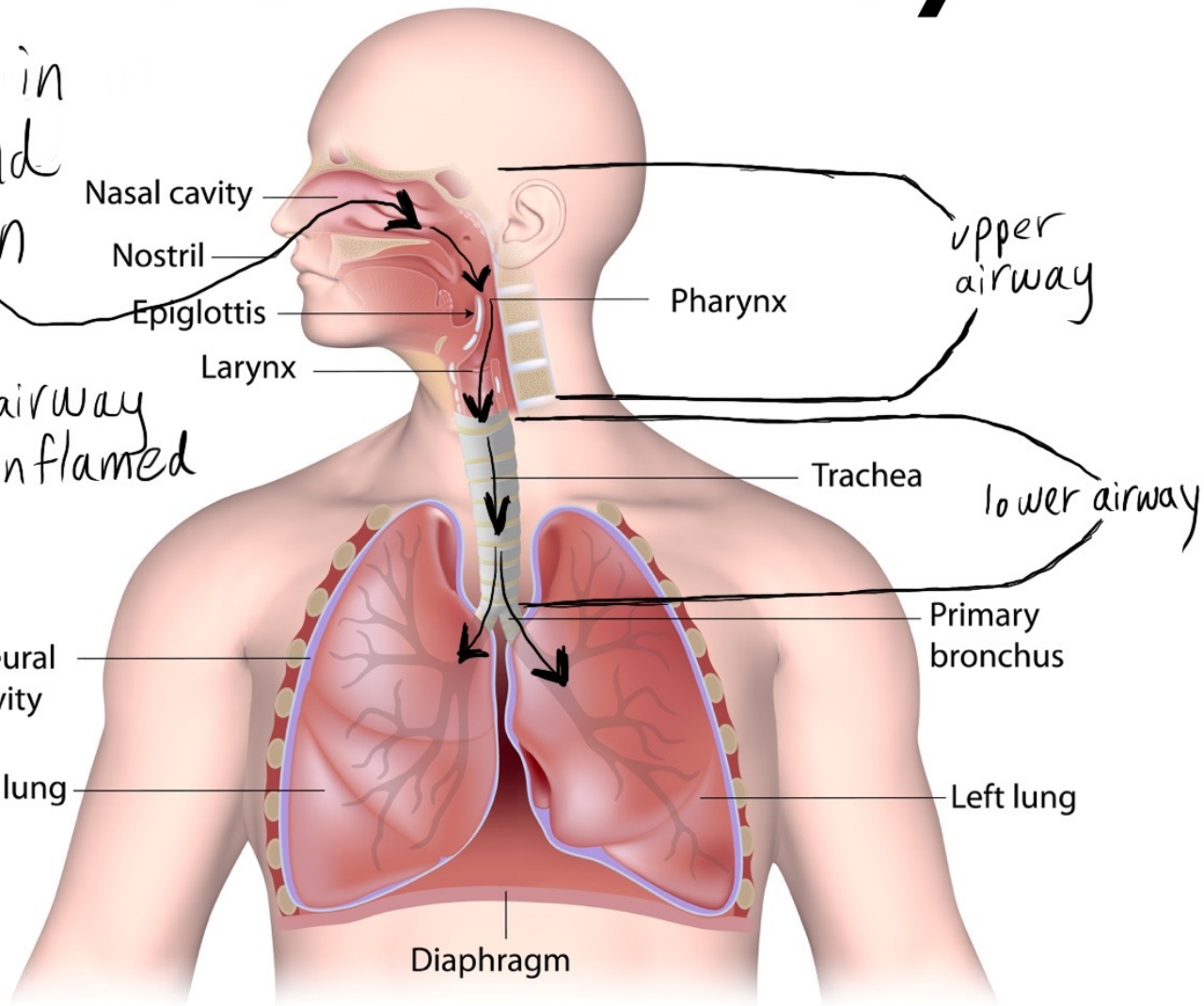
H. Nebuliser through tight mask in quiet child

# The United Airway

1. breath in air and pollen

2. lining of airway becomes inflamed

3. symptoms develop




Paediatric
FOAMed
'GREENER' ASTHMA TREATMENT:
GOLDEN OPPORTUNITY OR RED FLAG?



**Over to Catherine….**

# Thank you….

*Any questions?*

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