Local management – Pneumothorax

Pneumothorax suspected

Haemodynamic compromise - Emergency management of pneumothorax

- High flow mask oxygen (10l/min)
- Immediate needle thoracocentesis with a large-bore cannula on the affected side (2nd intercostal space, mid-clavicular line)
- Urgent senior support
- IV access and Chest drain insertion
- Contact on-call respiratory consultant at Children's Hospital for Wales and arrange transfer to Cardiff

No Haemodynamic compromise

- Erect PA CXR
- Assess size of pneumothorax : **Small** <20% distance from hilum to chest wall
  Large >20% distance from hilum to chest wall
- Is this a **primary** or **secondary** pneumothorax
- Contact on-call respiratory consultant at Children's Hospital for Wales

Small primary pneumothorax, no respiratory distress

- Observe for 4 hours and repeat Erect PA Chest Xray
- If pneumothorax is same size or smaller, patient can be discharged
- 48 hour follow up with repeat CXR
- If symptoms are improving and pneumothorax has resolved at 48 hours, patient can be discharged with advice about recurrence
- If pneumothorax is still present, review every 3-4 days until complete resolution
- Refer to tertiary respiratory team for follow up

Large primary pneumothorax, or any pneumothorax with respiratory distress

- Large pneumothoraces require chest drain insertion. Needle aspiration is not indicated in children
- A chest drain must be inserted before transfer to the Children's Hospital for Wales
- Small bore pigtail (10F) chest drains inserted using Seldinger technique are usually adequate
- Suction is not required in the first 24 hours. Re-expansion pulmonary oedema may occur with rapid reinflation
- A bubbling drain should never be clamped
- High Flow mask oxygen adds little once a chest drain is inserted
- Transfer patient to the Children's Hospital for Wales for further management

Secondary Pneumothorax

- In children with an underlying lung disease, pneumothorax is always potentially dangerous
- Threshold for chest drain insertion is much lower and there is likely to be a persistent leak
- Contact on call respiratory consultant at Children's Hospital for Wales for advice

Assess local skill set & define local roles for chest drain insertion in advance.

Skill set may differ for infants, children and teenagers

Chest drain skills may lie with

- General paediatrician
- ER Consultant
- General surgeon
- Adult intensivist
- Anaesthetist
- Neonatologist
- WATCH team

All Wales Paediatric Respiratory Network

Noah's Ark
Children's Hospital for Wales
Ysbyty Plant Cymru