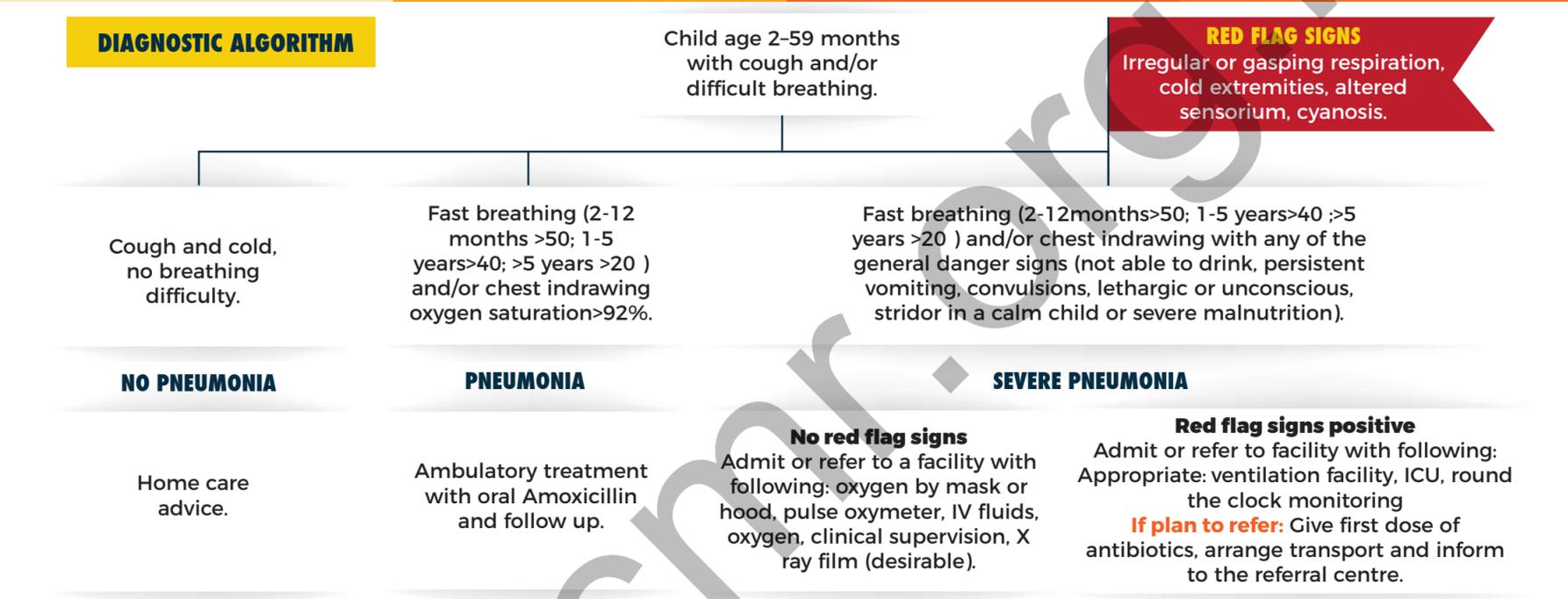
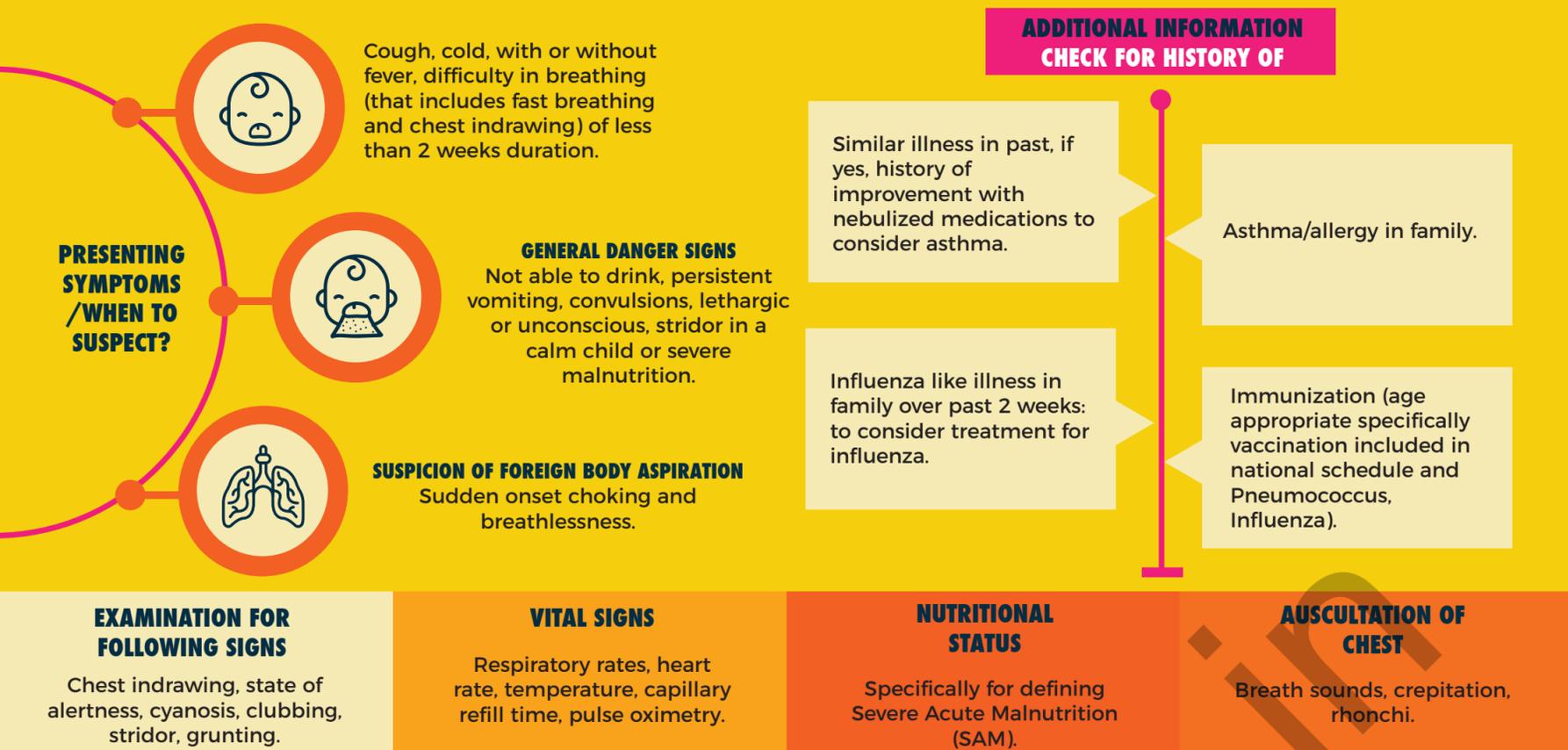




Standard Treatment Workflow (STW) for the Management of SEVERE PNEUMONIA IN CHILDREN ICD10-J18.9



INVESTIGATIONS	TREATMENT	COMPLICATIONS AND THEIR TREATMENT
ESSENTIAL: Hemogram, random blood sugar, CRP, chest X-ray. DESIRABLE: Blood culture, pleural tap, serum electrolytes, renal and liver function tests. OPTIONAL: ABC, lung ultrasound, PCT, tracheal aspirate (gram stain with culture), bronchoscopy/BAL, microbiology culture, investigations for atypical organisms, PCR for viral etiology.	OXYGEN INHALATION: by mask (1-2 L/min) or hood (4-6 L/Minute) to maintain oxygen saturation > 95%. IV ANTIBIOTICS: <ul style="list-style-type: none"> For children 2-59 months: Ampicillin 100-200mg/kg in four divided doses + Gentamicin 5-7.5 mg/kg as single dose daily. For children >5 years: Ampicillin/Amoxicillin, add macrolide (Azythromycin/Erythromycin) if atypical pneumonia is suspected. If suspected Staphylococcal pneumonia in any age (Pneumatocele on CXR, post measles, infected scabies or pyoderma) add Cloxacillin/Amoxiclavulanic acid. SUPPORTIVE CARE: Paracetamol for fever, IV fluid, bronchodilators (inhaled) as needed. WHEN AND WHAT TO SWITCH TO ORAL AND DURATION: <ul style="list-style-type: none"> Child is afebrile, RR has returned to below age specific cutoffs, no chest indrawing and accepting orally: switch to oral Amoxicillin to complete a total of 5-7 days duration (include duration of IV also in it). If getting Doxycillin/Amoxyclav: continue oral Cloxacillin or Amoxclav for 2 weeks. Start feeding as soon as possible when child shows improvement. IF ASSOCIATED SAM: follow treatment guidelines for SAM. 	NON RESPONDERS: persistence of symptoms and/or signs 48-72 hours after initiation of appropriate treatment-change antimicrobials. PLEURAL EFFUSION: diagnostic aspiration. EMPYEMA: drainage with ICD. LUNG ABSCESS: change antibiotics for longer duration (4-6 weeks). PNEUMOTHORAX: Intercostal drainage. RESPIRATORY FAILURE: consider ventilation. INFECTION IN OTHER SITES: identify and treat appropriately.

ADDITIONAL INFORMATION	FIRST LINE	ALTERNATE FIRST LINE	SECOND LINE
First and second line antibiotics for severe pneumonia:	Ampicillin	First gen Cephalosporins	Amoxiclav Cefuroxime Cefotaxime/Ceftriaxone
WHEN TO REFER TO HIGHER CENTERS? Facilities (as described above) for treatment or complications (if develops) are not available, suspecting chronic respiratory problems.	WHEN TO SUSPECT ACUTE BRONCHIOLITIS? A child below 2 years of age fulfilling case definition of first episode of severe pneumonia with predominant finding of wheezing on auscultation.	WHEN TO SUSPECT ASTHMA? A child of age >3 years with history of recurrent cough, cold, wheezing with or without fever with good response to bronchodilator and personal or family history of asthma.	WHEN TO SUSPECT CHRONIC RESPIRATORY PROBLEM? Child has any of the following: severe malnutrition, clubbing, feeding difficulty, family history of sibling death due to pneumonia, multi site infections (diarrhea, ear discharge oral thrush).

Discharge when child is switched to oral medications, accepting oral for 24 to 48 hours

KEEP A HIGH THRESHOLD FOR INVASIVE PROCEDURES

REFERENCES

- Integrated Management of Childhood Illness (IMCI) (revised). Geneva, World Health Organization/The United Nation Children's Fund (UNICEF), 2014 (http://www.who.int/maternal_child_adolescent/documents/IMCI_chartbooklet/en/).
- Revised WHO classification and treatment of childhood pneumonia at health facilities. http://apps.who.int/iris/bitstream/handle/10665/137319/9789241507813_eng.pdf;jsessionid=8BF6F1C94BD7BA81B8F464D4CBA40249?sequence=1
- Bradley JS, Byington CL, Shah SS, et al. Executive summary: the management of community-acquired pneumonia in infants and children older than 3 months of age: clinical practice guidelines by the Pediatric Infectious Diseases Society and the Infectious Diseases Society of America. Clin Infect Dis 2011;53:617-30.
- Lodha R, Kabra SK, Pandey RM. Antibiotics for community-acquired pneumonia in children. Cochrane Database Syst Rev. 2013 Jun 4;(6):CD004874