

Pediatric Lower Respiratory Tract Infections

Imaging Guidelines and Recommendations

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KEY POINTS

- Chest imaging may not be needed in children with noncomplicated community-acquired pneumonia (CAP) responding to therapy.
- Chest radiograph is the initial imaging tool recommended for the following:
 - a neonate or child with fever of unknown source and respiratory symptoms;
 - an immunocompetent child with CAP not responding to treatment or resulting to hospitalization; an immunocompetent child with hospital-acquired pneumonia;
 - immunocompromised child with CAP; and
 - a child with suspected tuberculosis (TB).
- There is some evidence for the use of ultrasound (US) detection of pneumonia in children and it may be used as an alternative imaging tool although future studies confirming the initial results currently are needed. US also can be used to evaluate moderate to large pleural effusion and suspected lung abscess seen on the initial chest radiograph. Training and expertise are required in the performance of this test.
- Chest Computed Tomography (CT) without or with IV contrast can be used for further evaluation of immunocompromised children with multiple, diffuse, or confluent chest radiographic findings and for immunocompromised children with equivocal chest radiographic results.
- Chest CT with IV contrast is recommended for children with recurrent pneumonia, pneumonia with complicated lung parenchymal disease (eg, abscess and necrotizing pneumonia), or pneumonia with complicated pleural disease (eg, empyema, bronchopleural fistula, and moderate to large effusion).
- Evidence is available for the use of Magnetic Resonance Imaging (MRI) in complicated pneumonia particularly in abscess formation. MRI also is utilized to evaluate mediastinal lymphadenopathy, especially in children with thoracic TB.

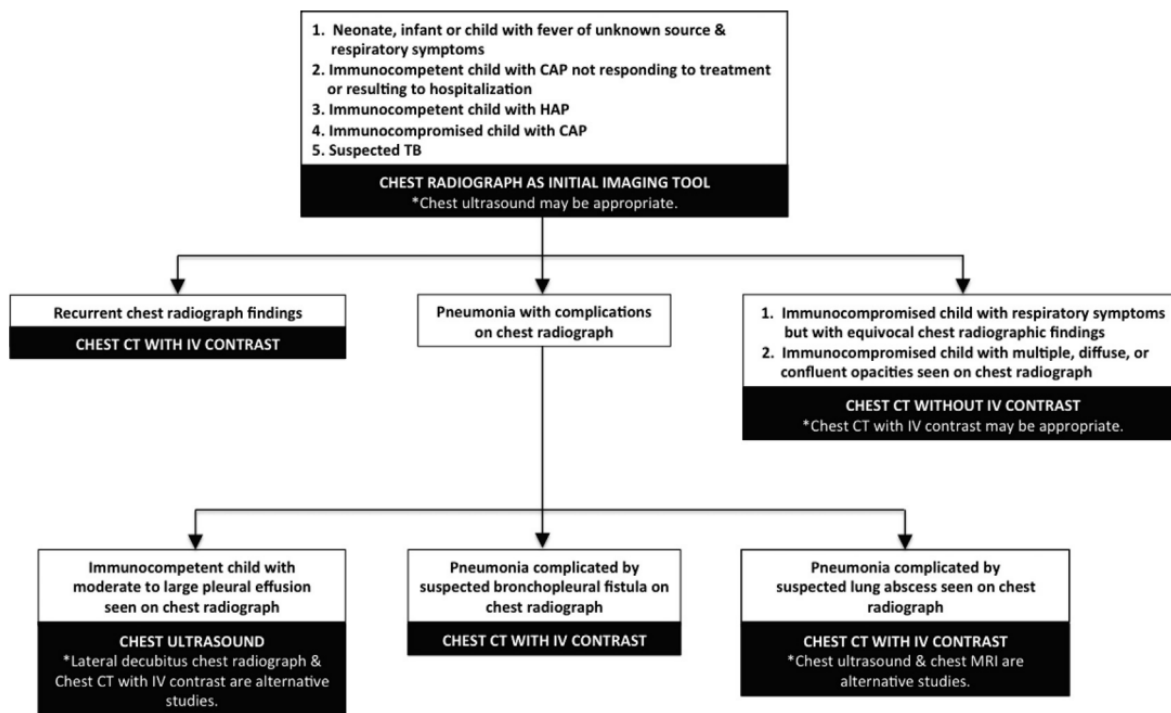


Fig. 1. Evidence-based algorithm in the imaging of children with lower respiratory tract infection. * Alternative imaging study that may be appropriate. CAP, community acquired pneumonia; CT, computed tomography; HAP, hospital acquired pneumonia; IV, intravenous contrast; TB, tuberculosis.