Good response, draining well. Monitor with chest x-ray at 48 hrs. Chest tube can be removed if no air leak and drainage <1ml/kg/48hrs

Persistent or progressive symptoms (hypoxemia, worsening respiratory distress, ill-appearing): Repeat US. If reaccumulation of fluid or loculation, go to complicated effusion pathway.

Note: These guidelines apply to immunocompetent with community acquired pneumonia with effusion.

**Diagnosis of pneumonia and parapneumonic effusion on chest x-ray**

**Small effusion:** <1/4 thorax opacified on upright chest x-ray

**Antibiotics only:**
First line: ampicillin Beta-lactam allergy: clindamycin or Levofoxacin. Consider azithromycin if at risk for complicated atypical pneumonia.

**Good Clinical Response?**

**YES**
Continue Antibiotics
If not responding within 24-48 hours or worsening (fever, hypoxemia, respiratory distress, ill-appearing): reassess effusion with ultrasound. Go to moderate to large effusion pathway.

**NO**
Management of chest tube on Inpatient Floor- pediatric surgery

**Moderate to large effusion:** > 1/4 thorax opacified on upright chest x-ray; and/or respiratory compromise.

**Not loculated, “simple”**
Antibiotic recommendations:
First line: ceftriaxone +/- clindamycin Beta-lactam allergy: clindamycin and levofoxacin.

Call PICU for chest tube insertion and drainage. Consult ID and Pulmonary

**10.5 Fr chest tube**
10.5 Fr chest tube with 3 doses of tPA 4mg tPA/40mL saline x 3 with 1 hour dwell 24 hours apart first dose in PICU.

**Transfer to floor if clinically stable**

**Good Clinical Response?**

**YES**

Persistent loculated effusion: VATS with debridement or open chest debridement with decortication.

**NO**
Parenchymal disease only: continue IV antibiotics.

**Loculated, “complicated”**
Antibiotic recommendations:
First line: ceftriaxone and clindamycin Beta-lactam allergy: clindamycin and levofoxacin. Consider ceftriaxone and vancomycin OR ceftriaxone and linezolid if critically ill or in the presence of cavitary or necrotizing pneumonia.

Consult pediatric surgery and PICU for chest tube insertion fibrinolytic therapy (vs VATS) Consult ID and pulmonary

Transfer to floor after first dose of TPA if clinically stable

**Authors**
Chhavi Katyal, MD
Medical Director

Steven H. Borenstein, MD
Pediatric Surgeon

Dominique M. Jan, MD
Chief, Pediatric Surgery
Director, Pediatric Transplantation Surgery

Raanan Arens, MD
Chief, Respiratory and Sleep Medicine

Betsy Herold, MD
Chief, Infectious Disease Division

George Ofori-Amarto, MBChB, FRCP
Chief, Critical Care Medicine

Katherine M. O’Connor, MD
Pediatric Hospital Medicine

**Notes**

- These guidelines apply to immunocompetent with community acquired pneumonia with effusion.
- Management of chest tube on Inpatient Floor- pediatric surgery
- **Good Clinical Response?**
  - **YES**
    - Persistent loculated effusion: VATS with debridement or open chest debridement with decortication.
  - **NO**
    - Parenchymal disease only: continue IV antibiotics.