Pneumonia classification

*Uncomplicated pneumonia (children with all of the following):*
- Cough or difficult breathing (observed or reported by caretaker), according to the clinician surveyor
- Rapid respiratory rate (>50 breaths/minute for children 2–11 months; >40 breaths/minute for children 12–59 months), according to the clinician surveyor
- Illness does not meet criteria for severe pneumonia (below)

*Severe pneumonia (children with both of the following):*
- Cough or difficult breathing (observed or reported by caretaker), according to the clinician surveyor
- At least one of the following signs of severe illness, according to the clinician surveyor: lethargy, unconsciousness, convulsions, history of convulsions, inability to drink, vomiting everything, lower chest wall indrawing, or stridor

Recommended treatment

*For uncomplicated pneumonia:* treatment with a 7-day course of either cotrimoxazole (trimethoprim-sulfamethoxazole) (first-line antibiotic recommended by the Benin adaptation of Integrated Management of Childhood Illness [IMCI] guidelines) or amoxicillin (second-line antibiotic) with IMCI-recommended dosing.

*For severe pneumonia:* either admission to the health facility, or referral to a health facility with an inpatient service plus a pre-referral dose of ampicillin with IMCI-recommended dosing.

Adequate treatment

- Treatment that was not “recommended” (see above), but was still considered effective based on standard clinical textbooks [18, 19]. For example:
  - Treatment with IMCI-recommended antibiotics that were either overdosed or dosed in a way not recommended by IMCI guidelines, but still therapeutic and not toxic (e.g. amoxicillin dosed twice daily).
  - Treatment with antibiotics not recommended by IMCI but that had been given and would treat *Streptococcus pneumoniae* and *Hemophilus influenzae* (e.g. erythromycin) and that were adequately dosed.

NB. IMCI guidelines also recommend cotrimoxazole, amoxicillin, and injectable ampicillin for other illnesses that children with pneumonia might have had (e.g. ear infection or very severe febrile disease); treatments appropriate for pneumonia were accepted regardless of whether or not we were sure the treatment was prescribed for pneumonia.