Appendix

1. Recurrent respiratory tract infections (RRTIs) in China are defined：

≥ 7 upper RTIs per year, ≥ 3 tracheobronchitis per year, or ≥ 2 pneumonias per year if age is 0 - 2 years; ≥ 6 upper RTIs per year, ≥ 2 tracheobronchitis per year, or ≥ 2 pneumonias per year if age is 2 - 5 years; ≥ 5 upper RTIs per year, and ≥ 2 tracheobronchitis per year or ≥ 2 pneumonias per year if age is 5 - 14 years.

2. Severe MPP or MPP was diagnosed according to standard guidelines

The diagnosis of pneumonia was based on the clinical manifestations, which included dry or productive cough, fever, dyspnea, abnormal breathing sounds, and ra- diological pulmonary abnormalities. The diagnosis of M pneumonia infection was based on positive serological results: four-fold or greater rise of *M. pneumoniae* -IgG and positive IgM antibody.

Severe MPP was diagnosed when any one of the following criteria was met.

1. Obvious tachypnea: respiratory rate ≥ 60 breaths.min^{-1} at age < 2 months, ≥ 50 breaths.min^{-1} at ages 2 - 12 months, ≥ 40 breaths.min^{-1} at ages 1 - 5 years, and ≥ 30 breaths.min^{-1} at age ≥ 5 years (excluding those with fever and were crying), with or without dyspnea (defined as nasal alar breathing, groaning, and the three-concave sign) and cyanosis.
2. Hypoxemia: pulse blood oxygen saturation ≤ 0.92 under conditions of induced air.
3. Continuous fever: axillary temperature ≥ 38.5℃ or chest radiological progression after macrolide therapy for 7 days or longer.
4. Invasion of many lobar and segmental bronchi or infiltration ≥ 2/3rd of a lung on chest X-ray examination.
5. Pulmonary complications such as pleural effusion, atelectasis, pulmonary necrosis, or lung abscess.
6. Evidence of severe damage to other organ systems such as central nervous system infection, heart failure, myocarditis, and obvious electrolyte or acid-base disturbance.