Supplementary methods

Metagenomics next-generation sequencing

Threshold Criteria for Interpretation of mNGS Result

SMRN: number of sequences strictly mapped at species level.

SMRN of microorganisms in sample is higher than in the negative control. For different types of microorganisms, the thresholds were set as follows:

Bacterial/virus/fungus/mycoplasma/chlamydia: SMRN $\geq 3$;

Parasite: SMRN $\geq 100$;

Mycobacterium tuberculosis: SMRN $\geq 1$.

Definite pathogens of pulmonary infection; excluding the normal flora of oral cavity, respiratory tract or the skin (via a large number of literature search). Meets clinical judgment or targeted treatment response by three experienced senior clinicians. Microorganisms detected by mNGS which meet all the criteria were identified as suspected pathogens.