



* Recommended antibiotic treatment according to table 1.

The results of a Gram stain from sputum or pleural fluid, pneumococcal antigen detection in sputum or pleural fluid, *Legionella pneumophila* serogroup 1 urinary antigen detection test could be obtained within 2 hours of admission, 24 hours a day.

Figure S1 Outcome of treatment strategies at admission and after obtaining microbial culture results in pathogen directed treatment group.