Appendix

Clinicians

In Switzerland physicians can start to work as “assistant” physicians after having obtained their final diploma. Usually, no formal difference is made in the degree of autonomy in decision-making by year of training for “assistant” physicians (usually until a specialty title is obtained). “Assistant” physicians are supervised by a senior physician. In this study, we asked “assistant” physicians to assess the probability of pneumonia before and after LDCT. They were, however, allowed to discuss the probability with the help of their supervising senior physician.

Adjudication committee

After completion of the study, an adjudication committee, blinded to the results of the LDCT scan, retrospectively rated the probability of pneumonia based on all the other available patient records: CXRs, biological and microbiological results, and hospital notes, including the final medical report, but with all references to the LDCT results removed. The committee was composed of eleven board-certified specialists in infectious diseases, respiratory diseases, internal medicine and radiology. All were senior attending physicians with expertise in caring for patients with pneumonia. Each patient’s diagnosis of pneumonia was analysed by the adjudication committee as follows: first, each expert gave an individual opinion of the probability of the patient having pneumonia on a five-point Likert scale (excluded, low, intermediate, high, certain); second, each expert re-examined the cases where the committee had been in disagreement, in full knowledge of the other experts’ first decisions; finally, in plenary session and in the presence of a radiologist, the adjudication committee made consensus decisions on cases that remained unresolved after the first two phases. The adjudication committee’s final decision was considered as the reference diagnosis. The rate of agreement between the adjudication committee’s experts was assessed. Their probabilities of a diagnosis of pneumonia were compared with the pre-LDCT probability.

Table S1. Management of antibiotic in patients with a low post-LDCT probability of pneumonia

Patients with a low probability of pneumonia after LDCT	**57**	
Appropriate management of antibiotics	46	
-discontinuation	*17*	
-continuation because of a differential diagnosis	*29*	*14 patients with COPD, 12 with urinary infection, 2 with digestive sepsis, 1 with febrile neutropenia*
Inappropriate continuation of antibiotics	11	

LDCT: low-dose computed tomography; COPD: chronic obstructive pulmonary disease.

Figure S1. ROC curve of the post-LDCT probability of a diagnosis of pneumonia compared with the reference diagnosis