

**Supplementary Table 1.** ICD-9-CM codes of the diagnosis

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Study population: pneumonia	480–486
Intensive care unit	
Overall dementia	290.0, 290.10–290.13, 290.20–290.21, 290.3, 290.40–290.43, 290.8–290.9, 331.0
Alzheimer’s disease	331.0
Vascular dementia	290.4
Other degenerative dementia	290.x except 290.4
Excluding	
Lung abscess	513
Empyema	510
Comorbidities	
Hypertension	401–405
Diabetes mellitus	250
Atrial fibrillation	427.31
Stroke	430–438, except 437.0
Cerebral atherosclerosis	437.0
Other atherosclerosis	440
Fracture of lower limbs	820–821, 823, OP81.51–OP81.54
Cancer	140–208
Asthma	493
Chronic obstructive pulmonary disease	490–492, 495–496
Bronchiectasis	494
Idiopathic pulmonary fibrosis	516.31
Coronary artery disease	410–414
Acute respiratory failure	518.81
Acute kidney injury	584
Chronic kidney failure	585
Hemodialysis	V45.11
Obesity	278
Cirrhosis of the liver	571.2, 571.5–571.6
Heart failure	428
Respirator dependency	V46.1
Immunocompromised	279

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ICD-9-CM, International Classification of Diseases, Ninth Revision, Clinical Modification