ONLINE SUPPLEMENT – APPENDIX C:
ALGORITHMS AND CODES FOR IDENTIFYING IPD AND PNEUMONIA

Appendix C. Diagnosis, procedure, and drug codes for algorithms identifying IPD and PNE requiring hospitalization

Condition	ICD-9-CM Codes	ICD-9-CM Description	HCPCS Codes	HCPCS Description	Rx	Algorithms Episode
IPD						
Bacteremia	790.7, 771.83 + 041.2	Bacteremia + pneumococcus				Criteria: first listed inpatient Dx (episodes must be 90 days apart)
	038.2	Pneumococcal septicemia			Antibiotics	
	038.9 + 041.2	Unspecified septicemia + pneumococcus				
Meningitis	320.1	Pneumococcal meningitis				
	320.9 + 041.2	Meningitis due to unspecified bacterium + pneumococcus				
	322.9 + 041.2	Meningitis, unspecified + pneumococcus				
Other	421.x + 041.2	Endocarditis + pneumococcus				Criteria: first listed inpatient Dx (episodes must be 90 days apart)
	711.0 + 041.2	Septic arthritis + pneumococcus			Antibiotics	
	730.0x, 730.2x + 041.2	Osteomyelitis + pneumococcus				
Pneumonia						
All-Cause						
Pneumonia	480-486, 487.0	Viral, bacterial, unspecified pneumonia				
	510.x	Empyema				
	511.1, 511.9	Pleural effusion				Criteria: pneumonia as first listed inpatient Dx OR bacteremia/respiratory failure as first listed inpatient Dx AND pneumonia as second listed inpatient Dx (episodes must be 90 days apart)
Bacteremia/respiratory failure	038.XX	Septicemia				
	518.81	Acute respiratory failure			Antibiotics	
	518.82	Chronic respiratory failure				
	771.81	Septicemia [sepsis] of newborn				
	771.83	Bacteremia of newborn				
	785.52	Septic shock				
	790.7X	Bacteremia				
	799.1X	Respiratory arrest				
	995.91	Sepsis				
	995.92	Severe sepsis				
Pneumococcal						
Pneumococcal pneumonia	481	Pneumococcal pneumonia				
	482.9 + 041.2	Bacterial pneumonia, unspecified + pneumococcus				
	485 + 041.2	Bronchopneumonia, organism unspecified + pneumococcus				
	486 + 041.2	Pneumonia, organism unspecified + pneumococcus				
	510.x + 041.2	Empyema + pneumococcus				
	511.1, 511.9 + 041.2	Pleural effusion + pneumococcus				Criteria: pneumococcal pneumonia as first listed inpatient Dx OR bacteremia/respiratory failure as first listed inpatient Dx AND pneumococcal pneumonia as second listed inpatient Dx (episodes must be 90 days apart)
Bacteremia/respiratory failure	038.XX	Septicemia				
	518.81	Acute respiratory failure			Antibiotics	
	518.82	Chronic respiratory failure				
	771.81	Septicemia [sepsis] of newborn				
	771.83	Bacteremia of newborn				
	785.52	Septic shock				
	790.7X	Bacteremia				
	799.1X	Respiratory arrest				
	995.91	Sepsis				
	995.92	Severe sepsis				