

1 **Table S1.** Classification of infections by groups with corresponding ICD-10 codes

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	Diagnosis	ICD-10 codes
<b>Group 1: Infections for which antibiotics are usually indicated</b>		
1	Miscellaneous bacterial infections	Tuberculosis (A15–A19); Certain zoonotic bacterial diseases (A20–A28); Other bacterial diseases including listeriosis, diphtheria, bartonellosis, erysipelas, and rickettsioses (A30–A37, A39–A49, A75–A79); Bacterial meningitis, encephalitis, and intracranial abscess (G00, G042, G049, G06); Mastoiditis (H70); Infective endocarditis (I33, T826); Acute epiglottitis (J051); Deep neck space infections (J36, J390, J391); Abscess of lung and mediastinum; Pyothorax (J85, J86); Infections of the jaws and mouth (K102, K122); Infections due to cardiac and vascular devices (T827); Infection due to internal prosthetic devices, implants and grafts (T857)
2	Sexually transmitted infections	Infections with a predominantly sexual mode of transmission (A50–A64); Other spirochetal diseases (A65–A69); Other diseases caused by chlamydia (A70–A74)
3	Pneumonia	Bacterial pneumonia (J13–J18)
4	Abdominal infections	Acute appendicitis (K35); Abscess of anal and rectal regions, intestine, and liver (K61, K630, K750); Peritonitis (K65); Cholecystitis and cholangitis (K800, K801, K803, K804, K810, K819, K830)
5	Orthopedic infections	Pyogenic arthritis and prosthetic joint infection (M00, T845); necrotizing fasciitis (M726); Infective myositis, synovitis and bursitis (M600, M650–M651, M710–M711); Osteomyelitis (M462–M465, M86)
6	Urinary tract infections	Acute pyelonephritis/pyonephrosis ((N10, N12, N136); Renal abscess (N151); Kidney infection, unspecified (N159); Acute cystitis (N300); Cystitis, unspecified (N308, N309); Urethritis and urethral abscess (N34); Urinary tract infections, unspecified (N390); Prostatitis and abscess of prostate (N41); Orchitis and epididymitis (N45); Catheter

		associated urinary tract infections (T835)
7	Pelvic inflammatory diseases	Pelvic inflammatory diseases (N70–N73, N751, N760–N764); Infections of genitourinary tract in pregnancy (O23)

**Group 2 : Infections for which antibiotics are potentially indicated**

1	Gastrointestinal infections	Intestinal infectious diseases (A00–A07, A09); Diverticulitis of intestine (K57)
2	Skin, cutaneous and mucosal infections	Infections of other skin and subcutaneous tissue including cellulitis, cutaneous abscess, furuncle, carbuncle, impetigo, acute lymphadenitis, folliculitis, mastitis (H050, J340, L00–L08, N61, T814); Infections of the eye and adnexa (H00, H440); Infective otitis externa (H600–H603)
3	Suppurative otitis media	Suppurative and unspecified otitis media (H66)
4	Pharyngitis	Streptococcal pharyngitis/tonsillitis (J020, J030); Acute pharyngitis/tonsillitis, unspecified (J029, J039); Scarlet fever (A38)
5	Sinusitis	Acute sinusitis (J01); Chronic sinusitis (J32)
6	Bronchitis and bronchiolitis with COPD	Acute bronchitis (J20) *; Acute bronchiolitis (J21) *; Unspecified acute lower respiratory infection (J22) *
7	Acne	Acne (L70)

**Group 3: Infections for which antibiotics are rarely indicated**

1	Nonbacterial gastrointestinal infections	Viral and other specified intestinal infections (A08)
2	Nonsuppurative otitis media	Nonsuppurative otitis media (H65)
3	Viral upper respiratory infection	Acute nasopharyngitis [common cold] (J00); Acute pharyngitis/tonsillitis due to other specified organisms (J028, J038); Acute laryngitis and tracheitis (J04); Acute obstructive laryngitis [croup] (J050); Acute upper respiratory infections of multiple and unspecified sites (J06); Cough (R05)
4	Influenza	Influenza (J10, J11)
5	Viral pneumonia	Viral pneumonia (J12)
6	Bronchitis and bronchiolitis without	Acute bronchitis (J20) **; Acute bronchiolitis (J21) **; Unspecified acute lower respiratory infection (J22) **

COPD

7 Noninfectious diarrhea Noninfective gastroenteritis and colitis, unspecified (K529)

8 Fever Fever of unknown origin (R50)

3 \*includes visits in which ICD-10 code for COPD (J41–J44) are present

4 \*\*includes visits in which ICD-10 code for COPD (J41–J44) are not present