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Duration of therapy: know when to stop

Adapted from Dr. Jennifer Grant's AMMI Canada Practice Point: Duration of Antibiotic Therapy for Common Infections
Presentation: https://www.ammi.ca/Content/zoom_0.mp4
AMMI Document: https://www.ammi.ca/Content/Duration%20of%20Therapy%20nov%2024.pdf

Key considerations

1. Certainty of clinical diagnosis
2. Patient factors
3. Minimum treatment duration for condition
4. Clinical response to treatment
5. Impacts of excess duration (C diff risk, ADRs, length of stay, resistance)

Below discussions do NOT apply to patients with factors that may compromise recovery such as relevant comorbidities (ie. structural lung disease or urological abnormalities), immunodeficiency, genetic immune defects, recent immunotherapy, chemotherapy or corticosteroids.

Community acquired pneumonia (CAP) → minimum 5 days, treat until clinically stable for 48-72 hours

- 7 days sufficient for CAP due to *Staphylococcus aureus*, *Pseudomonas aeruginosa* and other non-fermenting bacteria, unless other reasons exist to extend therapy (e.g. *S. aureus* bacteremia).
- In complicated pneumonias (e.g. empyema), duration is likely longer, but surgical intervention plays a key role in management and shortens duration of antibiotics.

S. pneumoniae bacteremia associated with uncomplicated pneumonia → 5 days of IV therapy

- Uncomplicated pneumonia = not meningitis or other serious infections such as septic arthritis
- Effective treatment with 5 days of IV therapy, assuming clinical improvement before discontinuation of therapy.[1]

Hospital acquired pneumonia (HAP) and ventilator associated pneumonia (VAP) without abscesses → ≤ 7 days

- 8 days vs. 15 days, no difference in mortality, ICU stay, mechanical ventilation-free days or organ failure-free days.[2]
- Patients who received fewer days of antibiotics had less re-infection with resistant organisms.
- Meta-analysis confirmed 7-8 days of therapy is as effective as longer courses, except possibly for patients infected with non-fermenting Gram negative bacilli (e.g. *P. aeruginosa*).[3]

Question? Call 604-417-8921
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Acute Exacerbation of COPD with signs of bacterial infection → 5 to 7 days

- Signs of bacterial infection = at least 2 of ↑ sputum purulence, ↑ sputum volume, worsening dyspnea[4]
- Comparable clinical outcome with 5 days of treatment vs. longer regardless of antibiotic class[5,6]
- Shorter duration group had significant fewer side effects

Cystitis → 3 to 5 days

- Cystitis = acute dysuria, urgency and frequency, without flank pain or fever, accompanied by pyuria, and a positive single uropathogen in urine

Uncomplicated pyelonephritis or associated urosepsis → 7 days, extend if slow to respond

- Uncomplicated pyelonephritis = normal male or female anatomy, without obstruction, abscess or stones, or a prostatic focus

Most infections involving non-sterile sites can be stopped once patient has met **minimum treatment duration** AND has been **hemodynamically stable for 48 hours**. Infections involving sterile site may require longer treatment courses, especially if source control is not possible. **Reassess** and **extend** treatment duration **as needed** if slow to respond to therapy.

Sterile Site Infection	Minimum Treatment Duration
Bacteremia – *Strep pneumoniae* of pulmonary source	5 days if clinically stable for 48 hours
Bacteremia – from uncomplicated UTI	7 days if clinically stable for 48 hours
Bacteremia – if not better by day 7	10-14 days
Bacteremia – *Staph aureus* (IE ruled out)	2 weeks from first negative blood culture
Fungemia – *Candida sp*	2 weeks from first negative blood culture
Infective Endocarditis	4-6 weeks, depending on organism and if presence of prosthetic valve
Meningitis	7-21 days, (*H. flu* & *N. meningitidis* – 7 days; *S. pneumoniae* – 10-14 days)
Osteomyelitis	6 weeks
Septic arthritis	14-21 days, depending on organism

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Non-Sterile Site Infection		Minimum Treatment Duration
Cellulitis	No abscess (non-purulent)	5 days
Pneumonia	Community acquired (CAP)	5 days
	Hospital acquired (HAP)	7 days
	Aspiration pneumonitis	No antibiotics
	Aspiration pneumonia	5 days
	MSSA, MRSA	7 days
	Legionella, Mycoplasma, Chlamydia	3-7 days depending on antibiotic (see Bugs & Drugs for details)
	Pseudomonas	7 days
COPD Exacerbation	With signs of bacterial infection	5 days
Lung abscess	-	4-6 weeks
Appendicitis	Uncomplicated, community acquired	STOP post source control
	Perforated	4 days post source control
Cholecystitis	Uncomplicated, community acquired	STOP post source control
	Perforated	4 days post source control
Cholangitis	-	4 days post source control
Diverticulitis	Uncomplicated	5 days
	Complicated with perforation/abscess	Varies, pending abscess resolution
C difficile infection	-	10 days
Cystitis	Healthy, pre-menopausal females	3 days
	Male, elderly female, recurrence	5 days
Pyelonephritis	Uncomplicated	7 days
	Complicated, urologic structural abnormalities	7 days, extend if slow to respond

Reference:

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