National Clinical Guideline Centre

Pneumonia

Diagnosis and management of community- and hospital-acquired pneumonia in adults

Clinical guideline <…>

Appendix O

June 2014

Draft for consultation

Commissioned by the National Institute for Health and Care Excellence

Disclaimer
Healthcare professionals are expected to take NICE clinical guidelines fully into account when exercising their clinical judgement. However, the guidance does not override the responsibility of healthcare professionals to make decisions appropriate to the circumstances of each patient, in consultation with the patient and/or their guardian or carer.

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Unit costs

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Table 1 - Cost of oral antibiotic therapy for pneumonia

Drug	Brand Name	Manufacturer	Dosage	Unit	Unit Cost	Cost Per Day
Beta-lactams						
Narrow spectrum – class 1						
Penicillin V			0.5 g every 6 hours	28 x 250 mg tab	£0.04	£0.33
			1 g every 6 hours	28 x 250 mg tab	£0.04	£0.67
			0.5 g every 6 hours	250 mg/5 ml oral solution, 100 ml (5g)	£15.50	£6.20
			1 g every 6 hours	250 mg/5 ml oral solution, 100 ml (5g)	£15.50	£12.40
			0.5 g every 6 hours	250 mg/5 ml oral solution, SF, 100 ml (5g)	£16.56	£6.62
			1 g every 6 hours	250mg/5 ml oral solution, SF, 100 ml (5g)	£16.56	£13.25
Narrow spectrum – class 2						
Ampicillin			0.25 g every 6 hours	28 x 250 mg capsules	£0.19	£1.52
			0.5 g every 6 hours	28 x 500 mg capsules	£0.83	£3.30
			1 g every 6 hours	28 x 500 mg capsules	£0.83	£6.61
			0.5 g every 4 hours	250 mg/5 ml oral solution, 100 ml (5g)	£11.84	£7.10
			0.5 g every 6 hours	250mg/5 ml oral solution, 100 ml (5g)	£11.84	£4.74
Amoxicillin			0.5 g every 8 hours	21 x 500 mg cap	£0.07	£0.21
			1 g every 8 hours	21 x 500 mg cap	£0.07	£0.42
			0.5 g every 8 hours	250mg/5 ml oral solution, 100 ml (5 g)	£1.20	£0.36
			1 g every 8 hours	250 mg/5 ml oral solution, 100ml (5 g)	£1.20	£0.72
			0.5 g every 8 hours	250 mg/5 ml oral solution, SF, 100 ml (5 g)	£1.42	£0.43
			1 g every 8 hours	250 mg/5 ml oral solution, SF, 100 ml (5 g)	£1.42	£0.85
Broad spectrum – beta-lactamase stable penicillin						

Unit costs

Drug	Brand Name	Manufacturer	Dosage	Unit	Unit Cost	Cost Per Day
Co-amoxiclav			250/125 mg every 8 hours	21 x 250/125 mg tab	£0.27	£0.82
			500/125 mg every 8 hours	21 x 500/125 mg tab	£0.34	£1.02
Flucloxacillin			250 mg every 6 hours	28 x 250 mg capsules	£0.06	£0.25
			500 mg every 6 hours	28 x 500 mg capsules	£0.09	£0.36
			250 mg every 6 hours	250 mg/5 ml oral solution, 100 ml (5 g)	£26.28	£5.26
			500 mg every 6 hours	250 mg/5 ml oral solution, 100 ml (5 g)	£26.28	£10.51
			250 mg every 6 hours	250 mg/5 ml oral solution, SF, 100 ml (5 g)	£26.87	£5.37
			500 mg every 6 hours	250 mg/5 ml oral solution, SF, 100 ml (5 g)	£26.87	£10.75
Co-fluampicil			250 mg/250 mg every 6 hours	28 x 250/250 mg capsules	£0.20	£0.78
			500 mg/500 mg every 6 hours	28 x 250/250 mg capsules	£0.20	£1.56
			250 mg/250 mg every 6 hours	125/125 mg per 5 ml, powder for 100 ml (2.5 g)	£22.86	£9.14
			500 mg/500 mg every 6 hours	125/125 mg per 5 ml, powder for 100 ml (2.5 g)	£22.86	£18.29
Cephalosporin – 1st generation						
Cefalexin			250 mg every 6 hours	28 x 250 mg tab	£0.08	£0.32
			500 mg every 8 hours	21 x 500 mg tab	£0.13	£0.40
			1 g every 6 hours	21 x 500 mg tab	£0.13	£1.07
			1 g every 8 hours	21 x 500 mg tab	£0.13	£0.80
			1.5 g every 6 hours	21 x 500 mg tab	£0.13	£1.60
			1.5g every 8 hours	21 x 500 mg tab	£0.13	£1.20
			250 mg every 6 hours	28 x 250 mg capsules	£0.07	£0.28
			500 mg every 8 hours	21 x 500 mg capsules	£0.10	£0.30
			1 g every 6 hours	21 x 500 mg capsules	£0.10	£0.80
			1 g every 8 hours	21 x 500 mg	£0.10	£0.60

Unit costs

Drug	Brand Name	Manufacturer	Dosage	Unit	Unit Cost	Cost Per Day
				capsules		
			1.5 g every 6 hours	21 x 500 mg capsules	£0.10	£1.20
			1.5 g every 8 hours	21 x 500 mg capsules	£0.10	£0.90
			250 mg every 6 hours	125 mg/5 ml oral suspension, 100 ml (2.5 g)	£1.50	£0.60
			500 mg every 8 hours	250 mg/5 ml oral suspension, 100 ml (5 g)	£1.79	£0.54
			1 g every 6 hours	250 mg/5 ml oral suspension, 100 ml (5 g)	£1.79	£1.43
			1 g every 8 hours	250mg/5ml oral suspension, 100ml (5g)	£1.79	£1.07
			1.5 g every 6 hours	250mg/5ml oral suspension, 100ml (5g)	£1.79	£2.15
			1.5 g every 8 hours	250mg/5ml oral suspension, 100ml (5g)	£1.79	£1.61
Cefradine			250 mg every 6 hours	20 x 250 mg capsules	£0.14	£0.57
			500 mg every 6 hours	20 x 500 mg capsules	£0.26	£1.03
			1 g every 6 hours	20 x 500 mg capsules	£0.26	£2.05
			250 mg every 6 hours	250 mg/5 ml, powder for susp, 100 ml (5 g)	£3.77	£0.75
			500 mg every 6 hours	250 mg/5 ml, powder for susp, 100 ml (5 g)	£3.77	£1.51
			1 g every 6 hours	250 mg/5 ml, powder for susp, 100 ml (5 g)	£3.77	£3.02
Cefadroxil			500 mg every 12 hours	20 x 500 mg capsules	£1.00	£1.99
			1 g every 12 hours	20 x 500 mg capsules	£1.00	£3.99
Cephalosporin – 2nd generation						
Cefaclor			250 mg every 8 hours	21 x 250 mg capsules	£0.30	£0.91
			500 mg every 8 hours	21 x 250 mg capsules	£0.30	£1.82

Unit costs

Drug	Brand Name	Manufacturer	Dosage	Unit	Unit Cost	Cost Per Day
	Distaclor MR	Flynn Pharma Ltd	750 mg every 12 hours w food	14 x 375 mg tablets	£0.65	£2.60
	Distaclor		500 mg every 8 hours	250 mg/5 ml, powder for susp, 100 ml (5 g)	£8.26	£2.48
Cefuroxime	Zinnat	GSK	500 mg every 12 hours	14 x 250 mg tab	£0.76	£3.04
Cephalosporin – 3rd generation						
Cefixime	Suprax	Sanofi	200 mg daily	7 x 200 mg tab	£1.89	£1.89
			400 mg daily	7 x 200 mg tab	£1.89	£3.78
Cefpodoxime	Orelox	Sanofi	100 mg once daily	10 x 100 mg tab	£0.98	£0.98
			100 mg twice daily	10 x 100 mg tab	£0.98	£1.96
			200 mg once daily	10 x 100 mg tab	£0.98	£1.96
			200 mg twice daily	10 x 100 mg tab	£0.98	£3.91
Fluoroquinolones						
1st and 2nd generation						
Ciprofloxacin			500 mg every 12 hours	20 x 500 mg tab	£0.07	£0.14
			750 mg every 12 hours	20 x 500 mg tab + 20 x 250 mg tab	£0.12	£0.25
Ofloxacin	Tarivid	Sanofi	400 mg once daily	10 x 400 mg tab	£1.50	£1.50
			400 mg twice daily	10 x 400 mg tab	£1.50	£3.00
3rd and 4th generation						
Levofloxacin			500 mg once daily	10 x 500 mg tab	£2.02	£2.02
			500 mg twice daily	10 x 500 mg tab	£2.02	£4.03
Moxifloxacin	Avelox	Bayer	400 mg once daily	5 x 400 mg tab	£2.49	£2.49
Macrolides						
Clarithromycin			500 mg every 12 hours	14 x 500 mg tab	£0.23	£0.47
Clindamycin			150 mg every 6 hours	24 x 150 mg capsules	£0.31	£1.25
			300 mg every 6 hours	24 x 150 mg capsules	£0.31	£2.51
			450mg every 6 hours	24 x 150 mg capsules	£0.31	£3.76
	Dalacin C	Pharmacia	150 mg every 6 hours	24 x 150 mg capsules	£13.72	£27.44
			300 mg every 6 hours	24 x 150 mg capsules	£0.57	£2.29
			450 mg every 6 hours	24 x 150 mg capsules	£0.57	£4.57
Erythromycin			250 mg every 6 hours	28 x 250 mg tab	£0.06	£0.25

Unit costs

Drug	Brand Name	Manufacturer	Dosage	Unit	Unit Cost	Cost Per Day
			500 mg every 6 hours	28 x 250 mg tab	£0.06	£0.51
			0.5 g every 12 hours	28 x 250 mg tab	£0.06	£0.25
			1 g every 12 hours	28 x 250 mg tab	£0.06	£0.51
			250 mg every 6 hours	28 x 250 mg capsules	£0.29	£1.16
			500 mg every 6 hours	28 x 250 mg capsules	£0.29	£2.31
			0.5 g every 12 hours	28 x 250 mg capsules	£0.29	£1.16
			1 g every 12 hours	28 x 250 mg capsules	£0.29	£2.31
Azithromycin			500 mg once daily	3 x 500 mg tab	£0.85	£0.85
Tetracycline						
Doxycycline			200 mg daily	50 x 100 mg capsules	£0.06	£0.06
	Vibramycin-D	Pfizer	200 mg daily	8 x 100 mg dispensable tab	£0.61	£0.61
Tetracycline			250 mg every 6 hours	28 x 250 mg tabs	£0.24	£0.98
			500 mg every 8 hours	28 x 250 mg tabs	£0.24	£1.47
			500 mg every 6 hours	28 x 250 mg tabs	£0.24	£1.96
Minocycline			100 mg every 12 hours	28 x 100 mg tabs	£0.48	£0.96

a) MIMS, April 2013

Table 2 - cost of intravenous therapy for pneumonia

Drug	Brand Name	Manufacturer	Dosage	Unit	Unit Cost	Cost Per Day
Beta-lactams						
Narrow-spectrum – class 1						
Penicillin G			0.6 g every 6 hours	25 x 0.6 g vial	£0.95	£3.80
			1.2 g every 6 hours	25 x 1.2 g vial	£1.89	£7.56
Narrow spectrum – class 2						
Amoxicillin	Amoxil	GSK	0.5 g every 8 hours (IM or IV)	10 x 500 mg powder in vial	£0.55	£1.64
			1 g every 6 hours (IV)	10 x 1 g powder in vial	£1.10	£4.38
Broad-spectrum – beta-lactamase stable penicillin						
Co-amoxiclav	Augmentin	GSK	1.2 g every 8 hours	10 x 1.2 g(1 g/200 mg) powder in vial	£1.06	£3.18
Piperacillin/	Tazocin	Pfizer	4.5 g every 8 hours	4.5 g (4 g/500 g)	£15.17	£45.51

Unit costs

Drug	Brand Name	Manufacturer	Dosage	Unit	Unit Cost	Cost Per Day
tazobactam			(IV)	powder in vial		
			4.5 g every 6 hours (IV)	4.5 g (4 g/500 g) powder in vial	£15.17	£60.68
Clavulanic acid/ticarcillin			3.2 g every 8 hours (IV)	3.2 g (200mg/3 g) powder in vial	£5.33	£15.99
			3.2 g every 6 hours (IV)	4 x 3.2 g (200 mg/3 g) powder in vial	£5.33	£21.32
Co-fluampicil			250 mg/250 mg every 6 hours	125/125 mg per 5 ml, powder for 100 ml (2.5 g)	£22.86	£9.14
			500 mg/500 mg every 6 hours	125/125 mg per 5 ml, powder for 100 ml (2.5 g)	£22.86	£18.29
	Magnapen	Wockhardt UK Ltd	250 mg/250 mg every 6 hours	10 x 250/250 mg powder in vial	£1.33	£5.33
Cephalosporin – 2nd generation						
Cefuroxime	Zinacef	GSK	750 mg every 6 hours	750 mg vial	£2.34	£9.36
			750 mg every 8 hours	750 mg vial	£2.34	£7.02
			1.5 g every 6 hours	1.5 g vial	£4.70	£18.80
			1.5 g every 8 hours	1.5 g vial	£4.70	£14.10
Cephalosporin – 3rd generation						
Cefotaxime			1 g every 12 hours (IV)	1 g vial	£4.31	£8.62
			2 g every 6 hours (IV)	2 g vial	£8.57	£34.28
Ceftriaxone	Rocephin	Roche	1 g daily (IV)	1 g vial	£9.58	£9.58
			2 g daily (IV)	2 g vial	£19.18	£19.18
			4 g daily (IV	2 g vial	£19.18	£38.36
Ceftazidime	Kefadim	Flynn Pharma Ltd	1 g every 8 hours (IV)	1 g vial	£7.92	£23.76
			2 g every 8 hours (IV)	2 g vial	£15.84	£47.52
Cephalosporin – 5th generation						
Ceftaroline fosamil	Zinforo	AstraZaneca	600 mg every 12 hours (IV)	600 mg vial	£37.50	£75.00
Carbapenem						
Imipenem			500 mg every 6 hours (IV)	500 mg vial	£12.00	£48.00
			1 g every 8 hours (IV)	500 mg vial	£12.00	£72.00
	Primaxin	MSD	500 mg every 6	500 mg vial	£12.00	£48.00

Unit costs

Drug	Brand Name	Manufacturer	Dosage	Unit	Unit Cost	Cost Per Day
			hours (IV)			
			1 g every 8 hours (IV)	500 mg vial	£12.00	£72.00
Meropenem			500 mg every 8 hours (IV)	500 mg powder in vial	£8.00	£24.00
			1 g every 8 hours (IV)	1 g powder in vial	£16.00	£48.00
Ertapenem	Invanz	Merck	1 g once daily (IV)	1 g powder in vial	£31.65	£31.65
Fluoroquinolones						
1st and 2nd generation						
Ciprofloxacin			400 mg every 8 hours (IV)	2 mg/mL, 200 ml (400 mg)	£22.00	£66.00
			400 mg every 12 hours (IV)	2 mg/mL, 200 ml (400 mg)	£22.00	£44.00
	Ciproxin	Bayer	400 mg every 8 hours (IV)	2 mg/mL, 200 ml (400 mg)	£22.85	£68.55
			400 mg every 12 hours (IV)	2 mg/mL, 200 ml (400 mg)	£22.85	£45.70
Ofloxacin	Tarivid	Sanofi	200 mg twice daily (IV)	2 mg/mL, 100 ml (200 mg)	£16.16	£32.32
3rd and 4th generation						
Levofloxacin			500 mg once daily (IV)	5 mg/mL, 100 ml (500 mg)	£26.40	£26.40
			500 mg twice daily (IV)	5 mg/mL, 100 ml (500 mg)	£26.40	£52.80
	Tavonic	Sanofi	500 mg once daily (IV)	5 mg/mL, 100 ml (500 mg)	£26.40	£26.40
			500 mg twice daily (IV)	5 mg/mL, 100 ml (500 mg)	£26.40	£52.80
Moxifloxacin	Avelox	Bayer	400 mg once daily (IV)	5 x 400 mg bottle	£39.95	£39.95
Macrolides						
Clarithromycin						
	Klaricid	Abbott	500 mg every 12 hours (IV)	500 mg powder in vial	£9.45	£18.90
Clindamycin	Dalacin C	Pharmacia	0.6 g daily (IV)	5 x 4 ml ampules (150 mg/ml) (600 mg)	£12.35	£12.35
			2.4 g daily (IV)	5 x 4 ml ampules (150 mg/ml) (600 mg)	£12.35	£49.40
			4.8 g daily (IV)	5 x 4 ml ampules (150 mg/ml) (600 mg)	£12.35	£98.80

Unit costs

Drug	Brand Name	Manufacturer	Dosage	Unit	Unit Cost	Cost Per Day
Erythomycin	Erythrocin	Amdipharm	12.5 mg/kg every 6 hours	1 g in vial	£10.98	£43.92

Unit costs

Table 3: Glucocorticosteroid unit costs

Drug	Dose available	Cost	Cost per tab
Dexamethasone	0.5 mg	£38.00	£1.36
	2 mg	£6.77	£0.14
	2 mg	£13.09	£0.13
	150 mL (Oral Solution)	£42.30	-
	1 ml (4 mg) (Injection)	£0.83	-
Hydrocortisone	10 mg	£43.13	£1.44
	20 mg	£45.93	£1.53
	1 ml (100 mg) (Injection)	£1.08	-
	5 ml (500 mg) (Injection)	£4.89	-
	100 mg (Injection)	£0.92	-
	100 mg + 2 mL water (Injection)	£1.16	-
Methyl-prednisolone	2 mg	£3.88	£0.13
	4 mg	£6.19	£0.21
	16 mg	£17.17	£0.57
	100 mg	£48.32	£2.42
	40 mg (Injection)	£1.58	-
	125 mg (Injection)	£4.75	-
	500 mg (Injection)	£9.60	-
	1 g (Injection)	£17.30	-
	2 g (Injection)	£32.86	-
Prednisolone	1 mg	£1.18	£0.04
	5 mg	£1.21	£0.04
	25 mg	£30.00	£0.54
	2.5 mg (e/c)	£10.03	£0.36
	2.5 mg (e/c)	£30.79	£0.31
	5 mg (e/c)	£9.86	£0.35
	5 mg (e/c)	£31.04	£0.31
	5 mg (soluble)	£9.65	£0.32

Unit costs

Table 4: Reviewed studies glucocorticosteroid costs

Study	Drug	Dose	Total drug cost[(a)]	Average drug cost per day
Confalonieri 2005[1]	Hydrocortisone	200 mg IV + 240 mg/day for 7 days	£17.48	£2.50
Fernandez-Serrano 2011[2]	Methyl-prednisolone	200 mg IV + 20 mg/6 h for 3 days; 20 mg/12 h for 3 days; 20 mg/day for 3 days	£24.49	£2.72
Marik 1993[3]	Hydrocortisone	10 mg/kg	N/A	N/A
McHardy 1972[4]	Prednisolone	20 mg/day oral for 7 days	£1.12	£0.16
Meijvis 2011[5]	Dexamethasone	5 mg IV/day for 4 days	£16.60	£4.15
Sabry 2011[6]	Hydrocortisone	200 mg IV + 12.5 mg/h IV for 7 days	£26.68	£3.81
Snijders 2010[7]	Prednisolone (c)	40 mg IV or oral for 7 days	£10.29/£2.24	£1.47/£0.32

(a) These costs do not include costs of antibiotics, equipment, preparations or staff time
(b) IV prednisolone is not routinely available. Equivalent doses and costs of IV hydrocortisone are used instead
(c) IV costs are those for hydrocortisone, oral costs are those for prednisolone

Comment [CP1]: Betta, not sure where the footnotes b and c refer to

2 References

1 Confalonieri M, Urbino R, Potena A, Piattella M, Parigi P, Puccio G et al. Hydrocortisone infusion for severe community-acquired pneumonia: a preliminary randomized study. American Journal of Respiratory and Critical Care Medicine. 2005; 171(3):242-248

2 Fernandez-Serrano S, Dorca J, Garcia-Vidal C, Fernandez-Sabe N, Carratala J, Fernandez-Aguera A et al. Effect of corticosteroids on the clinical course of community-acquired pneumonia: a randomized controlled trial. Critical Care. 2011; 15(2):R96

3 Marik P, Kraus P, Sribante J, Havlik I, Lipman J, Johnson DW. Hydrocortisone and tumor necrosis factor in severe community-acquired pneumonia. A randomized controlled study. Chest. 1993; 104(2):389-392

4 McHardy VU, Schonell ME. Ampicillin dosage and use of prednisolone in treatment of pneumonia: co-operative controlled trial. BMJ. 1972; 4(5840):569-573

5 Meijvis SC, Hardeman H, Remmelts HH, Heijligenberg R, Rijkers GT, van Velzen-Blad H et al. Dexamethasone and length of hospital stay in patients with community-acquired pneumonia: a randomised, double-blind, placebo-controlled trial. Lancet. 2011; 377(9782):2023-2030

6 Sabry NA, Omar EE-D. Corticosteroids and ICU Course of Community Acquired Pneumonia in Egyptian Settings. Pharmacology and Pharmacy. 2011; 2(2):73-81

7 Snijders D, Daniels JM, de Graaff CS, van der Werf TS, Boersma WG. Efficacy of corticosteroids in community-acquired pneumonia: a randomized double-blinded clinical trial. American Journal of Respiratory and Critical Care Medicine. 2010; 181(9):975-982