

Appendix 1: Supplementary tables

Appropriateness of antimicrobial prescribing in a Swiss tertiary care hospital: a repeated point prevalence survey

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Table S1: Examples of assessment of the appropriateness of antimicrobial treatment.		
	Appropriate	Inappropriate
Indication	A patient is treated with nitrofurantoin for uncomplicated cystitis.	A patient is treated with nitrofurantoin for asymptomatic bacteriuria.
Spectrum	A patient with late-onset hospital-acquired pneumonia is treated with cefepime.	A patient with late-onset hospital-acquired pneumonia is treated with clarithromycin in addition to cefepime.
Dose	A patient with febrile neutropenia (eGFR >70ml/min) is treated with 2g cefepime 3x/d.	A patient with febrile neutropenia (eGFR >70ml/min) is treated with 1g cefepime 3x/d.
Frequency of administration	A patient with <i>Enterococcus faecalis</i> endocarditis is treated with gentamicin 1x/day.	A patient with <i>E. faecalis</i> endocarditis is treated with gentamicin 3x/day.
Duration	5–7 days for uncomplicated community-acquired pneumonia	10 days for uncomplicated community-acquired pneumonia
Allergy mismatch	A patient with a documented rash after administration of penicillin 5 years ago receives cefazolin.	A patient with a documented anaphylactic reaction after administration of penicillin 5 years ago receives amoxicillin/clavulanic acid.
Not according to guidelines	A patient with community-acquired cholangitis without risk factors for resistant pathogens is treated with ceftriaxone plus metronidazole.	A patient with community-acquired cholangitis without risk factors for resistant pathogens is treated with piperacillin/tazobactam.

IV to oral switch possible	A patient with pneumonia fulfilling all IV to oral switch criteria is switched to oral antibiotics.	A patient with pneumonia fulfilling all IV to oral switch criteria is treated for 7 days with ceftriaxone.
Switch to targeted therapy possible	A patient with <i>Staphylococcus aureus</i> bacteremia is switched from piperacillin/tazobactam to flucloxacillin after blood cultures are positive for methicillin-susceptible <i>Staph. aureus</i> .	A patient with <i>Staph. aureus</i> bacteremia is continued on piperacillin/tazobactam after blood cultures are positive for methicillin-susceptible <i>Staph. aureus</i>
eGFR = estimated glomerular filtration rate; IV = intravenous		

Table S2: Univariate and multivariate variables analysed per patient (n = 378).

Variable, odds ratio (95% CI)	Univariate analyses	p-value	Multivariate analysis	p-value
Female sex	1.59 (1.05-2.43)	0.03	1.42 (0.88-2.29)	0.2
Age (per year increase)	1.02 (1.00-1.03)	0.008	1.01 (0.99-1.02)	0.5
Charlson Comorbidity Score*	0.99 (0.90-1.09)	0.9	1.05 (0.93-1.19)	0.4
Immunosuppression	0.30 (0.18-0.50)	<0.0001	0.38 (0.21-0.70)	0.002
Blood cultures collected	0.59 (0.38-0.91)	0.02	0.66 (0.33-1.33)	0.2
Antimicrobial allergy	1.27 (0.69-2.33)	0.5	1.21 (0.80-1.81)	0.4
Treating unit				
Medicine	Reference		Reference	
Surgery	2.08 (1.32-3.30)	0.002	1.83 (1.08-3.12)	0.03
Intensive Care	4.89 (1.71-13.95)	0.003	5.67 (1.71-18.81)	0.005
Other	1.91 (0.79-4.58)	0.2	0.92 (0.34-2.47)	0.9
Infectious diseases consultation	0.31 (0.19-5.1)	<0.0001	0.31 (0.17-0.54)	<0.0001
CI = confidence interval; * per unit increase				

Table S3: Assessment of appropriateness per prescription (n = 548) according to the indication/infection.

Assessment, n (%)	Prophylactic	Respiratory tract	Genitourinary	Intraabdominal	Skin and soft tissue	Bone and joint	Other*
Inappropriate indication	25 (15.1)	9 (8.7)	5 (10.9)	0	2 (4.9)	1 (2.2)	17 (16.5)
Inappropriate spectrum [†]	0	13 (12.5)	11 (23.6)	6 (14.0)	3 (7.3)	0	5 (4.9)
Inappropriate dose [‡]	5 (3.0)	16 (15.4)	3 (6.5)	3 (7.0)	2 (4.9)	2 (4.4)	5 (4.9)
Inappropriate frequency of administration	4 (2.4)	4 (3.8)	1 (2.2)	3 (7.0)	1 (2.4)	1 (2.2)	3 (2.9)
Inappropriate duration	19 (11.4)	2 (1.9)	0	0	2 (4.9)	1 (2.2)	6 (5.8)
Allergy mismatch	4 (2.4)	2 (1.9)	1 (2.2)	1 (2.3)	1 (2.4)	1 (2.2)	1 (1.0)
Not according to guidelines	25 (15.1)	18 (17.3)	9 (19.6)	7 (16.3)	5 (12.2)	4 (8.9)	15 (14.6)
Intravenous to oral switch possible	5 (3.0)	18 (17.3)	10 (21.7)	4 (9.3)	6 (14.6)	2 (4.4)	6 (5.8)
Switch to targeted therapy possible	0	8 (7.7)	8 (17.4)	6 (14.0)	3 (7.3)	5 (11.1)	8 (7.8)
At least one assessment not appropriate	33 (19.9)	43 (41.3)	23 (50.0)	16 (37.2)	14 (34.1)	14 (31.1)	39 (37.9)

* neutropenic fever, intravascular infection, sepsis without focus, etc.; † spectrum mostly too broad; ‡ dose mostly too low