

## Important changes to antimicrobial susceptibility reporting

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Whether a bacterium is likely to respond to antibiotic treatment is reported on culture results using **three categories** – “S” (Susceptible), “R” (Resistant), and “I” (susceptible at Increased dose)<sup>1</sup>.

Changes in national interpretation standards<sup>2</sup> will mean more reports are released with a susceptibility listed as “I”. Table 1 below explains how “S”, “I”, and “R” should be interpreted when choosing an antibiotic regimen. Use Table 2 to find the appropriate “I” (increased exposure) antibiotic dose.

**Table 1 – Antimicrobial susceptibility reporting categories**

Susceptibility result	Interpretation	Can this agent be used to treat an infection caused by the reported organism?	Antimicrobial dosage
<b>S</b> = susceptible with standard dosing	High likelihood of therapeutic success using a standard dosing regimen of the agent.	<b>Yes.</b>	Use BNF recommended dosing
<b>I</b> = susceptible at increased exposure	High likelihood of therapeutic success, as exposure to the agent can be increased by adjusting the dosing regimen or the agent is concentrated at the site of infection.	<b>Yes.</b>	Use dosing as recommended by EUCAST in table 2 below
<b>R</b> = resistant	High likelihood of therapeutic failure even when there is increased exposure.	<b>No.</b>	Not applicable, agent should not be used to treat this organism.

These changes mean that some bacteria will be reported only as “I” or “R” to certain commonly used antibiotics, e.g.:

Bacterial Species	Selection of agents without “S” reporting category
<i>Pseudomonas aeruginosa</i>	Piperacillin-tazobactam (“Tazocin”), ceftazidime, ciprofloxacin, levofloxacin
<i>Escherichia coli</i> , <i>Klebsiella</i> species, <i>Raoultella</i> species, <i>Proteus mirabilis</i>	Temocillin, cefuroxime
Staphylococci	Ciprofloxacin, levofloxacin
<i>Streptococcus pneumoniae</i>	Levofloxacin
Beta-haemolytic streptococci (groups A, B, C, and G)	Levofloxacin
<i>Haemophilus influenzae</i>	Amoxicillin PO, Co-Amoxiclav PO

**Table 2 – “Increased exposure” dosing of commonly used antimicrobials in adults ≥16 years old**

Organism	Drug	“I” (Increased Exposure) Dose for Adults ≥16 years old
<i>E.coli</i> , <i>Klebsiella</i> sp, <i>Raoultella</i> sp, <i>P. mirabilis</i>	Cefuroxime IV	1.5g 8 hourly <sup>1, 2, 3</sup>
	Temocillin IV	2g 8 hourly <sup>2, 4, 5</sup>
<i>Pseudomonas</i> spp	Piperacillin 4g/tazo-bactam 500mg IV (“Tazocin”)	4.5g 6 hourly <sup>1, 2, 6</sup> 3 hour infusion recommended in critical illness (unlicensed)
	Ceftazidime IV	2g 8 hourly <sup>1, 2, 7</sup>
	Aztreonam IV	2g 6 hourly <sup>1,2,8</sup>
<i>Pseudomonas</i> spp/ <i>Acinetobacter</i> spp/ <i>S. aureus</i>	Ciprofloxacin IV	400mg 8 hourly <sup>1,2,9</sup>
	Ciprofloxacin Oral	750mg 12 hourly <sup>1,2,10</sup>
<i>Stenotrophomonas maltophilia</i>	Co-trimoxazole IV or PO (“Septrin”)	<i>Urinary tract infections only:</i> 960mg 12 hourly <sup>1,2, 11</sup> <i>All other infections:</i> 1440mg 12 hourly
	Amoxicillin PO	1g 8 hourly <sup>1,2,12</sup>
<i>Haemophilus influenzae</i>	Co-amoxiclav PO (“Augmentin”)	Co-amoxiclav 625mg 8 hourly <b>PLUS</b> Amoxicillin 500mg 8 hourly <sup>1,2,12</sup>
	Streptococcus groups A/B/C/G <i>S. pneumoniae</i>	Levofloxacin IV or PO 500mg 12 hourly <sup>1,2,14,15</sup>

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**Supersedes:** None

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