

## Supplementary material

**Manuscript Title:** Estimating the Clinical and Economic Impact of Introducing a New Antibacterial into Greek Clinical Practice for the Management of Hospital acquired Infections with Limited Treatment Options

Running heading: Clinical and economic value of introducing a new antimicrobial in Greece.

## Journal

Infectious Diseases and Therapy

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Supplementary Table 1. Model input variation of the dynamic AMR model

Model input		Variation
Pathogen		<i>E.coli, Klebsiella spp., P.aeruginosa</i>
Treatment sequence		Treatment 1 -> Treatment 2, Treatment 2 -> Treatment 1, Treatment 1 -> Treatment 2 -> New antimicrobial, Treatment 2 -> Treatment 1 -> New antimicrobial, Treatment 1 -> New antimicrobial -> Treatment 2, Treatment 2 -> New antimicrobial -> Treatment 1, New antimicrobial -> Treatment 1 -> Treatment 2, New antimicrobial -> Treatment 2 -> Treatment 1
Diversity enablement		No diversification, Equal split between two treatments at first-line, Equal split between three treatments at first-line
LOS (given successful treatment)		5 days, 7 days, 9 days
LOS (given unsuccessful treatment)		2 days, 3 days, 4 days
Baseline resistance	Treatment 1	0%, 10%, 20%, 30%
	Treatment 2	0%, 10%, 20%, 30%
	Treatment 3	0%, 10%, 20%, 30%
Treatment efficacy	Treatment 1	80%, 90%, 100%
	Treatment 2	80%, 90%, 100%
	Treatment 3	80%, 90%, 100%
<i>LOS: length of stay</i>		

Supplementary Table 2. Value of New Antibacterial Model - weighted input calculations

Indication	Value	Source
<b>Daily cost of hospitalisation</b>		
cUTI with LTO	€ 195.50	GG 946 B'/27.3.2012 (Y23M)
cIAI with LTO	€ 281.80	GG 946 B'/27.3.2012 (II07M)
HAP/VAP with LTO	€ 269.50	GG 946 B'/27.3.2012 (P24M $\alpha$ )
Other infections with LTO	€ 328.15	GG 946 B'/27.3.2012 (A22M $\alpha$ + P20A)
Weighted value*	<b>€ 267.25</b>	Calculation
<b>Utility (resolution of infection)</b>		
cUTI with LTO	0.68	Ernst et al.[1]
cIAI with LTO	0.6	Brasel et al.[2]
HAP/VAP with LTO	0.58	Beusterien et al.[3]
Other infections with LTO	0.6	Brasel et al.[2]
Weighted value*	<b>0.62</b>	Calculation
<p><i>cIAI: complicated intra-abdominal infection; cUTI: complicated urinary tract infection; HAP: hospital-acquired pneumonia; LOT: limited treatment options; VAP: ventilator-associated pneumonia</i></p> <p>* Values weighted based on the distribution of indication reported in <i>Cassini et al.[4]</i></p> <p>The utility value associated with the Other LTO indication is assumed to be equivalent to the cIAI indication</p>		

1. Ernst EJ, Ernst ME, Hoehns JD, Bergus GR. Women's quality of life is decreased by acute cystitis and antibiotic adverse effects associated with treatment. *Health and Quality of Life Outcomes*. 2005;2005/07/27;3(1):45.
2. Brasel. K BD, Weigelt. J. Cost-utility analysis of contaminated appendectomy wounds. *Journal of The American College of Surgeons*. 1997;184(1):23-30.
3. Beusterien KM, Davies J, Leach M, Meiklejohn D, Grinspan JL, O'Toole A, et al. Population preference values for treatment outcomes in chronic lymphocytic leukaemia: a cross-sectional utility study. *Health and quality of life outcomes*. 2010;8:50-.
4. Cassini A, Högberg LD, Plachouras D, Quattrocchi A, Hoxha A, Simonsen GS, et al. Attributable deaths and disability-adjusted life-years caused by infections with antibiotic-resistant bacteria in the EU and the European Economic Area in 2015: a population-level modelling analysis. *Lancet Infect Dis*. 2019 Jan;19(1):56-66.