Supplementary Table 1. Study procedures

Study Procedure				Study Day								Protocol violation
			Day 0	Day 1	Day 2	Day 3	Day 4	Day 5	ICU	Day 30	
Clinical	Consent	√									
	Randomisation	√									
	Antibiotic (Meropenem or Cefepime or Piperacillin)	√									
	Starting dose	√									
	Start date	√									
	Concomitant antibiotic use	√	√	√	√	√	√			
	Study antibiotic dose changed based on PK sample		√	√	√	√	√			
	Date of changed dose		√	√	√	√	√			
	Dose accepted by treating team		√	√	√	√	√			
	Dose in grams per protocol		√	√	√	√	√			

	Dose in grams per TDMx*		√	√	√	√	√			
	Date of admission to Hospital [a]	√								
	Date of admission to ICU	√								
	Date of discharge from ICU	√								
	Date of Discharge from Hospital [b]	√								
	Study exit						√			
	Readmission to ICU [c]									
	Mortality [d]							√	√	
	Cause of death [e]									
	Alive at ICU discharge									
	Alive at Hospital discharge									
	Final diagnosis									
	Co-morbidities	√								
	Risk factors	√								
	Adverse events		√	√	√	√	√			
	Allergies [f]	√								
	Charlson Co-morbidity index [g]	√								

	Sepsis source	√								
	Organism type [h]	√	√	√	√	√	√			
	Organism site	√	√	√	√	√	√			
	Organism MIC	√	√	√	√	√	√			
	SOFA score	√	√				√			
	Delta SOFA [i]						√			
	APACHE score	√					√			
	Organ support [j]	√	√	√	√	√	√			
	Duration of organ support	√	√	√	√	√	√			
	Urine output (24hour)	√	√	√	√	√	√			
Laboratory	Complete blood count	√	√	√	√	√	√			
	Liver function tests	√	√	√	√	√	√			
	Renal function tests	√	√	√	√	√	√			
	Total protein (grams/litre)	√	√	√	√	√	√			
	Albumin (grams/litre)	√	√	√	√	√	√			
	ALT (units/litre)	√	√	√	√	√	√			
	ALP (units/litre)	√	√	√	√	√	√			

	GGT (units/litre)	√	√	√	√	√	√			
	Bilirubin (micromol/litre)	√	√	√	√	√	√			
	Creatinine (micromol/litre)	√	√	√	√	√	√			
	Creatinine clearance (ml/min)	√	√	√	√	√	√			
	eGFR (ml/min/1.73m^2)	√	√	√	√	√	√			
	White cell count (10^9/litre)	√	√	√	√	√	√			
	Neutrophil Count (10^9/litre)	√	√	√	√	√	√			
	CRP (mg/L)	√	√	√	√	√	√			
	PK sampling[g]		√	√	√	√	√			

*TDMx is an open access precision dosing software platform; [a, b] To calculate hospital and Intensive care unit (ICU) length of stay; [c] Readmission after study exit (after day 5) – at any point during current admission to hospital; [d] at any point during ICU admission, or at day 30;

[e] Infection/sepsis related or other; [f] pre-existing allergies to antibiotics and newly developed during current admission; [g] calculated from points given to co-morbidities; [h] if organism isolated, site, type and MIC; [i] change is Sequential organ failure assessment (SOFA) score; [j] invasive ventilation, extra-corporeal membrane oxygenation (ECMO), renal replacement therapy, vasopressors; PK, pharmacokinetic; APACHE, Acute physiology and chronic health evaluation; ALT, alanine transaminase; AST, aspartate transaminase; GGT, gamma glutamyl transferase; eGFR, estimated glomerular filtration rate; CRP, C-reactive protein.