eAppendix 2. Imputations for Missing Antibiotic Susceptibilities by Pathogen

Antibiotic susceptibilities were derived from *in vitro* reports generated by each institution. Individual institutional standards on susceptibility testing were unavailable. Intermediate susceptibilities were treated as resistant. When considering whether antibiotics were active against isolated pathogens, we assessed each potential pathogen-antibiotic combination using reported antibiotic susceptibilities when available. In many cases, however, susceptibilities to specific antibiotics administered were not explicitly listed in susceptibility reports. We therefore created a set of rules to impute these susceptibilities using microbiologic principles and knowledge of the spectrum of activity for each antibiotic-pathogen combination. A "key" to the abbreviations used in these imputations is shown below. In the following sections, the algorithms for each antibiotic-pathogen imputation are shown.

Imputation Abbrevation	Explanation
R	This means that an organism will always be considered to be resistant to the antibiotic. • *Example: Ceftriaxone for Pseudomonas aeruginosa will always be treated as a non-active antibiotic*
S	This means that an organism will always be considered to be susceptible to the antibiotic. • *Example: Ceftriaxone for Methicillin-sensitive Staphylococcus aureus will always be treated as an active antibiotic*
if missing then E (alternate antibiotic)	This means that if the susceptibility to the antibiotic of interest is missing, then the algorithm looks at the antibiotic listed next to "E" and transposes that susceptibility. • *Example: For E.coli, "E imipenem" under meropenem means that if meropenem susceptibility is missing, but imipenem is reported as susceptible, then meropenem can be considered to be susceptible too.* Some of these have a further logic built it to handle cases where the other antibiotic susceptibility is missing too. These follow a hierarchial order; for example, for "E imipenem; if missing then E ertapenem" then the algorithm first looks to see if there is susceptibility reported for imipenem; if missing, then the algorithm looks for susceptibility for ertapenem.
if missing then .	This means that if the susceptibility to the antibiotic is missing, then the algorithm will list that particular antibiotic-organism combination as missing (because an imputation could not be reliably performed). In several cases, this imputation to handle an antibiotic-organism combination as missing comes only if prior imputations were unable to produce a result. Patient encounters that have missing antibiotic-organism combinations were excluded from the analysis assessing adequacy of empiric antibiotics or unnecessarily broad antibiotics.*
if missing then R	This means that the algorithm will report the organism to be resistant to the antibiotic if the susceptibility is missing.
if missing then S	This means that the algorithm will report the organism to be susceptible to the antibiotic if the susceptibility is missing.

I.   GRAM-NEGATIVE ORGANISMS

A.   *Acinetobacter* species

Antibiotic	Susceptibility Imputation
Amikacin	if missing then .
Amoxicillin-Clavulanate	R
Ampicillin	R
Ampicillin-Sulbactam	if missing then R
Azithromycin	R
Aztreonam	R
Cefadroxil	R
Cefepime	if missing then S if ceftriaxone-S or cefotaxime-S; else .
Ceftazidime	if missing then S if ceftriaxone-S or cefotaxime-S; else .
Ceftriaxone	if missing then E cefotaxime; if missing then R
Cefazolin	R
Cefotaxime	if missing then E ceftriaxone; if missing then R
Cefotetan	if missing then R
Cefoxitin	if missing then R
Cefpodoxime	if missing then E ceftriaxone; if missing then E cefotaxime; if missing then R
Ceftaroline	if missing then .
Cefuroxime	R
Cephalexin	R
Ciprofloxacin	if missing then .
Clarithromycin	R
Clindamycin	R
Colistin	if missing then .
Daptomycin	R
Dicloxacillin	R
Doxycycline	if missing then R
Doripenem	E meropenem
Ertapenem	if missing then .
Gentamicin	if missing then .
Imipenem	if missing then .
Levofloxacin	if missing then .
Linezolid	R
Meropenem	if missing then S if imipenem-S; if missing then .
Metronidazole	R
Minocycline	if missing then R
Moxifloxacin	R
Nafcillin	R
Oxacillin	R
Penicillin	R
Piperacillin-Tazobactam	if missing then S if piperacillin-S; if missing then .
Quinupristin-Dalfopristin	R
Tetracycline	if missing then R
Tigecycline	if missing then .
Tobramycin	if missing then .
TMP-SMX	R
Vancomycin	R

B. *Citrobacter* species

Antibiotic	Susceptibility Imputation
Amikacin	if missing then .
Amoxicillin-Clavulanate	R
Ampicillin	R
Ampicillin-Sulbactam	R
Azithromycin	R
Aztreonam	if missing then .
Cefadroxil	R
Cefepime	if missing then S if ceftriaxone-S or cefotaxime-S; else .
Ceftazidime	if missing then S if ceftriaxone-S or cefotaxime-S; else .
Ceftriaxone	if missing then E cefotaxime; if missing then .
Cefazolin	R
Cefotaxime	if missing then E ceftriaxone; if missing then .
Cefotetan	R
Cefoxitin	R
Cefpodoxime	if missing then E ceftriaxone; if missing then E cefotaxime; if missing then R
Ceftaroline	if missing then .
Cefuroxime	R
Cephalexin	R
Ciprofloxacin	if missing then .
Clarithromycin	R
Clindamycin	R
Colistin	if missing then R
Daptomycin	R
Dicloxacillin	R
Doxycycline	if missing then S if tetracycline-S; else R
Doripenem	E meropenem
Ertapenem	if missing then S if ceftriaxone-S or cefotaxime-S; else .
Gentamicin	if missing then .
Imipenem	if missing then S if ceftriaxone-S or cefotaxime-S; else .
Levofloxacin	if missing then .
Linezolid	R
Meropenem	if missing then S if imipenem-S; if missing then S if ceftriaxone-S; or cefotaxime-S else .
Metronidazole	R
Minocycline	if missing then S if tetracycline-S; else R
Moxifloxacin	if missing then .
Nafcillin	R
Oxacillin	R
Penicillin	R
Piperacillin-Tazobactam	if missing then S if piperacillin-S; if missing then S if ceftriaxone-S or cefotaxime-S; else .
Quinupristin-Dalfopristin	R
Tetracycline	if missing then R
Tigecycline	if missing then .
Tobramycin	if missing then .
TMP-SMX	if missing then S if trimethoprim-S; else .
Vancomycin	R

C. *Enterobacter* species

Antibiotic	Susceptibility Imputation
Amikacin	if missing then .
Amoxicillin-Clavulanate	R
Ampicillin	R
Ampicillin-Sulbactam	R
Azithromycin	R
Aztreonam	if missing then .
Cefadroxil	R
Cefepime	if missing then S if ceftriaxone-S or cefotaxime-S; else .
Ceftazidime	if missing then S if ceftriaxone-S or cefotaxime-S; else .
Ceftriaxone	if missing then E cefotaxime; if missing then .
Cefazolin	R
Cefotaxime	if missing then E ceftriaxone; if missing then .
Cefotetan	R
Cefoxitin	R
Cefpodoxime	if missing then E ceftriaxone; if missing then E cefotaxime; if missing then .
Ceftaroline	if missing then .
Cefuroxime	if missing then .
Cephalexin	R
Ciprofloxacin	if missing then .
Clarithromycin	R
Clindamycin	R
Colistin	if missing then .
Daptomycin	R
Dicloxacillin	R
Doxycycline	if missing then S if tetracycline-S; else R
Doripenem	E meropenem
Ertapenem	if missing then S if ceftriaxone-S or cefotaxime-S; else .
Gentamicin	if missing then .
Imipenem	if missing then S if ceftriaxone-S or cefotaxime-S; else .
Levofloxacin	if missing then .
Linezolid	R
Meropenem	if missing then S if imipenem-S; if missing then S if ceftriaxone-S or cefotaxime-S; else .
Metronidazole	R
Minocycline	if missing then S if tetracycline-S; else R
Moxifloxacin	if missing then .
Nafcillin	R
Oxacillin	R
Penicillin	R
Piperacillin-Tazobactam	if missing then S if piperacillin-S; if missing then S if ceftriaxone-S or cefotaxime-S; else .
Quinupristin-Dalfopristin	R
Tetracycline	if missing then R
Tigecycline	if missing then .
Tobramycin	if missing then .
TMP-SMX	if missing then S if trimethoprim-S; else .

Vancomycin	R

D. *Escherichia coli*

Antibiotic	Susceptibility Imputation
Amikacin	if missing then .
Amoxicillin-Clavulanate	if missing then S if ampicillin-S; else .
Ampicillin	if missing then .
Ampicillin-Sulbactam	if missing then E amoxicillin-clavulanate; if missing then S if ampicillin-S; else .
Azithromycin	if missing then E erythromycin; if missing then E clarithromycin; if missing then R
Aztreonam	if missing then E ceftriaxone; if missing then E cefotaxime; if missing then .
Cefadroxil	if missing then E cefazolin; if missing then .
Cefepime	if missing then S if ceftriaxone-S or cefotaxime-S or cefazolin-S; else .
Ceftazidime	if missing then S if ceftriaxone-S or cefotaxime-S or cefazolin-S; else .
Ceftriaxone	if missing then E cefotaxime; if missing then S if cefazolin-S; else .
Cefazolin	if missing then .
Cefotaxime	if missing then E ceftriaxone; if missing then S if cefazolin-S; else .
Cefotetan	if missing then S if cefazolin-S; else .
Cefoxitin	if missing then S if cefazolin-S; else .
Cefpodoxime	if missing then E ceftriaxone; if missing then E cefotaxime; if missing then S if cefazolin-S; if missing then .
Ceftaroline	if missing then .
Cefuroxime	if missing then S if cefazolin-S; else .
Cephalexin	if missing then .
Ciprofloxacin	if missing then .
Clarithromycin	if missing then R
Clindamycin	R
Colistin	if missing then .
Daptomycin	R
Dicloxacillin	R
Doxycycline	if missing then S if tetracycline-S; else R
Doripenem	E meropenem
Ertapenem	if missing then S if ceftriaxone-S or cefotaxime-S or cefazolin-S; else .
Gentamicin	if missing then .
Imipenem	if missing then S if ceftriaxone-S or cefotaxime-S or cefazolin-S; else .
Levofloxacin	if missing then .
Linezolid	R
Meropenem	if missing then S if imipenem-S; if missing then S if ceftriaxone-S or cefotaxime-S or cefazolin-S; else .
Metronidazole	R
Minocycline	if missing then S if tetracycline-S; else R
Moxifloxacin	if missing then .
Nafcillin	R
Oxacillin	R
Penicillin	R
Piperacillin-Tazobactam	if missing then S if piperacillin-S; if missing then S if ceftriaxone-S or cefotaxime-S or cefazolin-S; else .

Quinupristin-Dalfopristin	R
Tetracycline	if missing then R
Tigecycline	if missing then .
Tobramycin	if missing then .
TMP-SMX	if missing then S if trimethoprim-S; else .
Vancomycin	R

E. *Klebsiella* species

Antibiotic	Susceptibility Imputation
Amikacin	if missing then .
Amoxicillin-Clavulanate	if missing then .
Ampicillin	R
Ampicillin-Sulbactam	if missing then E amoxicillin-clavulanate; if missing then .
Azithromycin	if missing then E erythromycin; if missing then E clarithromycin; if missing then R
Aztreonam	if missing then E ceftriaxone; if missing then E cefotaxime; if missing then .
Cefadroxil	if missing then E cefazolin; if missing then .
Cefepime	if missing then S if ceftriaxone-S or cefotaxime-S or cefazolin-S; else .
Ceftazidime	if missing then S if ceftriaxone-S or cefotaxime-S or cefazolin-S; else .
Ceftriaxone	if missing then E cefotaxime; if missing then S if cefazolin-S; else .
Cefazolin	if missing then .
Cefotaxime	if missing then E ceftriaxone; if missing then S if cefazolin-S; else .
Cefotetan	if missing then S if cefazolin-S; else .
Cefoxitin	if missing then S if cefazolin-S; else .
Cefpodoxime	if missing then E ceftriaxone; if missing then E cefotaxime; if missing then S if cefazolin-S; if missing then .
Ceftaroline	if missing then .
Cefuroxime	if missing then S if cefazolin-S; else .
Cephalexin	if missing then .
Ciprofloxacin	if missing then .
Clarithromycin	if missing then E erythromycin; if missing then E azithromycin; if missing then R
Clindamycin	R
Colistin	if missing then .
Daptomycin	R
Dicloxacillin	R
Doxycycline	if missing then S if tetracycline-S; else R
Doripenem	E meropenem
Ertapenem	if missing then S if ceftriaxone-S or cefotaxime-S or cefazolin-S; else .
Gentamicin	if missing then .
Imipenem	if missing then S if ceftriaxone-S or cefotaxime-S or cefazolin-S; else .
Levofloxacin	if missing then .
Linezolid	R
Meropenem	if missing then S if imipenem-S; if missing then S if ceftriaxone-S or cefotaxime-S or cefazolin-S; else .
Metronidazole	R
Minocycline	if missing then S if tetracycline-S; else .
Moxifloxacin	if missing then .
Nafcillin	R
Oxacillin	R
Penicillin	R

Piperacillin-Tazobactam	if missing then S if piperacillin-S; if missing then S if ceftriaxone-S or cefotaxime-S or cefazolin-S; else .
Quinupristin-Dalfopristin	R
Tetracycline	if missing then R
Tigecycline	if missing then .
Tobramycin	if missing then .
TMP-SMX	if missing then S if trimethoprim-S; else .
Vancomycin	R

F. *Proteus* species

Antibiotic	Susceptibility Imputation
Amikacin	if missing then .
Amoxicillin-Clavulanate	if missing then S if ampicillin-S; else .
Ampicillin	if missing then .
Ampicillin-Sulbactam	if missing then E amoxicillin-clavulanate; if missing then S if ampicillin-S; else .
Azithromycin	if missing then E erythromycin; if missing then E clarithromycin; if missing then R
Aztreonam	if missing then .
Cefadroxil	R
Cefepime	if missing then S if ceftriaxone-S or cefotaxime-S or cefazolin-S; else .
Ceftazidime	if missing then S if ceftriaxone-S or cefotaxime-S or cefazolin-S; else .
Ceftriaxone	if missing then E cefotaxime; if missing then S if cefazolin-S; else .
Cefazolin	if missing then .
Cefotaxime	if missing then E ceftriaxone; if missing then S if cefazolin-S; else .
Cefotetan	if missing then S if cefazolin-S; else .
Cefoxitin	if missing then S if cefazolin-S; else .
Cefpodoxime	if missing then E ceftriaxone; if missing then E cefotaxime; if missing then S if cefazolin-S; if missing then .
Ceftaroline	if missing then .
Cefuroxime	if missing then .
Cephalexin	if missing then E cefazolin; if missing then .
Ciprofloxacin	if missing then .
Clarithromycin	if missing then R
Clindamycin	R
Colistin	if missing then R
Daptomycin	R
Dicloxacillin	R
Doxycycline	R
Doripenem	E meropenem
Ertapenem	if missing then S if ceftriaxone-S or cefotaxime-S or cefazolin-S; else .
Gentamicin	if missing then .
Imipenem	if missing then S if ceftriaxone-S or cefotaxime-S or cefazolin-S; else .
Levofloxacin	if missing then .
Linezolid	R
Meropenem	if missing then S if imipenem-S; if missing then S if ceftriaxone-S or cefotaxime-S or cefazolin-S; else .
Metronidazole	R
Minocycline	R
Moxifloxacin	if missing then .
Nafcillin	R

Oxacillin	R
Penicillin	R
Piperacillin-Tazobactam	if missing then S if piperacillin-S; if missing then S if ceftriaxone-S or cefotaxime-S or cefazolin-S; else .
Quinupristin-Dalfopristin	R
Tetracycline	R
Tigecycline	R
Tobramycin	if missing then .
TMP-SMX	if missing then S if trimethoprim-S; else R
Vancomycin	R

G. *Pseudomonas aeruginosa*

Antibiotic	Susceptibility Imputation
Amikacin	if missing then .
Amoxicillin-Clavulanate	R
Ampicillin	R
Ampicillin-Sulbactam	R
Azithromycin	R
Aztreonam	if missing then .
Cefadroxil	R
Cefepime	if missing then .
Ceftazidime	if missing then .
Ceftriaxone	R
Cefazolin	R
Cefotaxime	R
Cefotetan	R
Cefoxitin	R
Cefpodoxime	R
Ceftaroline	R
Cefuroxime	R
Cephalexin	R
Ciprofloxacin	if missing then .
Clarithromycin	R
Clindamycin	R
Colistin	if missing then .
Daptomycin	R
Dicloxacillin	R
Doxycycline	R
Doripenem	E meropenem
Ertapenem	R
Gentamicin	if missing then .
Imipenem	if missing then .
Levofloxacin	if missing then .
Linezolid	R
Meropenem	if missing then S if imipenem-S; if missing then .
Metronidazole	R
Minocycline	R
Moxifloxacin	R
Nafcillin	R
Oxacillin	R
Penicillin	R

Piperacillin-Tazobactam	if missing then S if piperacillin-S; if missing then .
Quinupristin-Dalfopristin	R
Tetracycline	R
Tigecycline	R
Tobramycin	if missing then .
TMP-SMX	R
Vancomycin	R

H. *Serratia* species

Antibiotic	Susceptibility Imputation
Amikacin	if missing then .
Amoxicillin-Clavulanate	R
Ampicillin	R
Ampicillin-Sulbactam	R
Azithromycin	R
Aztreonam	if missing then .
Cefadroxil	R
Cefepime	if missing then S if ceftriaxone-S or cefotaxime-S; else .
Ceftazidime	if missing then S if ceftriaxone-S or cefotaxime-S; else .
Ceftriaxone	if missing then E cefotaxime; if missing then .
Cefazolin	R
Cefotaxime	if missing then E ceftriaxone; if missing then .
Cefotetan	R
Cefoxitin	R
Cefpodoxime	if missing then E ceftriaxone; if missing then E cefotaxime; if missing then .
Ceftaroline	if missing then .
Cefuroxime	R
Cephalexin	R
Ciprofloxacin	if missing then .
Clarithromycin	R
Clindamycin	R
Colistin	if missing then R
Daptomycin	R
Dicloxacillin	R
Doxycycline	if missing then S if tetracycline-S; else R
Doripenem	E meropenem
Ertapenem	if missing then S if ceftriaxone-S or cefotaxime-S; else .
Gentamicin	if missing then .
Imipenem	if missing then S if ceftriaxone-S or cefotaxime-S; else .
Levofloxacin	if missing then .
Linezolid	R
Meropenem	if missing then S if imipenem-S; if missing then S if ceftriaxone-S or cefotaxime-S; else .
Metronidazole	R
Minocycline	if missing then S if tetracycline-S; else R
Moxifloxacin	if missing then .

Nafcillin	R
Oxacillin	R
Penicillin	R
Piperacillin-Tazobactam	if missing then S if piperacillin-S; if missing then S if ceftriaxone-S or cefotaxime-S; if missing then .
Quinupristin-Dalfopristin	R
Tetracycline	if missing then R
Tigecycline	if missing then .
Tobramycin	if missing then .
TMP-SMX	if missing then S if trimethoprim-S; else R
Vancomycin	R

II. GRAM-POSITIVE ORGANISMS

A. Penicillin-sensitive *Staphylococcus aureus*

Antibiotic	Susceptibility Imputation
Amikacin	R
Amoxicillin-Clavulanate	S
Ampicillin	S
Ampicillin-Sulbactam	S
Azithromycin	if missing then E erythromycin; if missing then .
Aztreonam	R
Cefadroxil	S
Cefepime	S
Ceftazidime	R
Ceftriaxone	S
Cefazolin	S
Cefotaxime	S
Cefotetan	S
Cefoxitin	S
Cefpodoxime	S
Ceftaroline	S
Cefuroxime	S
Cephalexin	S
Ciprofloxacin	R
Clarithromycin	if missing then E erythromycin; if missing then E azithromycin; if missing then .
Clindamycin	if missing then .
Colistin	R
Daptomycin	if missing then S
Dicloxacillin	S
Doxycycline	if missing then S if tetracycline-S; else .
Doripenem	S
Ertapenem	S
Gentamicin	R
Imipenem	S
Levofloxacin	if missing then E moxifloxacin; if missing then .
Linezolid	if missing then S
Meropenem	S
Metronidazole	R
Minocycline	if missing then S if tetracycline-S; else .
Moxifloxacin	if missing then E levofloxacin; if missing then .
Nafcillin	S
Oxacillin	S
Penicillin	S
Piperacillin-Tazobactam	S
Quinupristin-Dalfopristin	if missing then S
Tetracycline	if missing then .
Tigecycline	if missing then S
Tobramycin	R
TMP-SMX	if missing then S if trimethoprim-S; if missing then .
Vancomycin	if missing then S

B. Methicillin-sensitive *Staphylococcus aureus*

Antibiotic	Susceptibility Imputation
Amikacin	R
Amoxicillin-Clavulanate	S
Ampicillin	R
Ampicillin-Sulbactam	S
Azithromycin	if missing then E erythromycin; if missing then .
Aztreonam	R
Cefadroxil	S
Cefepime	S
Ceftazidime	R
Ceftriaxone	S
Cefazolin	S
Cefotaxime	S
Cefotetan	S
Cefoxitin	S
Cefpodoxime	S
Ceftaroline	S
Cefuroxime	S
Cephalexin	S
Ciprofloxacin	R
Clarithromycin	if missing then E erythromycin; if missing then E azithromycin; if missing then .
Clindamycin	if missing then .
Colistin	R
Daptomycin	if missing then S
Dicloxacillin	S
Doxycycline	if missing then S if tetracycline-S; else .
Doripenem	S
Ertapenem	S
Gentamicin	R
Imipenem	S
Levofloxacin	if missing then E moxifloxacin; if missing then .
Linezolid	if missing then S
Meropenem	S
Metronidazole	R
Minocycline	if missing then S if tetracycline-S; else .
Moxifloxacin	if missing then E levofloxacin; if missing then .
Nafcillin	S
Oxacillin	S
Penicillin	R
Piperacillin-Tazobactam	S
Quinupristin-Dalfopristin	if missing then S
Tetracycline	if missing then .
Tigecycline	if missing then S
Tobramycin	R
TMP-SMX	if missing then S if trimethoprim-S; if missing then .
Vancomycin	if missing then S

C. Methicillin-Resistant *Staphylococcus aureus*

Antibiotic	Susceptibility Imputation
Amikacin	R
Amoxicillin-Clavulanate	R
Ampicillin	R
Ampicillin-Sulbactam	R
Azithromycin	if missing then E erythromycin; if missing then .
Aztreonam	R
Cefadroxil	R
Cefepime	R
Ceftazidime	R
Ceftriaxone	R
Cefazolin	R
Cefotaxime	R
Cefotetan	R
Cefoxitin	R
Cefpodoxime	R
Ceftaroline	S
Cefuroxime	R
Cephalexin	R
Ciprofloxacin	R
Clarithromycin	if missing then E erythromycin; if missing then E azithromycin; if missing then .
Clindamycin	if missing then .
Colistin	R
Daptomycin	if missing then S
Dicloxacillin	R
Doxycycline	if missing then S if tetracycline-S; else .
Doripenem	R
Ertapenem	R
Gentamicin	R
Imipenem	R
Levofloxacin	if missing then E moxifloxacin; if missing then .
Linezolid	if missing then S
Meropenem	R
Metronidazole	R
Minocycline	if missing then S if tetracycline-S; else .
Moxifloxacin	if missing then E levofloxacin; if missing then .
Nafcillin	R
Oxacillin	R
Penicillin	R
Piperacillin-Tazobactam	R
Quinupristin-Dalfopristin	if missing then S
Tetracycline	if missing then .
Tigecycline	if missing then S
Tobramycin	R
TMP-SMX	if missing then S if trimethoprim-S; if missing then .

Vancomycin	if missing then S

D. *Streptococcus pneumoniae*

Antibiotic	Susceptibility Imputation
Amikacin	R
Amoxicillin-Clavulanate	if missing then S if penicillin-S; if missing then .
Ampicillin	if missing then E penicillin; if missing then .
Ampicillin-Sulbactam	if missing then S if penicillin-S; if missing then .
Azithromycin	if missing then E erythromycin; if missing then .
Aztreonam	R
Cefadroxil	if missing then E cefazolin; if missing then S if penicillin-S; if missing then .
Cefepime	if missing then E ceftriaxone; if missing then S if penicillin-S; if missing then .
Ceftazidime	R
Ceftriaxone	if missing then E cefotaxime; if missing then S if penicillin-S; if missing then .
Cefazolin	if missing then S if penicillin-S; if missing then .
Cefotaxime	if missing then E ceftriaxone; if missing then S if penicillin-S; if missing then .
Cefotetan	if missing then R
Cefoxitin	if missing then R
Cefpodoxime	if missing then E ceftriaxone; if missing then E cefotaxime; if missing then S if penicillin-S; if missing then .
Ceftaroline	if missing then S
Cefuroxime	if missing then S if penicillin-S; if missing then .
Cephalexin	if missing then S if penicillin-S; if missing then .
Ciprofloxacin	R
Clarithromycin	if missing then E erythromycin; if missing then E azithromycin; if missing then .
Clindamycin	if missing then .
Colistin	R
Daptomycin	if missing then S
Dicloxacillin	if missing then S if penicillin-S; if missing then .
Doxycycline	if missing then S if tetracycline-S; else .
Doripenem	E meropenem
Ertapenem	if missing then S if ceftriaxone-S; if missing then S if cefotaxime-S; if missing then S if penicillin-S; if missing then .
Gentamicin	R
Imipenem	if missing then S if ceftriaxone-S; if missing then S if cefotaxime-S; if missing then S if penicillin-S; if missing then .
Levofloxacin	if missing then .
Linezolid	if missing then S
Meropenem	if missing then S if ceftriaxone-S; if missing then S if cefotaxime-S; if missing then S if penicillin-S; if missing then .
Metronidazole	R
Minocycline	if missing then S if tetracycline-S; else .
Moxifloxacin	if missing then E levofloxacin; if missing then .
Nafcillin	if missing then S if penicillin-S; if missing then .
Oxacillin	if missing then S if penicillin-S; if missing then .
Penicillin	if missing then .
Piperacillin-Tazobactam	if missing then S if ceftriaxone-S; if missing then S if cefotaxime-S; if missing

	then S if penicillin-S; if missing then .
Quinupristin-Dalfopristin	S
Tetracycline	if missing then .
Tigecycline	S
Tobramycin	R
TMP-SMX	if missing then S if trimethoprim-S; if missing then .
Vancomycin	S

E. Beta-Hemolytic *Streptococcus* species

Antibiotic	Susceptibility Imputation
Amikacin	R
Amoxicillin-Clavulanate	if missing then S if penicillin-S; if missing then .
Ampicillin	if missing then E penicillin; if missing then .
Ampicillin-Sulbactam	if missing then S if penicillin-S; if missing then .
Azithromycin	if missing then E erythromycin; if missing then .
Aztreonam	R
Cefadroxil	if missing then E cefazolin; if missing then S if penicillin-S; if missing then .
Cefepime	S
Ceftazidime	R
Ceftriaxone	S
Cefazolin	if missing then S if penicillin-S; if missing then .
Cefotaxime	S
Cefotetan	R
Cefoxitin	R
Cefpodoxime	S
Ceftaroline	S
Cefuroxime	S
Cephalexin	if missing then S if penicillin-S; if missing then .
Ciprofloxacin	R
Clarithromycin	if missing then E erythromycin; if missing then E azithromycin; if missing then .
Clindamycin	if missing then .
Colistin	R
Daptomycin	if missing then S
Dicloxacillin	if missing then S if penicillin-S; if missing then .
Doxycycline	if missing then S if tetracycline-S; else .
Doripenem	S
Ertapenem	S
Gentamicin	R
Imipenem	S
Levofloxacin	if missing then S
Linezolid	S
Meropenem	S
Metronidazole	R
Minocycline	if missing then S if tetracycline-S; else .
Moxifloxacin	if missing then E levofloxacin; if missing then S
Nafcillin	if missing then S if penicillin-S; if missing then .
Oxacillin	if missing then S if penicillin-S; if missing then .
Penicillin	if missing then S
Piperacillin-Tazobactam	if missing then S
Quinupristin-Dalfopristin	S
Tetracycline	if missing then .

Tigecycline	S
Tobramycin	R
TMP-SMX	if missing then S if trimethoprim-S; if missing then .
Vancomycin	S

F. Alpha-hemolytic / Viridans *Streptococcus* species

Antibiotic	Susceptibility Imputation
Amikacin	R
Amoxicillin-Clavulanate	if missing then S if penicillin-S; if missing then .
Ampicillin	if missing then E penicillin; if missing then .
Ampicillin-Sulbactam	if missing then S if penicillin-S; if missing then .
Azithromycin	if missing then E erythromycin; if missing then .
Aztreonam	R
Cefadroxil	if missing then E cefazolin; if missing then S if penicillin-S; if missing then .
Cefepime	if missing then E ceftriaxone; if missing then S if penicillin-S; if missing then .
Ceftazidime	R
Ceftriaxone	if missing then E cefotaxime; if missing then S if penicillin-S; if missing then .
Cefazolin	if missing then S if penicillin-S; if missing then .
Cefotaxime	if missing then E ceftriaxone; if missing then S if penicillin-S; if missing then .
Cefotetan	R
Cefoxitin	if missing then R
Cefpodoxime	if missing then E ceftriaxone; if missing then E cefotaxime; if missing then S if penicillin-S; if missing then .
Ceftaroline	if missing then S
Cefuroxime	if missing then S if penicillin-S; if missing then .
Cephalexin	if missing then S if penicillin-S; if missing then .
Ciprofloxacin	R
Clarithromycin	if missing then .
Clindamycin	if missing then .
Colistin	R
Daptomycin	if missing then S
Dicloxacillin	if missing then S if penicillin-S; if missing then .
Doxycycline	if missing then S if tetracycline-S; else R
Doripenem	E meropenem
Ertapenem	if missing then S if ceftriaxone-S; if missing then S if cefotaxime-S; if missing then S if penicillin-S; if missing then .
Gentamicin	R
Imipenem	if missing then S if ceftriaxone-S; if missing then S if cefotaxime-S; if missing then S if penicillin-S; if missing then .
Levofloxacin	if missing then .
Linezolid	S
Meropenem	if missing then S if ceftriaxone-S; if missing then S if cefotaxime-S; if missing then S if penicillin-S; if missing then .
Metronidazole	R
Minocycline	if missing then S if tetracycline-S; else .
Moxifloxacin	if missing then E levofloxacin; if missing then .
Nafcillin	if missing then S if penicillin-S; if missing then .

Oxacillin	if missing then S if penicillin-S; if missing then .
Penicillin	if missing then .
Piperacillin-Tazobactam	if missing then S if ceftriaxone-S; if missing then S if cefotaxime-S; if missing then S if penicillin-S; if missing then .
Quinupristin-Dalfopristin	S
Tetracycline	if missing then R
Tigecycline	if missing then S
Tobramycin	R
TMP-SMX	if missing then S if trimethoprim-S; if missing then .
Vancomycin	if missing then S

G. *Enterococcus* species

Antibiotic	Susceptibility Imputation
Amikacin	R
Amoxicillin-Clavulanate	if missing then E ampicillin; if missing then E penicillin; if missing then .
Ampicillin	if missing then E penicillin; if missing then .
Ampicillin-Sulbactam	if missing then E ampicillin; if missing then E penicillin; if missing then .
Azithromycin	R
Aztreonam	R
Cefadroxil	R
Cefepime	R
Ceftazidime	R
Ceftriaxone	R
Cefazolin	R
Cefotaxime	R
Cefotetan	R
Cefoxitin	R
Cefpodoxime	R
Ceftaroline	if missing then S
Cefuroxime	R
Cephalexin	R
Ciprofloxacin	R
Clarithromycin	R
Clindamycin	R
Colistin	R
Daptomycin	if missing then S
Dicloxacillin	R
Doxycycline	R
Doripenem	E meropenem
Ertapenem	R
Gentamicin	R
Imipenem	if missing then E ampicillin; if missing then E penicillin; if missing then .
Levofloxacin	R
Linezolid	if missing then S
Meropenem	if missing then E ampicillin; if missing then E penicillin; if missing then .
Metronidazole	R
Minocycline	R
Moxifloxacin	R
Nafcillin	R
Oxacillin	R
Penicillin	if missing then .

Piperacillin-Tazobactam	if missing then E ampicillin; if missing then E penicillin; if missing then .
Quinupristin-Dalfopristin	if missing then S
Tetracycline	R
Tigecycline	if missing then S
Tobramycin	R
TMP-SMX	R
Vancomycin	if missing then .