

Supplement Materials

Figure S1. Mind map organises data extraction for antimicrobial stewardship.

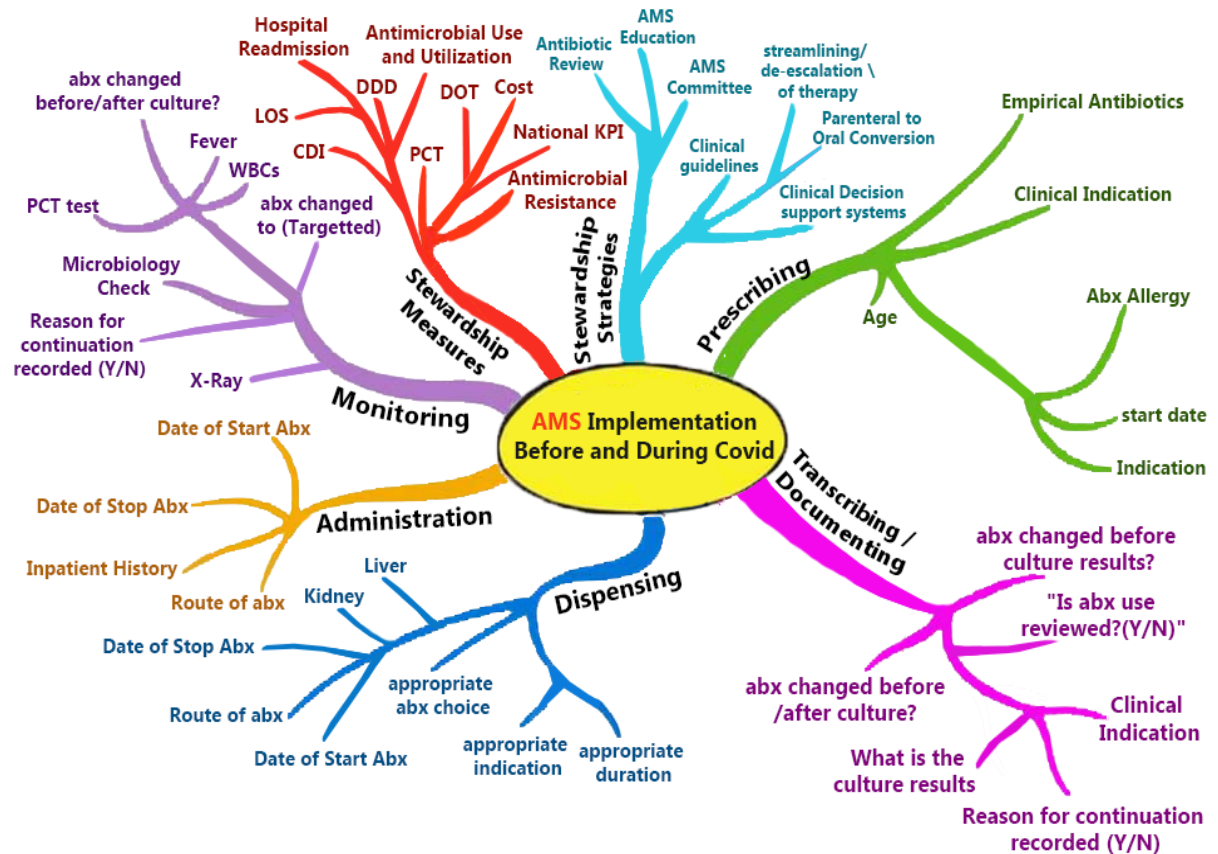


Figure S2. Framework used for data analysis used in this retrospective study.



Table S1. Data Extraction Tool used in this retrospective study.

Patient Demography	
Patient Study ID number:	Patient hospital number:
Patient age:	Gender:
Start Smart	
Allergies:	Date of admission:
Main diagnosis/Clinical Indication:	Medical history / Co-morbidities:
Name of Initial antibiotic: (dose, frequency, route, and duration)	Is the duration/stop date documented (Y/N)?
Is complies with local guidelines (Y/N)?	Did culture send to Mic prior to Abx (Y/N)
Clinical investigations: <ul style="list-style-type: none"> X-Ray finding: Blood culture results: WBCs count: CRP result: D Dimer result: PCT result: Urea result: 	Other relevant clinical information: <ul style="list-style-type: none"> Symptoms on admission Confusion (Y/N): Others:
Then Focus	
Is abx clinically reviewed? (Y/N)	If yes, what is the review day, e.g., D1, D2, D3...?
If yes, who reviewed the Antibiotics? <ul style="list-style-type: none"> Prescribing Doctor Pharmacist 	What type of AMS intervention: <ul style="list-style-type: none"> Continue Antibiotics Change Antibiotics Escalation De-Escalation IV-to-Oral Switch Stop Antibiotics No Intervention
Antibiotic change (Escalation/De-escalation)	
What are the cultural results?	What is culture sensitivity results (S/R/I/NA)?
What is the name of the antibiotic changed after the culture results?	Is the changed antibiotic appropriately selected (Y/N)?
IV-to-Oral Switch	
Name of changed Oral Antibiotics?	Is the changed antibiotic appropriately selected (Y/N)?
Abx Stop	
When the antibiotic has been stopped?	Is antibiotic stop complying with the local guidelines (Y/N)?
Infection Control / Healthcare-associated infection (If the patient developed Secondary infection)?	
MRSA bacteremia (Y/N)	CDI (Y/N)
MDRO (Y/N)	COVID-19 (Y/N)
Antibiotic Safety Alert	
Is there any antibiotic allergic reaction? (Y/N)?	Is the antibiotic prescribed comply with the 5Rs, i.e. Right drug, dose, duration, route, and frequency)?
Patient Outcome	
What is the patient outcome(Discharged=1, Deceased=2)?	If discharged, what is the discharge date?
What is the Length of Stay (LOS)?	