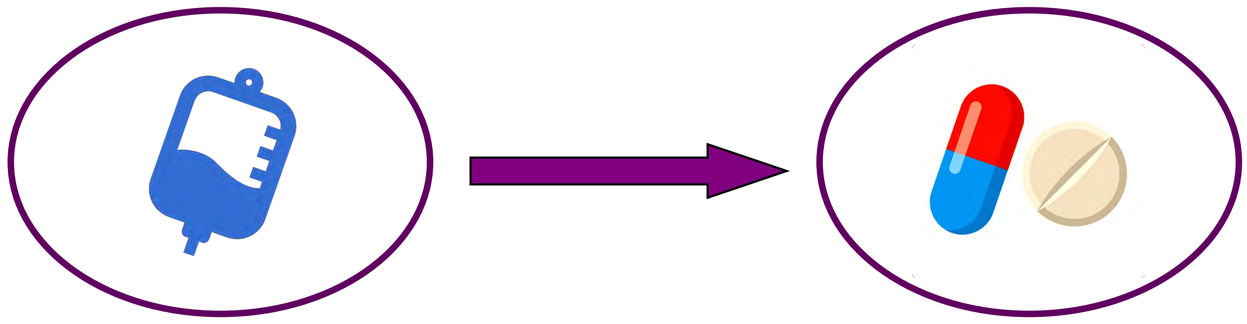
Less Jabs More Tabs:
A triage tool for antimicrobial switch



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BACKGROUND:

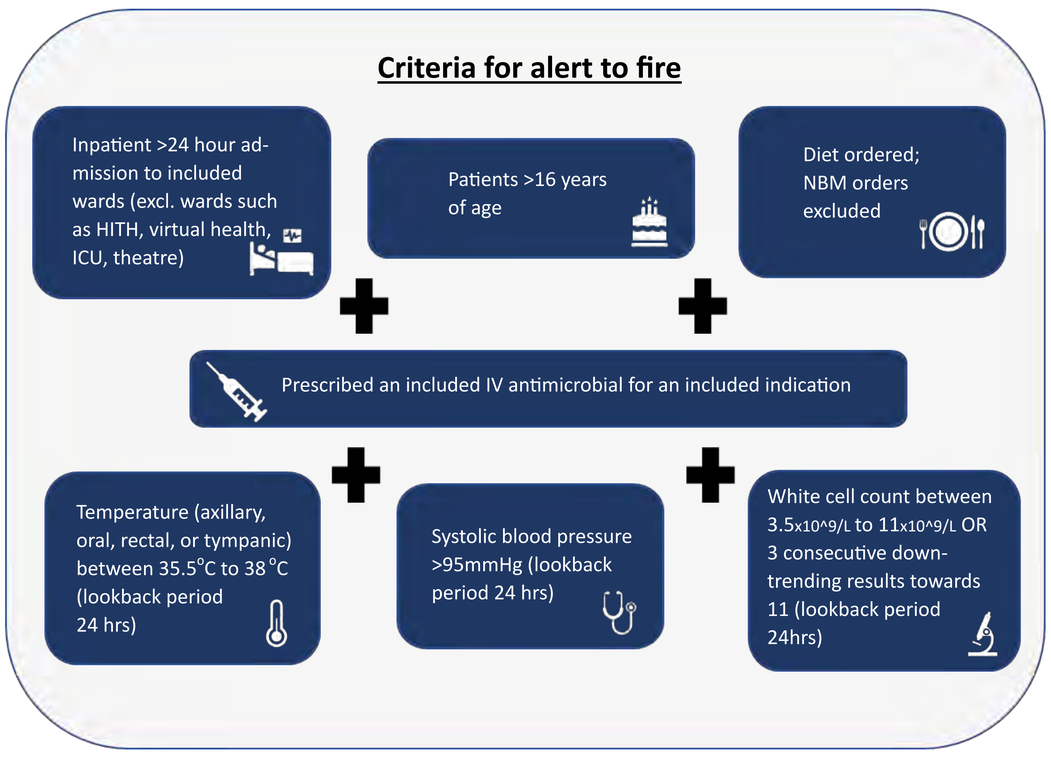
Inpatient intravenous (IV) antimicrobials are often prescribed for extended durations when oral therapy is possible. Early IV to oral (PO) antimicrobial switch aims to optimise the use of antimicrobials and reduce complications associated with IV administration without compromising patient outcomes. It also reduces healthcare expenditure and environmental impact.

AIM:

To implement a criteria-based electronic medication record (eMR) alert that triages orders and flags IV antimicrobial prescriptions that are likely suitable for a safe conversion to PO therapy.

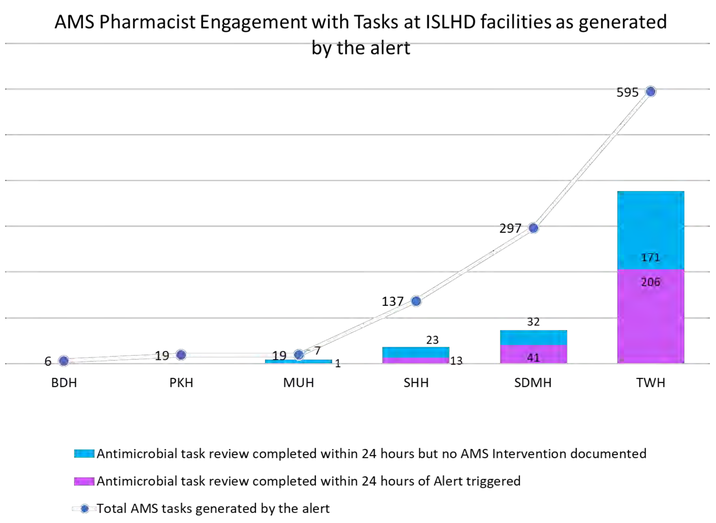
METHOD:

- An inclusion criterion was established by the ISLHD/SESLHD Antimicrobial Stewardship (AMS) Clinical Applications Advisory Group, and developed into an alert logic in Powerchart
- When a patient meets the established criteria, a non-interruptive alert is triggered. The alert then places a task in the specified tab of the Census Task List
- The AMS pharmacist, in conjunction with ID medical officer where required, reviews the generated tasks and conducts a clinical review
- On AMS Review: where the patient had no contraindications for IV to PO switch an AMS intervention note was placed and advice provided to the treating team



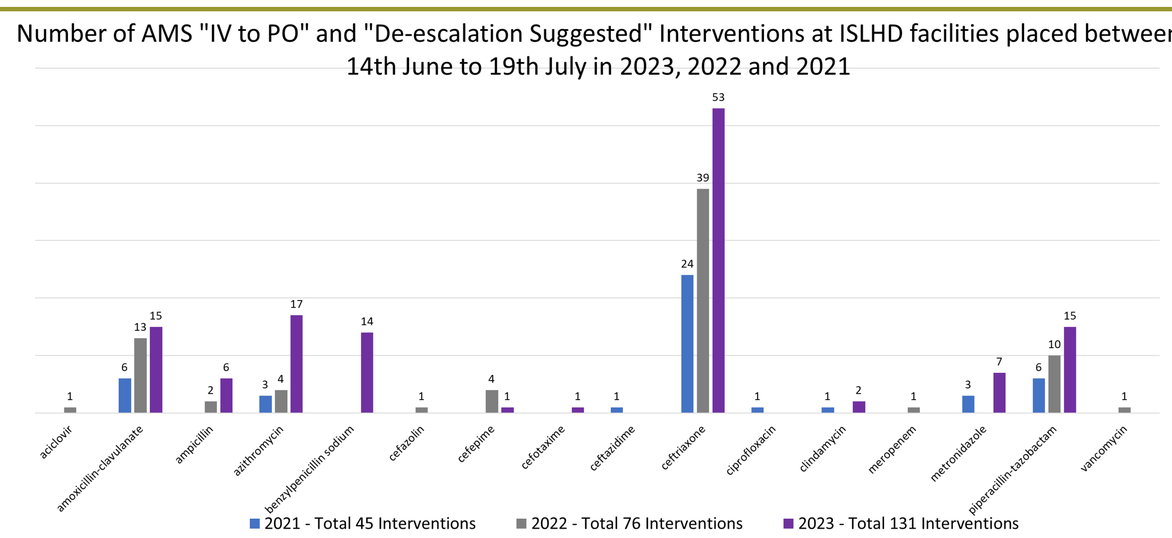
Key AMS Indications Included	Key Antimicrobials Included
Appendicitis	Ampicillin
Bronchiectasis	Azithromycin
Bronchiolitis	Benzylpenicillin
Cholangitis/Cholecystitis	Cefazolin
COPD	Cefepime
Cystitis/UTI	Ceftriaxone
Diverticulitis	Ciprofloxacin
Gastroenteritis and GI infections (e.g. C.difficile)	Clindamycin
Pneumonia (all types)	Flucloxacillin
Prostatitis	Fluconazole
Pyelonephritis	Meropenem
	Metronidazole
Note: each included indication had to align with the AMS indications available in eMR for prescribing medical officers to select. Above is a summarised list.	Moxifloxacin
	Piperacillin-Tazobactam
	Sulfamethoxazole-Trimethoprim

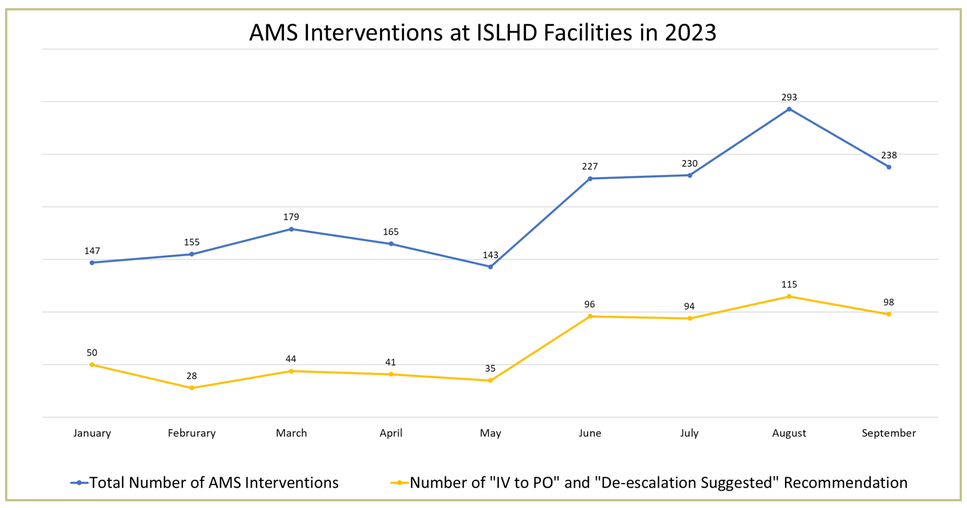
RESULTS:



Reasons for task review with no AMS intervention documented:

- 62% Medical/Surgical Teams had already switched patients within 24h of alert trigger and prior to AMS Pharmacist engagement with task.
- 23% Medical Teams had already received ID input
- 15% Other (ie. At time of review patient was not yet suitable for IV to PO Switch)





DISCUSSION:

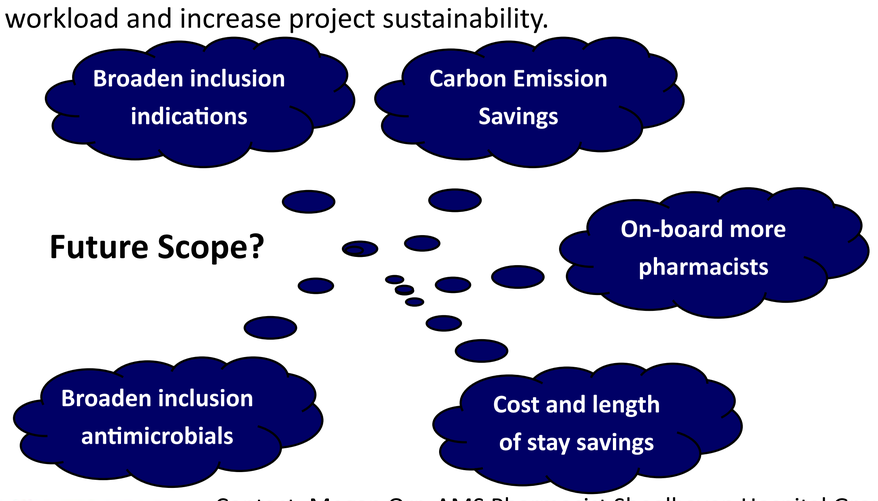
A 1.7-fold increase in AMS interventions suggesting either IV to PO switch or de-escalation of therapy has been demonstrated from 2022 to 2023. The significant difference noted between 2021 and 2022 in AMS interventions 'IV to PO' and 'de-escalation suggested' may be attributed to impacts of COVID, including redirection of AMS resources, patient hesitancy for admission, and COVID isolation rules.

Following implementation of the tool, AMS interventions for 2023 demonstrated a 2.5-fold increase in 'IV to PO' or 'de-escalation' recommendations, when comparing pre– and post-tool implementation data. The tasks generated by the alert that did not result in an AMS intervention for IV to PO switch shows some specificity limitations to the tool, such as the tool not reading blood culture results, imaging, and accuracy of indication selection by prescriber on the eMeds prescriptions.

The project has the advantage of triaging patients that would benefit from an AMS IV to PO switch recommendation, with the additional benefit of including unrestricted antimicrobials which would previously not have undergone AMS review. The use of both 'IV to PO recommended', and 'de-escalation suggested' interchangeably required both interventions to be included in data analysis, and has highlighted an area for AMS documentation improvement.

CONCLUSION:

By developing a specific criterion and including it into an alert logic, the clinical decision support tool has been supportive in identifying patients that are suitable candidates for IV to PO switch. The alert has increased number of AMS reviews and AMS IV to PO recommendations, with sustained improvement beyond the initial pilot period. Ongoing reviews of the project are required to determine impact on length-of-stay, cost, and environmental impact. The AMS team has been pivotal in reviewing tasks this alert generates and making recommendations to the treating teams accordingly. Future enhancements may include upskilling of non-AMS pharmacists to mitigate increases in AMS workload and increase project sustainability.



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