

4TH PHARMACIST ANNUAL SCIENTIFIC MEETING ON ANTIMICROBIAL

PASMA 4.0

STEWARDS FOR THE FUTURE: MAKING THE DIFFERENCE TOGETHER

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Impact of a Stewardship Protocol on Carbapenems Use in a Tertiary Care Center

SUNVAY MEDICAL CENTRE

Sunway City Kuala Lumpur

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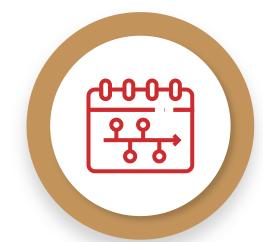
Background

Carbapenems are valuable antibiotics due to their broad-spectrum activity; however, inappropriate use can contribute to the development of resistance. At Sunway Medical Centre (SunMed), increasing carbapenems consumption prompted the implementation of an antimicrobial stewardship initiative. This study aims to evaluate the impact of a stewardship protocol comprising of carbapenems prescribing and de-escalation in SunMed.

Method

Study Design

Prospective interventional study



Timeline

Pre-intervention: January – June 2023 Post-intervention: July 2023 – December 2024



Inclusion Criteria

Prescription of meropenem or imipenem:

- for inpatients aged ≥12 years
- for duration of >24 hours

Interventions

- Implemented mandatory documentation of clinical indication for all carbapenems prescriptions.
- Established criteria of empirical use of carbapenems.
- Introduced carbapenems de-escalation workflow following multidisciplinary review.

Implementation & Maintenance

- Approval of stewardship protocol by Hospital Infection and Antibiotic Control Committee (HIACC) and dissemination to all prescribers in June 2023.
- Daily review and monitoring by clinical pharmacists, with reminder and intervention if appropriate.
- Quarterly update of progression in HIACC meeting.

Primary Outcome

• Change in defined daily doses (DDD) per 1,000 bed-days for carbapenems, hospital-wide and in the intensive care unit (ICU)

Secondary Outcome

• Compliance in documenting the clinical indication upon prescribing

Results

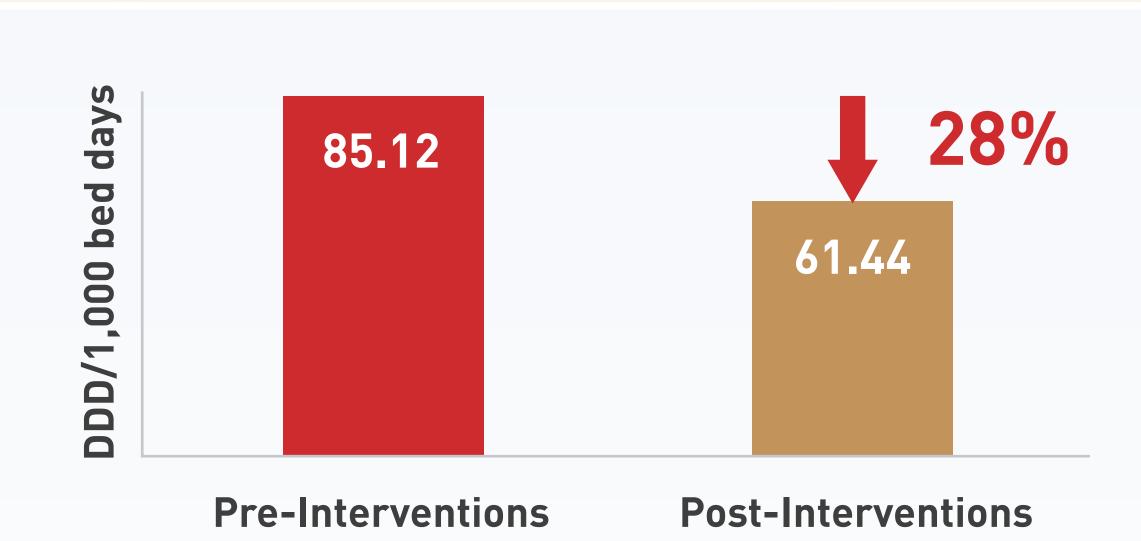


Figure 1a) DDD/1,000 bed days for carbapenems hospital-wide

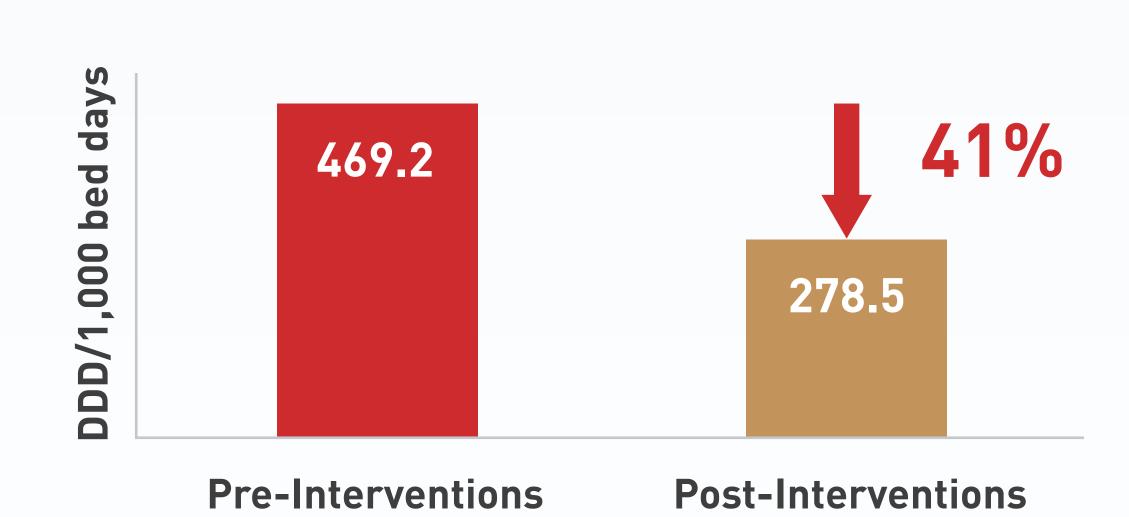


Figure 1b) DDD/1,000 bed days for carbapenems in the ICU

Figure 1: Carbapenems usage expressed in defined daily doses (DDD) per 1,000 bed-days: 1a) Hospital-wide, 1b) In the intensive care unit (ICU), before and after interventions implementation.

- a carbapenem
 Rate of carbapenems de-escalation
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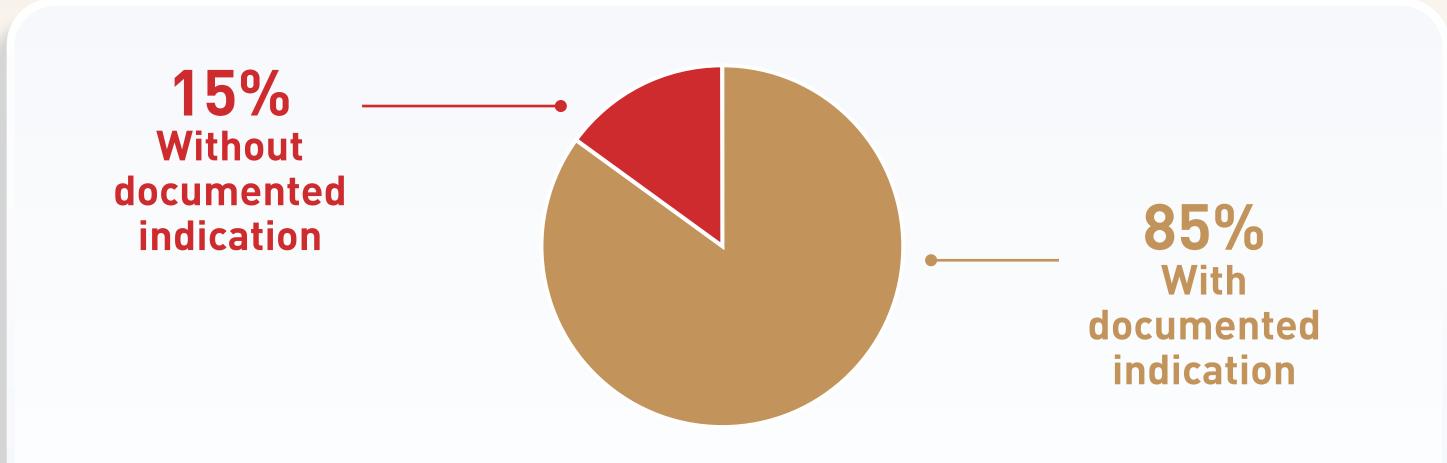


Figure 2: Compliance rate for documenting the clinical indication for a carbapenem use during the study period.

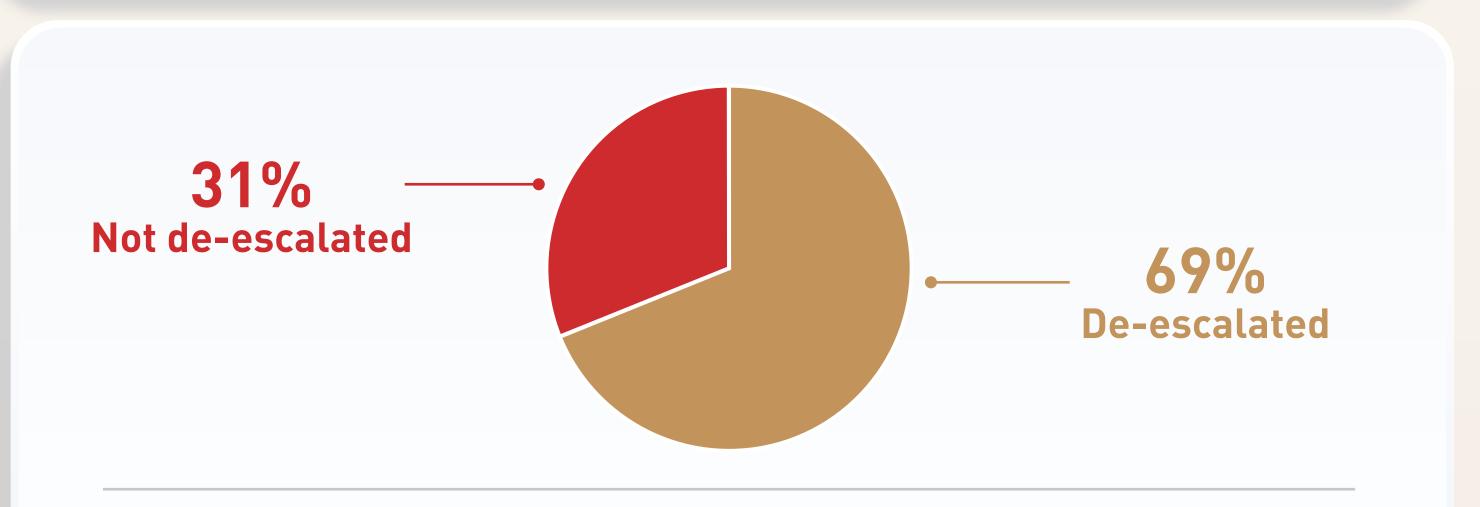


Figure 3: Rate of carbapenems de-escalation among eligible cases meeting the de-escalation criteria during the study period.

Conclusion

The implementation of the stewardship protocol with emphasis on carbapenems prescribing with documenting indication and carbapenem de-escalation strategies supported by clinical pharmacists' interventions, successfully promoted the judicious use of carbapenems in SunMed.

1. Wells DA, Johnson AJ, Lukas JG, Mason D, Cleveland KO, Bissell A, Hobbs ALV. Criteria Restricting Inappropriate Meropenem Empiricism (CRIME): a quasi-experimental carbapenem restriction pilot at a large academic medical centre. Int J Antimicrob Agents. 2022 Oct;60(4):106661.