A DIGITAL INTERVENTION TO DECREASE ANTIBIOTIC TREATMENT DURATIONS ACROSS 38 SOUTH AFRICAN HOSPITALS

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Introduction:

Prolonged antibiotic durations remain a key contributing factor for overuse of antibiotics, which is exacerbated by prescribers omitting treatment duration on prescriptions.

The implementation of the first South African multihospital electronic medical record (EMR) offered the opportunity for digitally enabled antimicrobial stewardship (AMS) interventions to support existing pharmacist-driven strategies.

Aim

This study evaluated the impact of enforcing a specified duration at the point of electronic antibiotic prescription via the EMR across a network of 38 private hospitals in South Africa to further support hospital AMS programs and reduce unnecessary extended antibiotic durations.

Method:

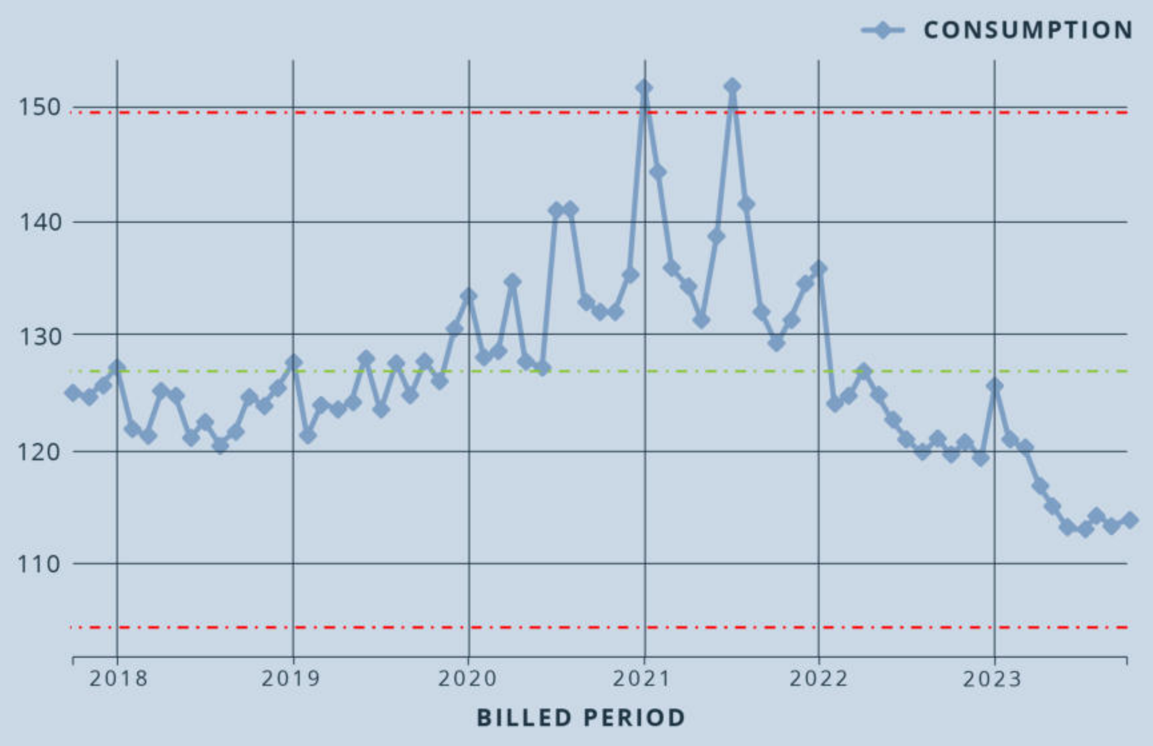
The EMR was introduced from 2019 in clusters across the hospital network. Quality improvement methodology was used throughout implementation using multiple "Plan-Do-Study-Act" cycles of change based on end user feedback. Frontline multidisciplinary AMS program members requested the field for duration of therapy for antibiotics to be made mandatory on all electronic antibiotic prescriptions, regardless of indication.

In March 2023, this digital intervention was implemented and included an 'ending soon' electronic notification for clinician review to stop or continue therapy if clinically indicated. Clinical pharmacists continued with audit and feedback activities, as before, for all other interventions.

The impact of this digital intervention on overall antibiotic consumption using the defined daily dose (DDD) per 100 bed day methodology was assessed comparing the pre intervention period (August 2022-February 2023) to the post implementation period (March 2023- October 2023). The Mann-Witney U Test was used for statistical analysis.

Results:

The digital intervention reduced mean antibiotic consumption of DDD per 100 bed days from 121.11 (95% CI 118.71 and 123.51) to 109.33 (95% CI 107.1 and 111.46) pre/post intervention ($p<0{\cdot}0003$) for 267316 and 314745 total antibiotic prescriptions per period respectively. These results have sustained and persisted to the present.



- Intervention reduced mean antibiotic consumption ($p<0{\cdot}0003$)
- 267316 and 314745 total antibiotic prescriptions per period respectively
- These results have been sustained and persist to the present

Conclusion:

Unnecessary extended antibiotic duration is a 'low hanging fruit' high impact AMS intervention. This digital intervention made a significant impact on reducing antibiotic consumption across multiple private hospitals and, demonstrates how technology, prescriber ownership and awareness can positively impact AMS programs.

Referencess
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