

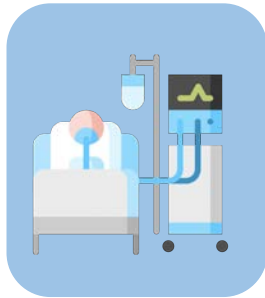


# Investigating variance in reporting times of vancomycin concentrations by availability of on-site therapeutic drug monitoring



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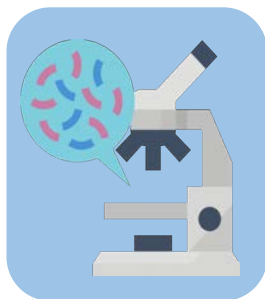


## BACKGROUND

Vancomycin is a high-risk antibiotic used to treat serious bacterial infections. Therapeutic drug monitoring (TDM) is necessary to ensure infections are treated effectively whilst minimising the risk of serious adverse effects such as nephrotoxicity. Timely processing and reporting of trough vancomycin concentrations is crucial, however not all pathology laboratories can process TDM on-site. Whilst there is ample research into many factors contributing to suboptimal vancomycin monitoring<sup>1-3</sup>, a gap in available literature evaluating the impact of prolonged reporting times was identified. Local incidents at Hospital 1 prompted an investigation into variance in reporting times across the Hospital and Health Service (HHS).

## OBJECTIVES

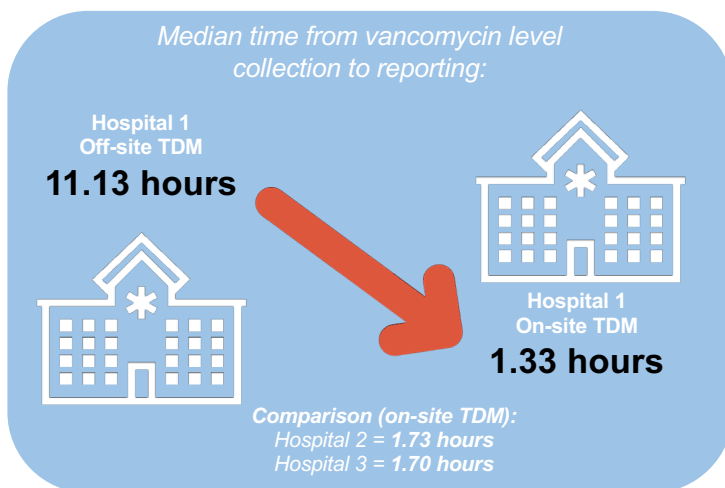
The aim of this quality improvement study was to investigate the variance in time from collection to reporting of vancomycin concentrations for three hospitals where the differentiating factor was the capacity for on-site processing of TDM.



## ACTION

A retrospective review from June to December 2021 was performed for three hospitals within the same HHS. Data was extracted from the AUSLAB pathology system and the median time from collection to reporting of vancomycin concentrations was calculated and reported in hours. On-site processing of TDM commenced at Hospital 1 in June 2022 and the data collection was repeated to review the first three months of data.

## EVALUATION



## DISCUSSION

Off-site processing of vancomycin TDM for Hospital 1 introduced a delay in reporting of approximately 10 hours when compared with hospitals that offer this service on-site. Prolonged reporting times at Hospital 1 resulted in vancomycin concentrations being validated and reported outside of standard working hours. Thematic analysis of clinical incidents found that reduced staffing availability after hours further delayed reviewing of therapeutic drug monitoring, resulting in up to two further doses of vancomycin being administered.

After commencement of on-site processing of vancomycin TDM at Hospital 1, the median reporting time **reduced from 11.13 hours to 1.33 hours (P<0.001)**.

## IMPACT

This study demonstrates the significant influence of on-site TDM on the timely reporting and reviewing of vancomycin concentration results. The results of this study may be used to provide strong evidence for the implementation of on-site TDM for vancomycin and other high-risk drugs.

## Acknowledgements:

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