

Reducing blood gas test wastage in Department of Emergency and Trauma at Hospital Selayang

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ABSTRACT

Introduction: There was high amount of blood gas test wastage in the Emergency Department due to sample clotting resulting in delay in patient management, wastage of resources and increase in cost. The aim of the study was to reduce the total number of blood gas test wastage. **Materials and Methods:** The study measured the percentage of blood gas test wastage by calculating the total number of blood gas test wastage in a cartridge over the total number of blood gas test per cartridge. Standard used was 15% and below based on an interdepartmental meeting between Emergency and Pathology Department. A prospective cross-sectional study was conducted from 1st March 2022 until 31st March 2023. Data was extracted from cartridge replacement audit book and vendor blood gas machine log. Data analysis was done using Microsoft Excel. Pre-intervention, blood gas test wastage was 57%. **Results:** Main contributing factors were improper sampling technique, improper sample storage, lack of standardised training on sampling and poor staff attitude in not evaluating sample quality and sharing of personal identification number among staff. Multiple strategies for change were implemented including training via continuous medical education, distribution of video on blood gas handling, staff adherence to a standard operating procedure and establishment of a standardised protocol for blood gas sampling. Refresher training, competency assessment, show cause letter, temporary freezing and auto-termination of accounts were also undertaken. The achievable benefit not achieved (ABNA) was narrowed down from 42% to 1% during the end of first cycle. There was slight increase at the end of second cycle to 10%. Subsequently, at the end of cycles three and four, blood gas test wastage fell to 0% which was ideal. **Conclusion:** Continued structured monitoring and evaluation including regular interval training and audits are essential to ensure high compliance among staff to maintain wastage of blood gas test at a minimal.