The Use of a Novel Data Analytics Model in an Automated Blood Transfusion Department to Evaluate the Performance of the Ortho Vision

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Abstract

Introduction: Analytical techniques can disclose trends and metrics hidden within data sets. The aim of this investigation is to determine if data analytics are beneficial to the blood transfusion department by using them to evaluate the performance of the Ortho Vision blood transfusion analysers in Cavan General Hospital (CGH). Parameters investigated include first pass yield (FPY) and turnaround time (TAT).

Methods: FPY and TAT data were extracted from Ortho Clinical Diagnostics web-based portal and imported into Microsoft® Excel® for analysis. Dates where the FPY was <96% were identified. The number of samples rejected and modified on these days were identified. The cause of sample rejection was determined. Results with a TAT greater than the monthly average were investigated.

Results: On examination of FPY data, 36 sample results were rejected. Cause of rejection was determined for 33 results. 34 samples were found to have a TAT longer than that of the average for the month in which it was tested.

Discussion and Conclusion: This study revealed that there is no benefit in using TAT or FPY as a standalone metric to measure analyser performance as both can be affected by several variables. Data analytics did provide several other benefits. Analysis of condition code reports revealed performance issues not displayed in FPY values. TAT analysis provided the laboratory with a method of allocating time resources and exposed a usage bias between the two analysers. It also proves useful in predicting the number of consumables required, leading to a reduction in waste by the department.

Sandra is a graduate of the Medical Science Class of 2020 at GMIT and is currently working as a Medical Scientist in the Microbiology Laboratory at Mayo University Hospital.