

QLL PITCH 27

Reducing Number of Laboratory Blood Sample Rejections in Outpatient Department (OPD) Of Hospital Bentong

Komate R¹, Nor Asiah M¹, Sahrudin A², Norfarizan A², Nor Farah Aliah I¹
 1 Unit of Pathology & Transfusion Medicine, Hospital Bentong, Pahang
 2 Outpatient Department, Hospital Bentong, Pahang



SELECTION OF OPPORTUNITIES FOR IMPROVEMENT

Laboratory specimen rejection was chosen as the area of concern as it raises the cost due to repeated use of consumables and causing delay in reporting patient results as well as delay in critical values notification by laboratory thus severely affecting patient care (Jindal N.M et al. 2022).

Non-quality samples will be rejected to ensure accurate results. High rejection may affect patient care and increase cost due to resampling. The five-year (2018 - 2022) verification study shows that, 10 952 out of 585 347 samples (1.87%) were rejected in the hospital accounting for wastage of RM 54 760.00.

Delay in Critical investigation may cause increase in rate of mortality if not addressed immediately.

KEY MEASURES FOR IMPROVEMENT

The contributing factors for laboratory sample rejection were analysed using a problem analysis chart as in Figure 1.

The main objective of this study was to reduce laboratory specimen rejection rate Outpatient Unit, Hospital Bentong. The specific objectives were to determine the impact of rejection on patient, actual cost (wastage), to identify contributing factors, to formulate strategies to overcome identified factors & to evaluate the effectiveness of remedial measures implemented in reducing laboratory sample rejection.

INDICATOR	FORMULA (INDICATOR / DENOMINATOR)	STANDARD
REJECTION RATE	$\frac{\text{NUMBER OF REJECTION}}{\text{TOTAL NO OF SPESIMEN}}$	1 %

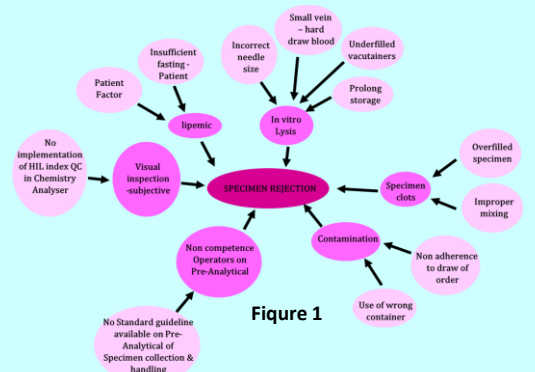


Figure 1

PROCESS OF GATHERING INFORMATION

A quality improvement study was conducted using convenience sampling in the Outpatient Department (OPD) in two consecutive cycles (Cycle 1: January 2023 – June 2023; Cycle 2: July 2023 – October 2023). Rejection data was extracted from the Laboratory Information System (LIS).

Inclusion Criteria : All patients who required laboratory diagnosis

Exclusion Criteria : Patients' physiological factors & medical condition which may contribute to sample rejection

THE NEXT STEP

The interventions have been expanded to all wards in Hospital Bentong. The Quick Guide has been circulated to all wards. The smaller version of quick guide was tied at the blood taking trolley.

We plan to share the implemented quick guide to other district hospitals in Pahang after the complete implementation in Hospital Bentong.

ANALYSIS AND INTERPRETATION

Pre remedial study of rejection rate in Outpatient Unit from September – December in 2022 more than 1% as in Table 1

Table 1

REJECTION CRITERIA	RATE F REJECTION (%)			
	SEP	OCT	NOV	DEC
Clotted	0.06	0.32	0.25	0.36
Insufficient Sample	0.06	0	0.19	0
Sample Lysed	0.9	0.98	0.89	0.78
Wrong Barcode	0	0.08	0	0
Wrong Container	0	0	0.06	0
TOTAL RATE OF REJECTION (%)	1.01	1.38	1.4	1.11
COST OF WASTAGE	RM842.60			

STRATEGIES FOR CHANGE

The remedial actions were implemented in two (2) phases. In first cycle of interventions, correct needle size, pre-warming the venipuncture site if vein not seen, no prolonged sample sent to lab and orientation for all new staff.

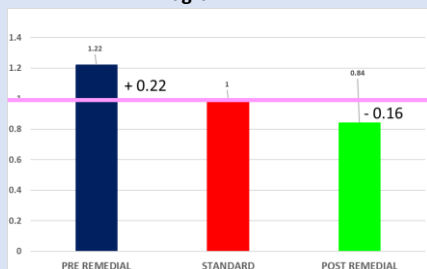
During the second cycle, For the first time in Hospital Bentong, a quick guide on pre-analytical blood-taking has been created to reduce sample rejection

EFFECT OF CHANGE

After interventions were applied, the rate was reduced from 1.30% to 0.86% in cycle 1 and further reduced to 0.82% in cycle 2. We successfully reduced the rejection rate in OPD. The wastage was reduced from RM 209.90 to RM 88.24 per month. Diagram 1 shows the Achievable Benefit Not Achieved (ABNA) for the QA study.

The rate of rejection has been reduced in Outpatient Department of Hospital Bentong. Impact of Rejection on Patient Care determined as causing delay in providing optimal treatment. Implemented remedial measures were effective in reducing of rate of rejection

Diagram 1



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