



REDUCING SAMPLE REJECTION RATES IN A HOSPITAL DIAGNOSTIC LABORATORY: IMPORTANCE OF FOCUSED TRAINING

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Objectives

- **ACTREC** (Advanced Centre for Treatment, Research & Education in Cancer) recently (2022-23 period) expanded from 130 to 322 beds along with new staff recruitment. This led to a significant expansion of services including diagnostic laboratories. Optimal patient therapeutic outcomes depend on the quality of the diagnostic lab results. The microbiology lab plays a key role in providing clinicians with the right diagnosis and anti-microbial choices for cancer patients with infections. Pre-analytical errors are an important quality indicator in specimen collection, handling, and transport in any diagnostic lab.
- Accreditation standards mandate that the lab must adhere to specimen acceptance and rejection protocols. Induction and specific training is normally given to the new staff at the time of their joining to ensure adherence to protocols. However, we wanted to investigate whether a focused training can further enhance adherence and reduce sample rejections.

Methods

- In this study, we compared the effect of focused training and communication to the target personnel (ward nurses) via sample rejection forms on sample rejection rates over two 3-month periods.
- Causes of sample rejection in the microbiology lab were documented for 3 months (01-06-2023 to 31-08-2023). While accepting samples in the lab, six criteria for rejecting a sample as per the lab quality manual were applied. During the first phase of the study period, 40 out of 4376 patient samples received were rejected (0.91% rejections).
- It was identified that all the samples rejected originated from the inpatient wards. As there are many new nursing staff, by random checks it was identified that a lack of awareness of the correct microbiology sample collection procedure was the primary reason for the deviations. It was decided to provide focused training to the ward nursing staff on sample collection protocols for Microbiology samples. Training sessions were conducted in September 2023 in the wards in batches to cover all the nurses. They were instructed on the proper sample collection, handling, transport, and storage methods to minimize sample rejections and hence pre-analytical errors.

Results

- Documentation of sample rejection forms and conveying the deviations to the respective clinical areas was meticulously being followed after the focused training. The 3 months post-training intervention documentation (01-10-2023 to 31-12-2023) showed 29 out of 4574 samples received were rejected (0.63%). The comparison of the sample rejected data during the pre- and post-intervention 3-month periods is given in the table below:

Sl. No.	Criteria applied for Sample rejection	No. of samples rejected (June – August 2023)	No. of samples rejected Post- Intervention (October – December 2023)
1	S	5	3
2	Poor quality of sample/Insufficient sample: (Salivary sputum, Faeces mixed with urine, Formed stool for C. diff, Sample not stored at the right temperature)	19	12
3	Sample sent in wrong container/Transport medium	0	1
4	Wrong request / Double request generated	12	6
5	Mismatched labelling	2	6
6	Haemolysed sample (Blood for serological testing)	2	1
	Total	40	29
	Total samples received during the period	4376	4574
	Percentage of rejection	0.91%	0.63%

Conclusion

- Even though the new staff goes through a full-length induction training, it is pertinent that focused targeted training requirements are identified through meticulous record keeping. In this case, focused training of sample collection staff helped reduce sample rejection by one-third by which the lab quality showed improvement.

Reference

Independent in-house study

Conflict of interest

None

Key words

Training, documentation,
improvement