Singapore Healthcare Management 2021

KK Women's and Children's Hospital
SingHealth

Let's Get it Right! :
Reducing Specimen Rejection Rates in a Neonatal Department

Gopagondanahalli KR[1], Kong JY[1], Garg N[1], Kaliappan R[1], Ali A[1], Wong CWF[2], Chang ASM[1].
[1] Department of Neonatology, KK Women's and Children's Hospital, Singapore.
[2] Department of Pathology and Laboratory Medicine, KK Women's and Children's Hospital, Singapore.

Background :
Integrity of biological specimens sent for analysis in the laboratory is important to ensure accountability, accuracy and timely management of clinical problems.
Specimens rejection can result in unnecessary repeat sampling, additional pain involved in repeat collection, delays in reporting and lack of timely intervention on abnormal results.
Breach in the first International Patient Safety Goal (IPSG) of Identifying Patients Correctly can also lead to suboptimal management and potential compromise in patients' outcomes.
From January to October 2019, 22 specimens rejected (mean specimen rejection rate of 0.32 per thousand orders) in KKH Department of Neonatology.

Objective :
To reduce specimen rejection by 30% over a 6-month period

Methods :
Quality improvement (QI) initiative by the multidisciplinary Patient Safety Leads.

Root cause analyses revealed the following:

a. human errors and fatigue,

b. knowledge gaps in sampling, labeling and dispatching specimens

c. label printers malfunction.

Multiple PDSA cycles were carried out to pilot, spread and implement the following interventions from November 2019:

a. pocket guide cards on the correct specimen containers to specific tests- Figure 2

b. reminder posters at dispatch sites on correct specimen labeling- Figure 3

c. standardized procedure carts for sampling,

d. education during orientation of new trainees, and

e. repair or replacement of defective label printers

Number of specimen rejection per thousand orders were tracked on a monthly basis to compare the pre- and post-intervention periods.

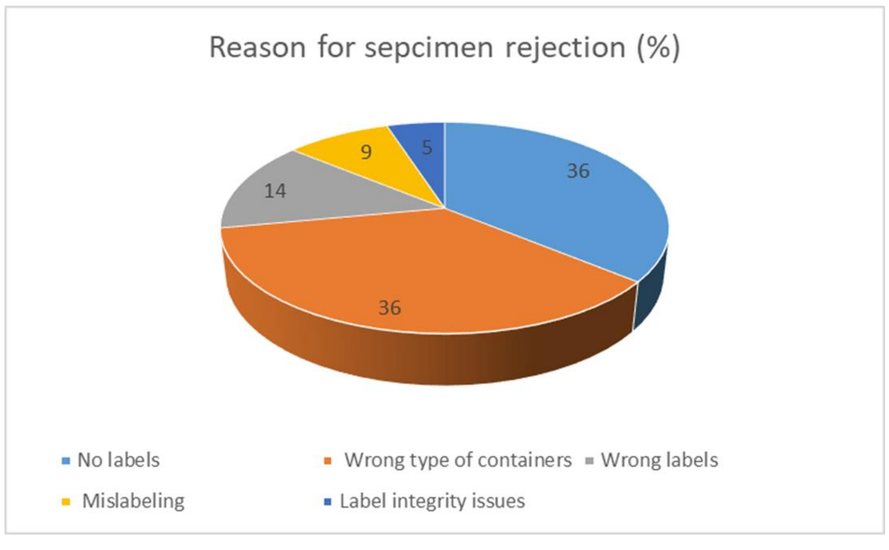

Figure 1- Reasons for specimens being rejected

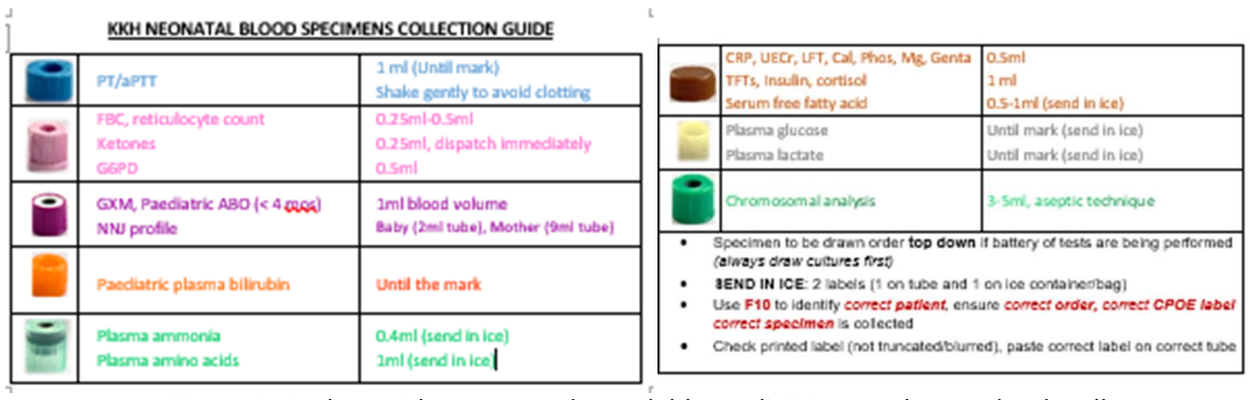

Figure 2- Pocket guide carts- made available to clinicians and procedural trolleys

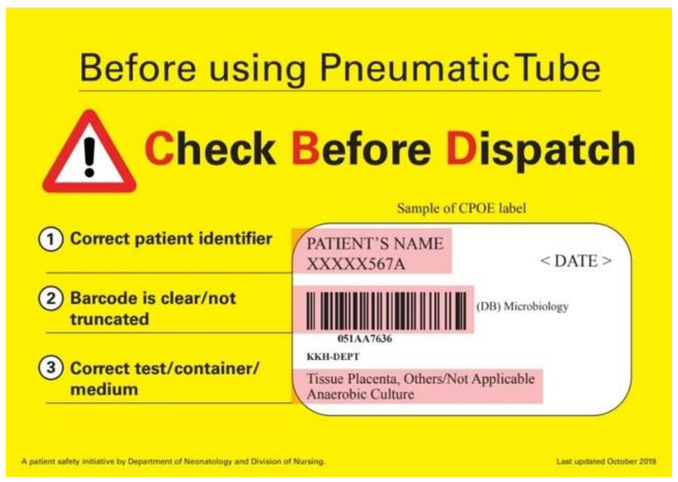

Figure 3- Visual reminders at specimen dispatch areas in the clinical area

Results:

The mean specimen rejection rate reduced from 0.32 per thousand orders (January to October 2019) to 0.20 per thousand orders (November 2019 to April 2020).
This was a 37.5% reduction in specimen reject rates.
The mean specimen rejection rate was further reduced to 0.16 per thousand orders from May to December 2020. This is evident that the efforts put in place was sustainable.

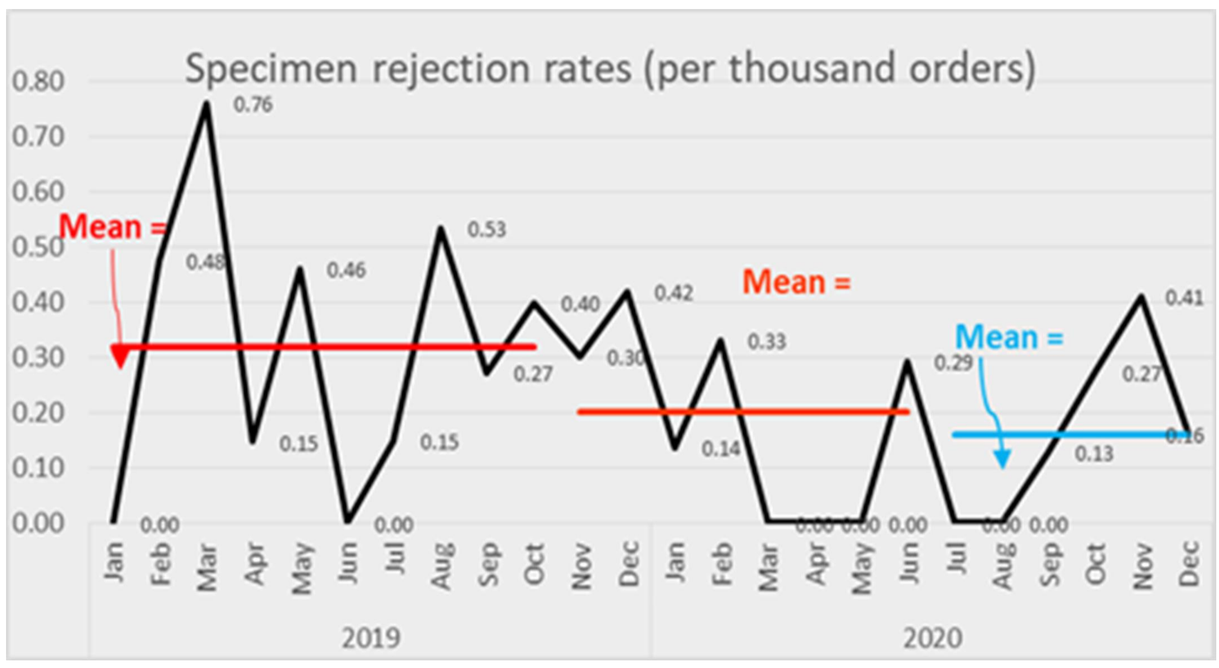

Figure 4- Monthly specimen rejection rates per thousand orders

Conclusions:

Collaborative effort from a multidisciplinary team of Patient Safety Leads is important to ensure success and sustainability of efforts on a long-term basis.
Engagement of staffs by understanding the challenges encountered contributed to selection and implementation of interventions that are well accepted and subsequently adopted.
Continued effort to track this improvement will be instituted to further target zero specimen rejection.