



REDUCING NUMBER AND PERCENTAGE OF HEMOLYZED SAMPLES IN HGH-ED

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BACKGROUND

- Hamad general hospital (HGH) – Emergency Department(ED) receives >1200 patients/ day. Collection of peripheral veins blood specimen is a daily practice in ED with an average of 8000 samples for chemistry per month analyzed in dedicated in-house ED lab. Hemolysis of blood sample can lead to inaccurate results, repeat draws causes added pain, delayed treatment decision, increased length of stay, waste of resources, and Patient/Staff dissatisfaction.
- The average of chemistry blood sample hemolysis rate for ED in the last 2 years was 3.7% - 4%.

AIM

- To reduce the percentage of hemolysed sample in ED HGH in order to meet the international benchmark according to the AMERICAN SOCIETY OF CLINICAL PATHOLOGY¹ which is less than 2% within 12 months and to sustain the improvement.

OBJECTIVES

- Monitor existing blood sample collection practices in ED
- Identify factors that lead to the hemolysis.
- Evaluate the blood sample collection process in ED
- Optimize current process and apply improvements based on Root Cause Analysis
- Improve awareness, knowledge & skill among the staff by introducing the best practices in canulation and blood sample collection process

METHODOLOGY

Methodology Followed to Gather and Validate the Data

- Direct observation by independent professional partner (BD) for the technique of blood collection in ED.
- The observation covered all ED areas where blood is collected
- Samples were followed to the lab
- The BD staff were trained to use the same observation monitoring tool
- The motoring tool reliability and validity checked by the BD company

The observation was conducted by BD group (partner) in two phases:

STAGE1 22-26th September, 2013 audited 112 patients by the partners through direct observation of the blood sampling techniques and findings documented in observation tool form.

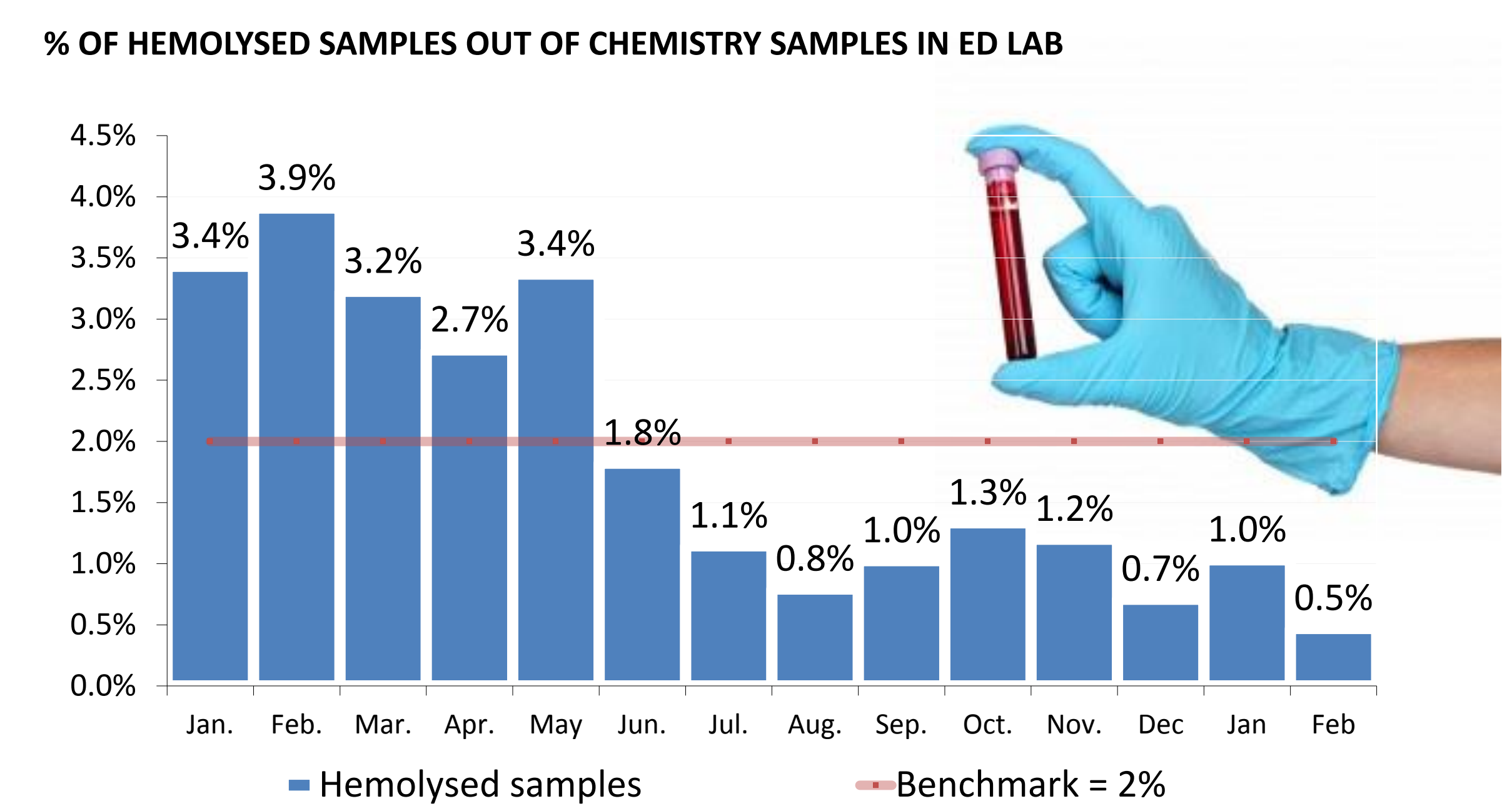
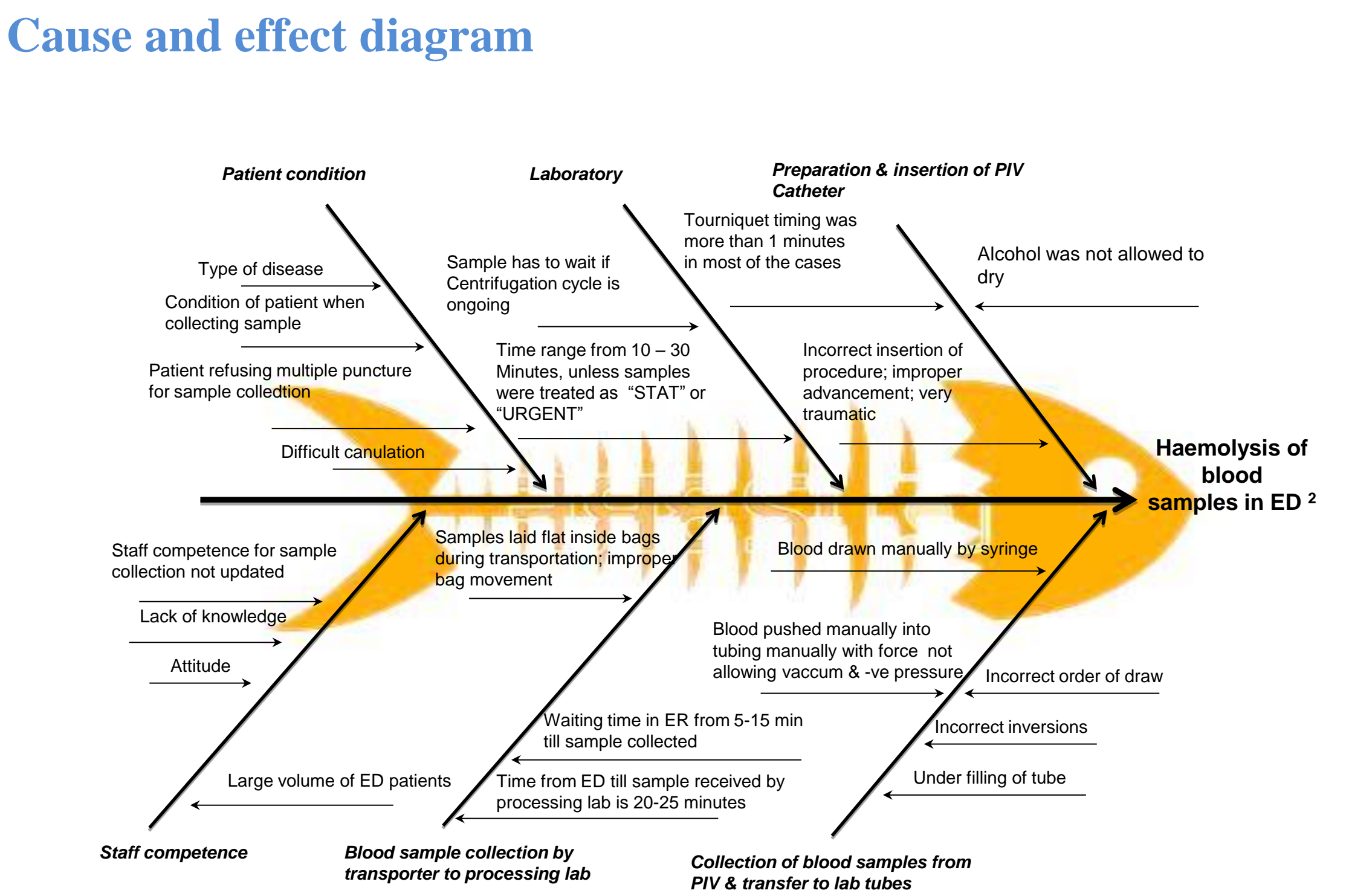
STAGE2 Observed quality of the sample, followed samples inside the lab

RESULTS

From the 112 samples observed, 5 of them were hemolyzed (4%) which matches the percentage of ED total hemolysed results.

Causes identified mostly related to inappropriate specimen collection methods :

- Alcohol not left to dry before sampling.
- In correct insertion procedure; improper advancement
- Excessive fishing in some cases
- Blood drawn via syringe directly or through the iv catheter
- Tubes under filled
- Tourniquet kept at least 3 min or more
- In correct order of draw
- Inversion were not correctly done
- Tubes laid flat and shake during transfer to the lab



CHANGES AND ACTIONS TAKEN

STAGE ONE

- Trained staff on phlebotomy technique (April 2013)
- Increased stock items to match ED Demand

STAGE TWO

- Developed monitor tool to evaluate the results of training
- Conducted super training for new staff & to check compliance

STAGE THREE

Increased the number of nursing aide to reduce the transfer time

CONCLUSION

The above actions were implemented , the percentage of hemolysed samples are coming down.

Even though we achieved the international benchmark and managed to sustain the improvement, but there is still some hemolysed samples reported, because of the possible invivo (patient related) hemolysation.

RECOMMENDATION

To sustain the improvement we recommend to dedicate more superusers to monitor the old and new staff.

REFERENCES

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