

ABSTRACT:

- In November 2015, trend analysis in the Blood Transfusion Laboratory at CUH identified little reduction in the number of Non-Conformances (NCs) occurring in the laboratory over an 8-year period since 2008 despite corrective actions taken.
- Anecdotal evidence suggested that “Human Error” was persistently a significant contributory factor.
- This prompted the laboratory to analyse human errors and NCs in a different way to try to be more effective in reducing NCs.

AIM OF STUDY:

- Given that “continual improvement” is a key element of an ISO15189 quality management system¹, the objective was to reduce NCs occurring in the laboratory by analysing human error.

METHODS:

- Between 2016 and 2018, the laboratory identified and classified human error in NCs using a standardised approach² as part of Root Cause Analysis (RCA).
- Using Process Flow diagrams, each NC was marked at the point where the error occurred.
- The findings were repeatedly presented and discussed at staff meetings, journal clubs, and Management Reviews to raise awareness of human error and the points in processes where these errors were recurring. Where relevant, additional corrective and preventive actions were agreed and implemented.

SUMMARY OF RESULTS:

- Detailed analysis of NCs between 2016 and 2018 identified that human error (mainly lapses in concentration and/or omissions in procedural steps) was a factor in approximately 80% of NCs.
- Visual analysis of errors in processes helped more clearly identify points where NCs were recurring and should be targeted.
- Prior to utilising this way of analysing NCs, between 2008 and 2015, an average of 75 NCs occurred in the laboratory annually.
- Since using this technique, between 2016 and 2018, an average of 42 NCs occurred each year - representing a 43% reduction compared with previous years.

DISCUSSION AND CONCLUSIONS

- Human error is very difficult to eradicate where processes cannot be modified such that they are eliminated or substituted, or where engineering solutions cannot be provided.
- Repetitive use of this simple visual tool proved very powerful in reducing laboratory NCs by raising scientists’ awareness of the human errors in processes and to help change their behavior.
- This form of analysis also helped identify and prioritise points in processes where further action was considered necessary and which could add greatest value in reducing NCs.

REFERENCES:

- 1 Medical laboratories - Requirements for quality and competence (ISO 15189:2012).
- 2 PHB Bolton-Maggs (Ed), D Poles, A Watt and D Thomas on behalf of the Serious Hazards of Transfusion (SHOT) Steering Group. The 2013 Annual SHOT Report (2014).

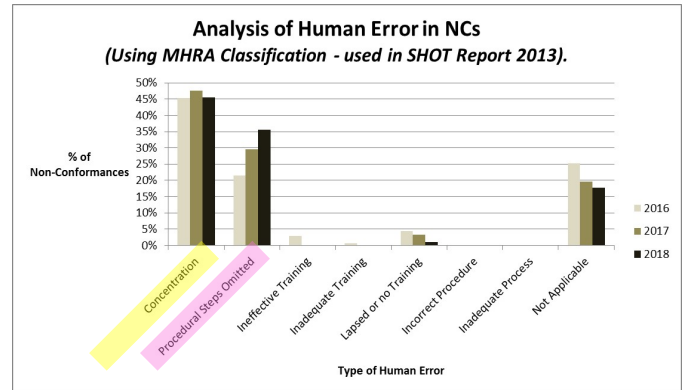


Figure 1: Standardised analysis of Human Errors.

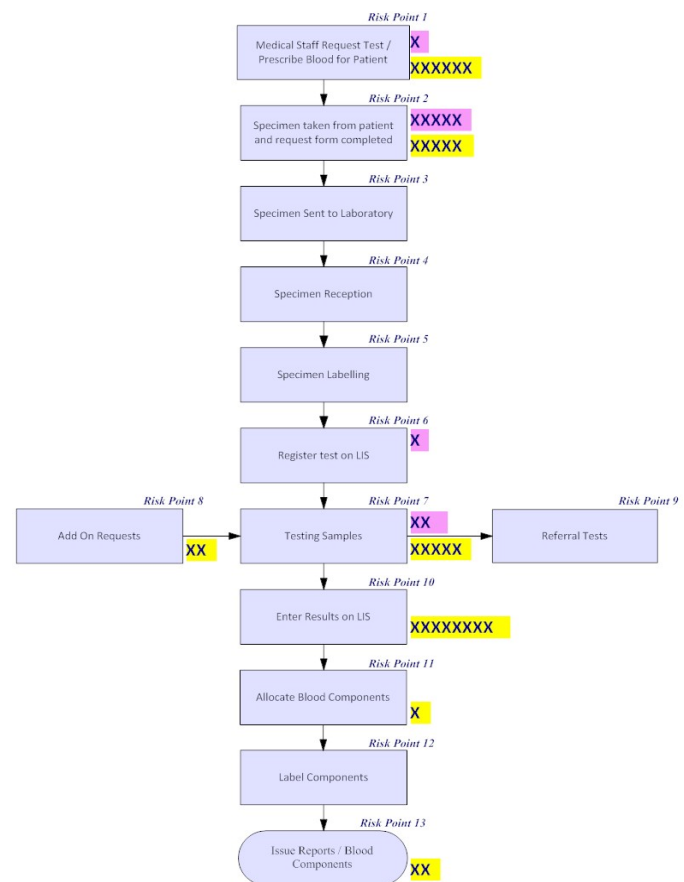


Figure 2: Marking points on a Process Flow Chart where Human Errors took place in 2016.

X = Concentration Error
X = Procedural Step Omitted

Overall Trend of NCs Occurring in the Laboratory Between Years

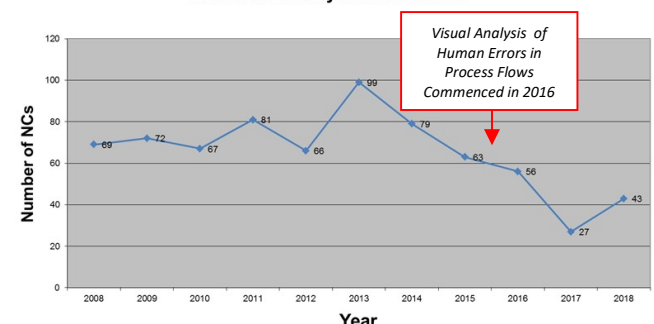


Figure 3: Evidence of effectiveness of visual analysis in reducing NCs (caused by Human Error).