

Graduate Students, Medical, Biomedical and Health Sciences

Reducing the incidence of exposure to blood and body fluids

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Background

- Blood and body fluids exposure (BBFE) is a major occupational risk for healthcare workers (HCW) and is associated with increased cost
 - BBFE exposure (percutaneous or mucocutaneous) increases the risk of blood-borne viruses
- Nurses are at more risk for BBFE
- About 50% of BBFE incidents are under reported
- At Alkhor Hospital (AKH), we have noted a significant increase in the number of BBFE incidents (6 cases and 15 cases in 2017 and 2018, respectively)
- The Hemodialysis unit at AKH was chosen to be the starting setting for our QI project
 - Needle-stick injury (NSI) is a common occurrence in dialysis units
 - 80% of dialysis patients would require needle handling before & after dialysis
 - Blood splash exposure is significantly higher than other clinical areas

Aim and objectives

- To increase median days between incidents of BBFE in AKH from 13 days to 50 days by the end of March 2019 and to 100 days by the end of December 2019
- Identify any gaps in HCW knowledge, practice, and attitudes about risk of BBFE
- Enhance knowledge and safe practice for BBFE prevention based on any identified gaps
- Improve BBFE reporting culture
- Pay consideration to staff satisfaction

Study measures

- Outcome Measure**
- Number of Days between Incidents
- Process Measure**
- The BBFE risk awareness score
 - The attitude & practice score
 - Percentage of compliance to BBFE safe practice
- Balance Measures**
- Reporting exposure score
 - Percentage of staff satisfaction

Methods

- The dialysis unit's baseline process map and cause and effect diagram were studied
- PDSA cycles were established and implemented for data collection and intervention tools
- Pareto chart was used to study the priority areas with most prevalent cases of BBFE
 - This showed that the incident of BBFE in three units (Emergency, Operating theater and Dialysis unit) accounted for 60% of all BBFE incidents at AKH (Fig 1)
- We collected anonymized data about BBFE incidents, which were submitted infection control department
- This showed that 80% of all incidents were related to NSIs and that 47% of all incidents occurred among staff nurses (Fig 2)

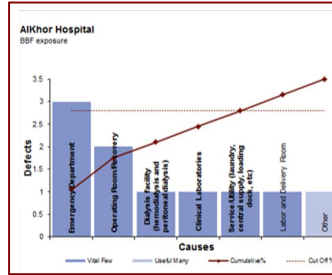


Fig 1: Pareto Analysis

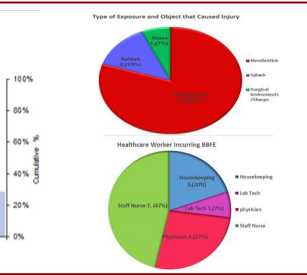


Fig 2: BBFE incidence at AKH

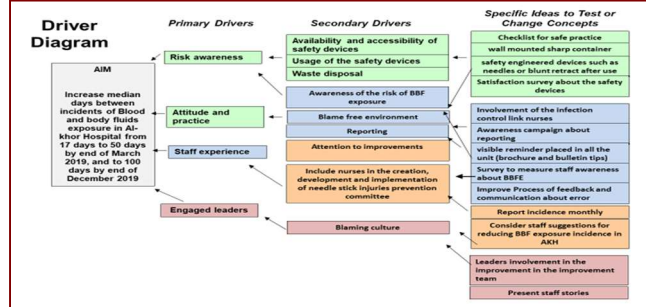


Fig 3: Driver diagram

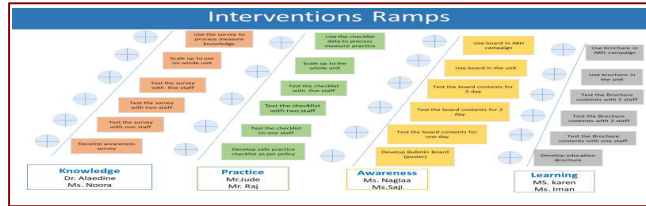


Fig 4: Intervention ramps

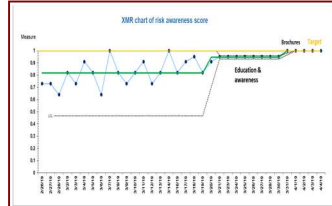


Fig 5: Risk awareness score

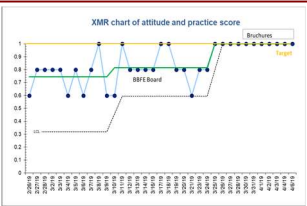


Fig 6: Attitude & practice score

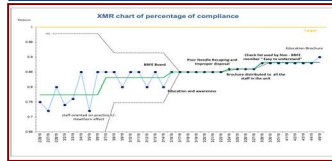


Fig 7: Compliance to BBFE safe practice

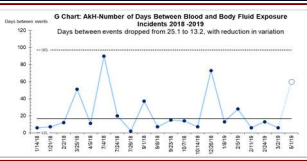


Fig 8: No. of days between incidents

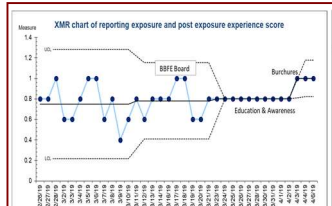


Fig 9: Reporting exposure score

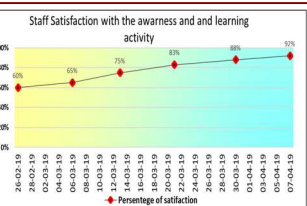


Fig 10: Staff satisfaction

Methods

- A driver diagram of primary and secondary drivers for the project (Fig 3)
- On bases of learning and testing, interventions ramps with multiple PDSA cycles were designed around the following four main domains (Fig 4)
- Knowledge
 - To test the knowledge of HCWs BBFE using a survey
- Safe practice
 - Assessing HCWs' compliance with the recommended safe practice & use a safe practice check list to assess changes in safe practice
- Awareness
 - Address gaps in HCWs' knowledge & practice about risk of BBFE using a bulletin board learning :
 - Circulate brochures to remind HCWs' about the risk of BBFE and safe practice

Results

- Risk awareness score of BBFE among HCWs increased from 82% to 100% (Fig 5)
- The attitude about reporting BBFE and safe practice score increased from 75% to 100% (Fig 6)
- Compliance with safe practice improved from 77% to 86% (Fig 7)
- Days between BBFE events dropped from 25.1 to 13.2 (Fig 8). However, this can be explained by improvements in the knowledge about risk of BBFE & reporting awareness by the staff. Therefore, we expect to observe increase in the median number of days between BBFE events in the future
- Reporting BBFE increased from 75% to 100% (Fig 9)
- Staff satisfaction with the educational tools improved from 65% to 96% (Fig 10)

Conclusions

- There was a gap in HCWs' safe practice regarding BBFE before we start the QI project
- Awareness board, circulating brochures, and awareness sessions were associated with improvements in HCWs' knowledge, compliance with safe practice & attitudes about reporting BBFE
- We observed reduction in the median number of days between BBFE event, which is explained by increase in reporting of BBFE due to our interventions. This initial increase in reporting is expected & has been seen in previous studies. However, we expect reverse in the future

Sustainability plan & next steps

- Spot check for knowledge & practice
- Annual awareness sessions for HCWs
- Maintain the bulletin board & circulating the brochures as a reminder
- Spread the project to Medical and Surgical wards & further scale up plan will be drawn
- Plan for work environment changes such as introducing safe practice equipment to reduce BBFE risk and incidence