The aim of this study was to assess the use of Lean Six Sigma methodology to improve the turnaround time (TAT) for inpatient peripherally inserted central catheter (PICC) placement" Hynes et al (2019).

Abstract:

AIM: The aim of this study was to assess the use of Lean Six Sigma methodology to improve the turnaround time (TAT) for inpatient peripherally inserted central catheter (PICC) placement.

MATERIALS AND METHODS: Value stream mapping was used to analyse the workflow process for inpatient PICC placement and to divide it into its component parts. Unnecessary steps were eliminated and variation minimised in the remaining processes. The TAT for PICC line placement was recorded for the 6 months prior to implementation of changes, and subsequently, at the 6-month and 2-year follow-up points.

RESULTS: Prior to implementing the changes, the mean TAT for PICC line placement was 3.74±3.28 days (95% confidence interval =3.3-4.17). Six months after implementation, the mean TAT was 1.89±1.82 days (95% CI=1.72-2.06, p<0.0001). The reduction was sustained such that at 2 years post-implementation the mean TAT was 1.88±1.87 days (95% CI=1.78-1.99, p<0.0001). This was achieved despite a 13.8% increase in overall interventional radiological activity. CONCLUSION: By applying Lean Six Sigma methodology to the complex multifactorial processes involved from ordering a PICC to its final insertion, it was possible to identify areas for improvement and to introduce simple, effective measures that resulted in a significant sustained decrease in the TAT without additional resources.

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Reference:

Hynes, J.P., Murray, A.S., Murray, O.M., Eustace, S.K., Gilchrist, S., Dolan, A. and Lawler,

L.P. (2019) Use of Lean Six Sigma methodology shows reduction of inpatient waiting time for peripherally inserted central catheter placement. Clinical Radiology. May 23rd. doi: 10.1016/j.crad.2019.04.022. .