TITLE: DIFFUSION OF INNOVATION: COMPLIANCE WITH ERP IMPROVES OVER TIME

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Introduction: Enhanced Recovery Protocols (ERP) decrease length of stay (LOS). Diffusion of Innovations theory predicts that surgeon adoption of ERP interventions varies over initial implementation. We hypothesize that compliance with an ERP would improve as surgeons in a large academic colorectal surgery practice adopt ERP and that LOS correlates with the degree of compliance.

Methods: This is a retrospective review of prospectively collected compliance and length of stay data for patients undergoing elective colorectal procedures (DRGs 329-334) following implementation of ERP in July, 2016. Compliance to 22 ERP metrics was used to determine average percent compliance for the service as a whole and for individual surgeons. Data was collected from the baseline period of August to December, 2015 and the intervention period of August, 2016 to December, 2017.

Results: Surgeon specific compliance data was available for 10 surgeons over 884 cases. Overall compliance with the ERP improved from a baseline of 42% to 79% by the end of the intervention period ($p<0.0001$). Average LOS decreased from a baseline of 5.9 days to 4.4 days ($p<0.0001$). There is a linear correlation between average compliance and LOS ($R^2=0.9613$) (Figure 1). The rate of surgeon adoption varied, as individual compliance rates became more skewed over the intervention period (Figure 2).

Figure 1:

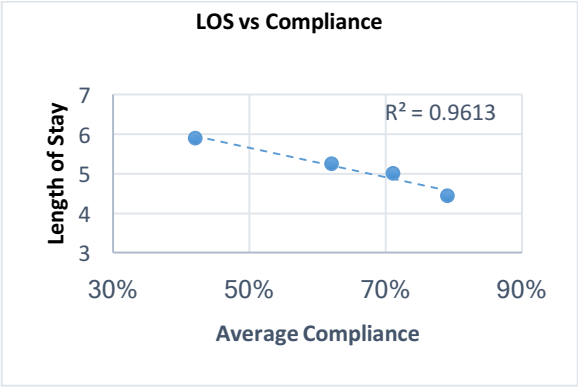
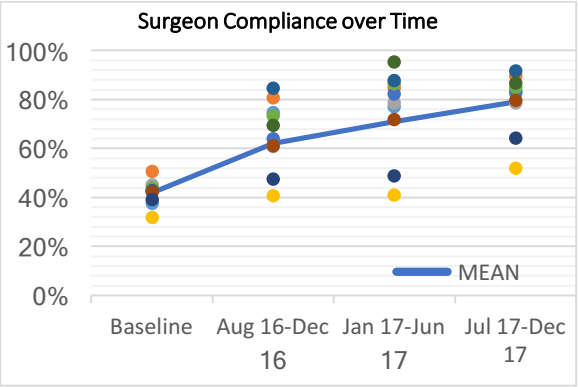


Figure 2:



Conclusion: There is a strong correlation between ERP compliance and LOS. In the early implementation period, the rate of surgeon adoption varied as predicted by the Diffusion of Innovations theory, suggesting that early adopters achieve the greatest benefit in overall LOS reduction.

References:

Sanson-Fisher, R. W. (2004). Diffusion of innovation theory for clinical change. *Medical Journal of Australia*, S55-S56.

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shown by an increase in the range of