



EVALUATING IMPACT OF SURGEON SELF-EVALUATION AND POSITIVE DEVIANCE ON POST-OPERATIVE ADVERSE EVENTS FOLLOWING MAJOR THORACIC SURGERY



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BACKGROUND

- Atrial fibrillation (incidence= 4-37%)¹, prolonged air leak (8-26%)¹, and anastomotic leak (10-25%)³ represent common and impactful post-operative adverse events (AEs) following thoracic surgery.
- Previous qualitative work showed that performance audits (enabling peer comparison to group averages) motivate surgeons to improve their practice, and continuous quality improvement (CQI) seminars based on positive deviance (PD) allow identification of best performers and collegial discussions of best practices.
- Ultimately, a culture of change is established among the surgeons
- However, the impact of these combined audit and feedback interventions on post-operative AEs have not yet been studied.

OBJECTIVE

- To evaluate the impact of surgeon self-evaluation and CQI/PD seminars on post-operative AEs rates following major non-cardiac thoracic surgery.

METHODS

- This is a **retrospective uncontrolled before and after** study based on prospectively collected AE data using the Thoracic Morbidity and Mortality classification system (www.ottawatmm.org).
- Surgeon self-evaluation (performance audit) was available at anytime using an interactive software system, available for thoracic surgeons (n=6) for all major lung and foregut procedures (n=1084) from 04/2013-01/2016.
- CQI/PD seminars (n=8) were held quarterly, from 09/2013-12/2015. During CQI/PD seminars, specific procedures and AEs were selected, and positive deviants and best practice strategies were identified and discussed.
- We have analyzed the impact of these interventions by using univariate analyses and comparing varying time windows (6, 9 and 12 months) before and after implementation.

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RESULTS

- Atrial fibrillation rates showed non-significant decrease, with the greatest decrease during the 6 month period (10.1% to 6.7%; p=0.36).
- Rates of prolonged air leak showed significant decrease at 12 months (18.9% to 11.7%; p<0.05).
- Rates of anastomotic leak showed non-significant decrease in the 6 month period (11.1% to 8.3%; p=0.82) and 9 month periods.

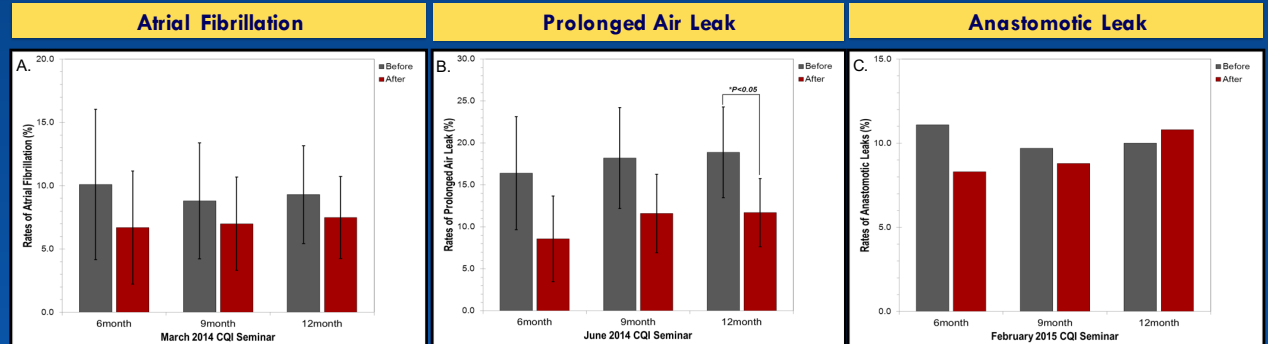


Figure 1A-C. Rates of atrial fibrillation, prolonged air leak and anastomotic leak 6, 9 and 12 months before and after CQI/PD seminars

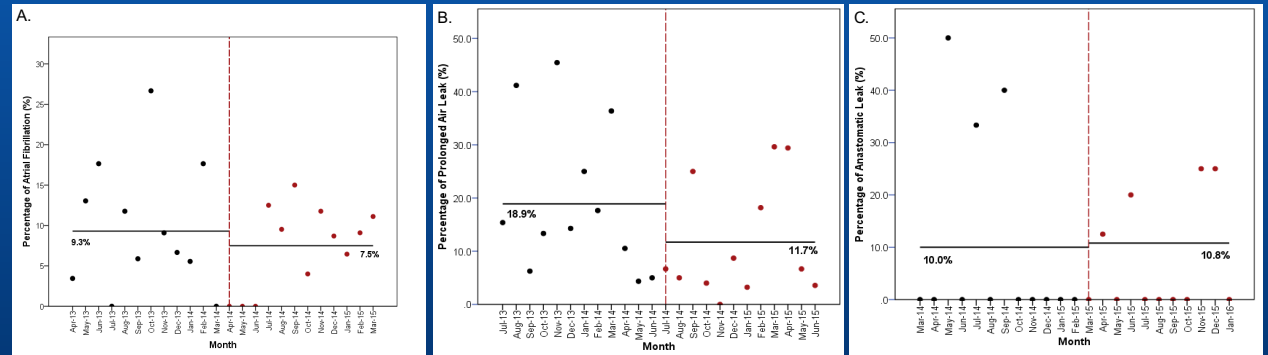


Figure 2A-C. 12 month pattern of rates of atrial fibrillation, prolonged air leak and anastomotic leak pre and post CQI/PD seminars

DISCUSSION

- Results did not show a significant decrease in rates of complication before and after the implementation of the CQI/PD seminars, other than in the case for prolonged air leak at 12 month period.
- Limitations of the study design include: lack of a control group and adjustment for secular trends, such as learned practices over time.
- The study was also underpowered due to the low number of procedures and AEs, specially for major foregut procedure and anastomotic leak
- Future studies should consider possibilities of a multi-center implementation and analysis of the CQI/PD seminars.
- Additionally, components of successful audit and feedback includes providing surgeon with specific goals and action plans. Future improvement should aim to develop and disseminate documented pathways and guidelines based on the recommendations from the CQI/PD seminars for all surgeons and residents.³
- However, the CQI/PD seminars and surgeon self-reports have had the beneficial effect of creating a culture of quality improvement among the surgeons and a positive attitude toward improving rates of AEs.⁴