

### Background

- Major surgery, anesthesia, and pain can hinder lung expansion causing postoperative pulmonary complications (PPCs), for example, atelectasis.
- Depending on the surgical procedure, 17% to 88% of postoperative patients will have decreased lung volumes. Incentive Spirometry (IS) therapy is widely prescribed to improve pulmonary function among postoperative patients (Akashdeep & Vasantha, 2020). Performing deep breathing exercises is also recommended to prevent PPCs (Eltorai, Szabo, Antoci et al, 2018)
- Nursing and patient compliance with prescribed orders related to the use of IS can prevent PPCs and poor patient outcomes. Staff noted that incentive spirometry therapy ordered for postoperative patients was inconsistently offered and/or documented accurately as per orders.
- This study aims to improve evidence of nursing compliance and adherence to IS prescribed therapy. Clinical documentation was reviewed to assess degree of compliance related to the practice of IS prescribed therapy.

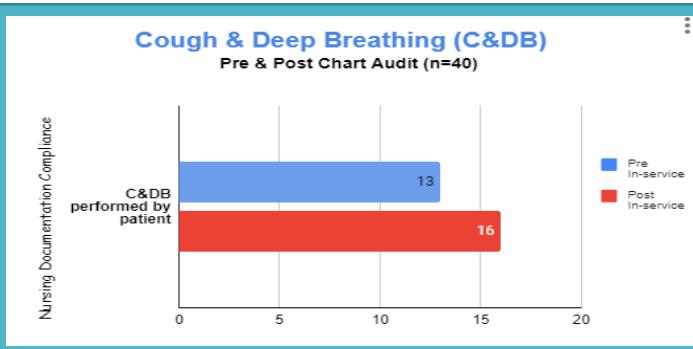
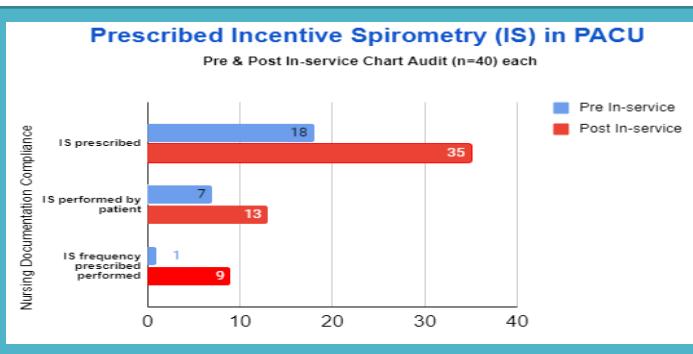
- P - Postoperative patients with prescribed IS therapy
- I - Staff Education on the benefits of IS in reducing PPCs, and the value of documentation to reflect nursing practice
- C - No intervention
- O - Improve compliance and adherence with prescribed IS therapy

### Methods

- A quality improvement project conducted from May to August 2021.
- Random charts audit to ascertain nursing compliance with prescribed IS therapy prior to and post staff in-services. Pre and post charts audit each yielded (n=40) postoperative patients.
- Conducted staff education in-services on the benefits of IS therapy in preventing PPCs, and the importance of documentation to reflect nursing practice.

### Key Findings

- Findings revealed significant improvement in nursing adherence to prescribed IS frequency post intervention, which in turn, results in increased therapy effectiveness.
- Noteworthy improvement in nursing adherence to institutional best practice recommendations related to Cough & Deep Breathing (C&DB) exercises.
- Charts audit also revealed incomplete prescribed IS therapy orders, lacking standardization in the prescribed inspiration frequency parameters.
- Findings also revealed that continuous monitoring of nursing practice and documentation related to IS are needed to ensure compliance.



### Results

Pre and Post in-service chart audits each yielded (n=40) patients.

- Pre in-service chart audit showed that 45% (n=18) patients were prescribed IS therapy, 39% (n=7) performed IS, with 14% (n=1) patient adhering to IS frequency prescribed. Separately, 32% (n=13) out of the 40 patients were instructed to perform C&DB exercises
- Post in-service, 88% (n=35) patients were prescribed IS therapy, 37% (n=13) performed IS, with 69% (n=9) patients adhering to IS frequency prescribed. C&DB exercises were performed by 40% (n=16) out of 40 patients

### Discussion

- Nurses are expected to render prescribed IS treatment to patients and accurately document to improve postoperative outcomes.
- While working on improving compliance with IS prescribed therapy, we noted that C & DB exercises were being increasingly encouraged to improve pulmonary function in postoperative patients. The latter practice is consistent with various studies concluding that C&DB exercises were equally effective as IS therapy to improve pulmonary function.

### Limitations

- Data collection methods.
- Factors affecting nursing compliance with prescribed respiratory therapy should be explored.
- Lack of standardization with IS therapy orders and IS prescribed frequency.

### References

- Akashdeep, C., Vasantha, K. (2020). Effect of Incentive Spirometry on Recovery of Post-Operative Patients: Pre Experimental Study. *Journal of Nursing Practice* 3(2), 220-225
- Eltorai, A., Szabo A, Antoci V, et al (2018). Clinical Effectiveness of Incentive Spirometry for the Prevention of Postoperative Complications. 347-352