

Lowering COPD Exacerbation Rates through Patient Education and Screening

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Purpose

Objective: The aims of this evidence-based quality improvement (QI) project is to investigate the utility of student-led, educational interventions, informed by a baseline score on the Lung Information Needs Questionnaire (LINQ), for improving patient understanding of their disease process, as indicated by a 10% or greater increase in their LINQ score on a repeated assessment.

Background

- In 2017, chronic lower respiratory disease (CLRD), a group of pulmonary diseases that includes COPD, asthma, bronchitis, and emphysema, was the third leading cause of death in the United States.
- Exacerbations of COPD contribute significantly to patient morbidity and mortality, and adversely affect specific quality of life measures of patients and their families, while hospitalizations for these exacerbations greatly increase patients' risk of mortality, while worsening their prognoses
- Rehospitalizations for exacerbations of COPD result in high resource use and enormous costs to the healthcare system, which suboptimal transitions of care endanger patients' lives.
- In fiscal year 2015, CMS began reducing payment by 3% to hospitals whose readmission ratios for COPD were determined to be excessive.
- There is a need for an evidence-based educational intervention that effectively educates patients with COPD about their disease and its management, to reduce exacerbations and avoidable hospitalizations.
- Contemporary challenges to COPD exacerbation prevention include six elements:
 - Discharge of patients with inadequately resolved COPD exacerbations
 - Fragmentation of patient management across the continuum of care
 - Shortcomings in the education and training provided to patients at discharge
 - Insufficient or absent follow-up after discharge
 - Patients receiving suboptimal equipment from homecare suppliers
 - A lack of timely action plans empowering patients in the early detection and management of COPD exacerbations
- Shortcomings in the contemporary approach to patient education demonstrates the need for quality improvement.

Methods

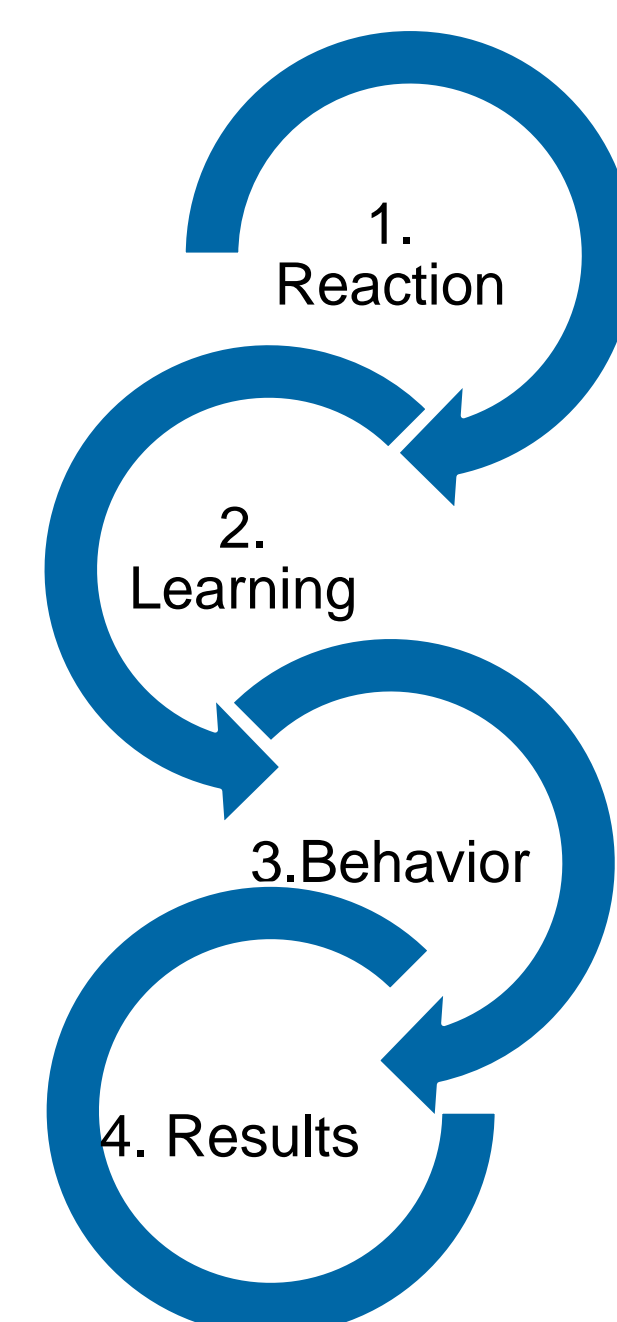
Design:

- This QI project was developed using a quasi-experimental pre-test post-test design aimed at identifying shortcomings in patient understanding of COPD and its management.
- Integration and implementation of educational interventions addressing these shortcomings.
- A verbal influenza vaccination screening tool was included at the end of the LINQ to gauge patient vaccination status and patient understanding of the importance of vaccination.
- Assessing current patient learning and comprehension of disease-related educational interventions provided the opportunity to address shortcomings and to improve educational interventions.

Sample: Convenience sampling of 16 patients of the FLASS clinic, who have been diagnosed with COPD, between the ages of 21 and 105, without pulmonary hypertension, congestive heart failure, or alpha-1 antitrypsin deficiency.

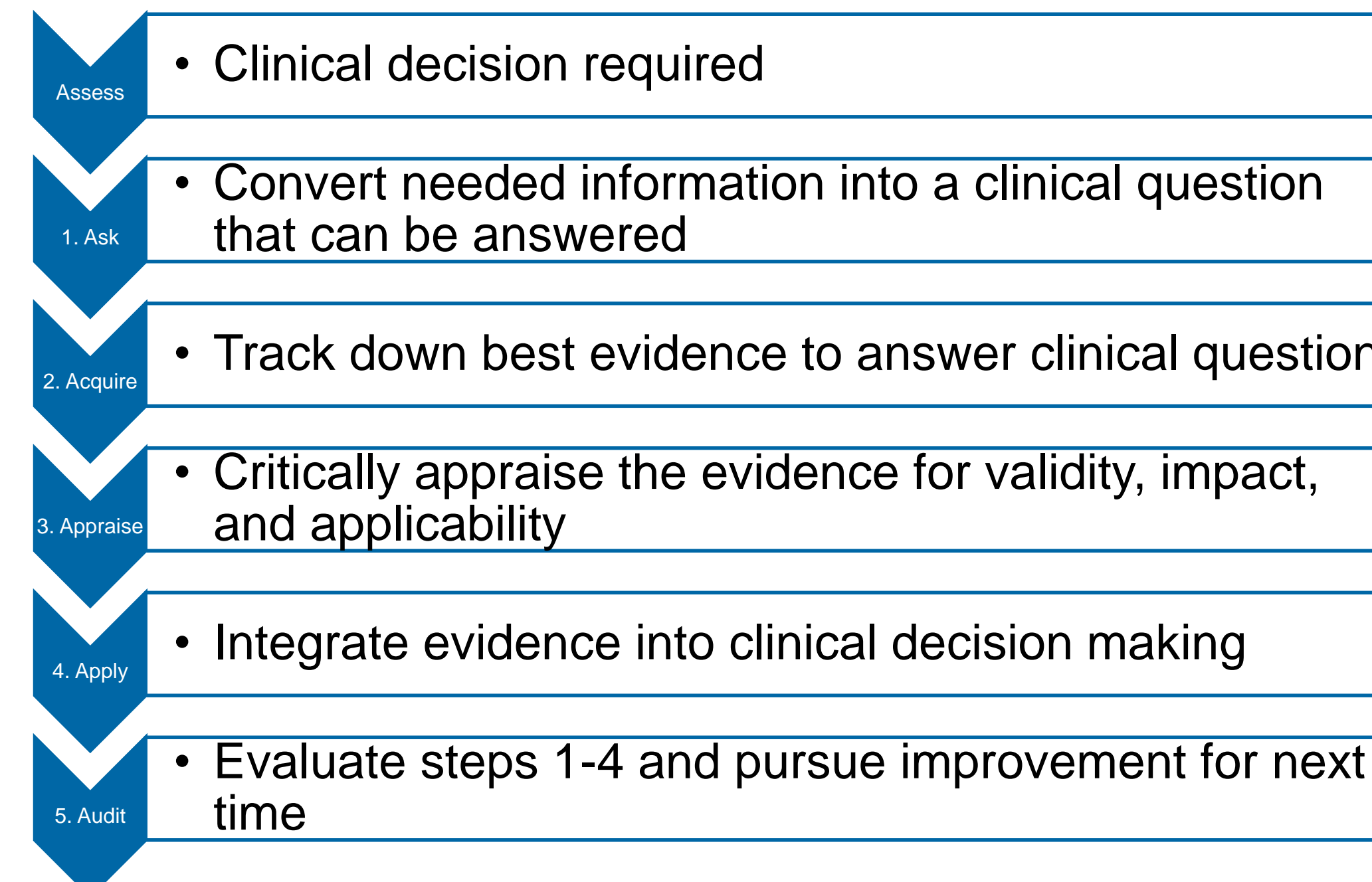
Setting: The location of the implementation of the LINQ and influenza screening tools, which will be integrated into the existing workflow of the clinic, was the Florida Lung, Asthma & Sleep Specialists (FLASS) clinic in Orange County, Florida, whose mission involves providing holistic, ethical, equitable care to every patient.

The Kirkpatrick model was used to direct this QI project:



Instruments

Theoretical Framework: The Johns Hopkins Evidence-Based Model was used to identify the problem and its significance and to appraise the level and quality of references.

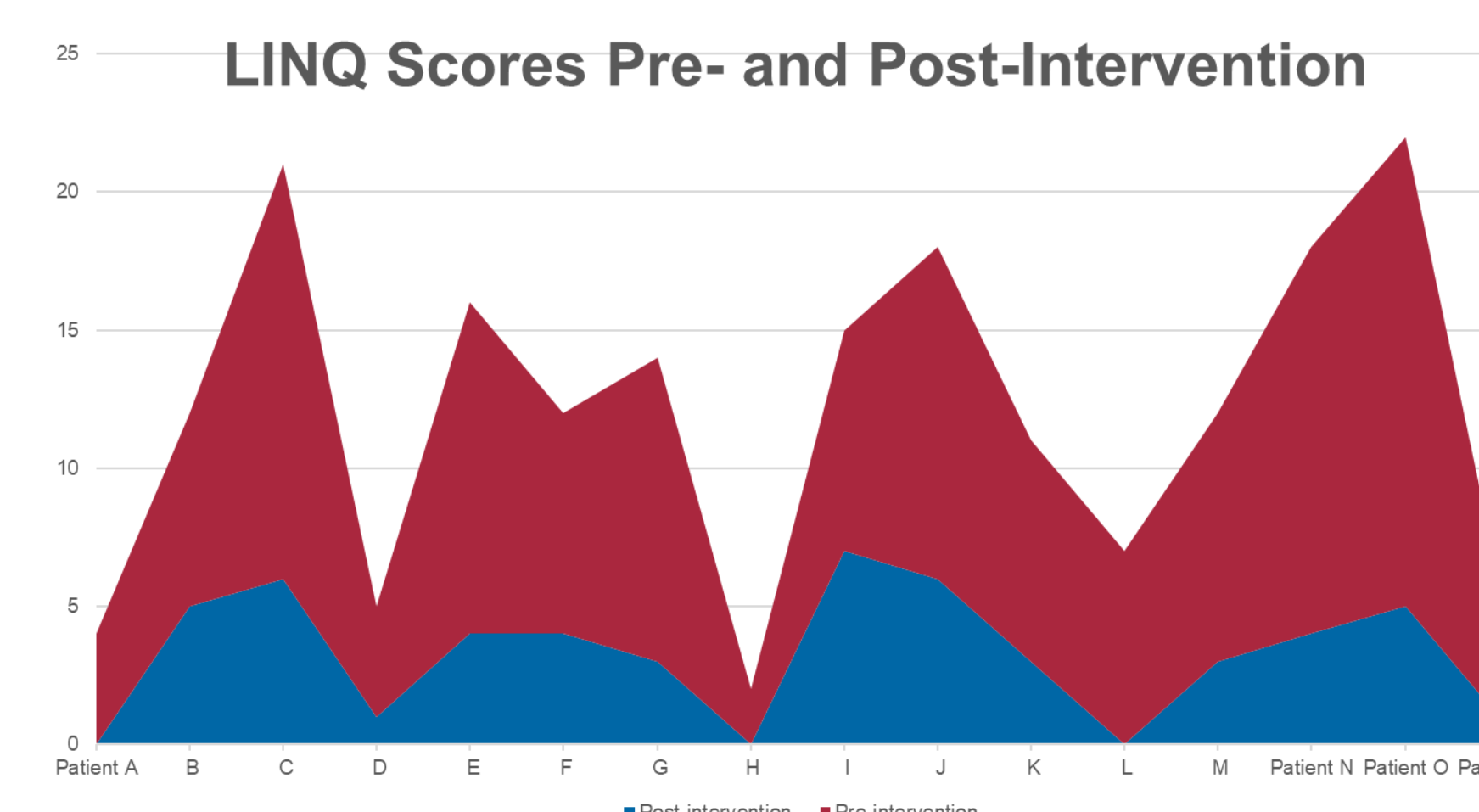


Lung Information Needs Questionnaire (LINQ)

Question Numbers	Domain	Scores Range
1-4	Knowledge of COPD	0-4
5-7	COPD Medicines	0-5
8-9	COPD Self-management	0-6
13-15	Exercise	0-5
16	Diet	0-2

Results

- Significant improvement in LINQ scores post-intervention for patients who received the intervention.
- Patient scores improved the most in the areas of self-management and exercise; however, these were the domains in which participants received the most points.
- Eleven patients were current with their influenza vaccinations, while 5 required further education.



Discussion

Implications for Practice: An opportunity for improvement was identified at the FLASS clinic pertaining to patient education and learning. Implementation of a QI project involving patient education and screening demonstrated that patients' understanding of their disease and its management improved significantly.

Limitations: A small sample size (N=16) participants decreased the power and generalizability of the study. Limitations were recognized and attempts were made to increase the number of participants. The quality of the study, and the use of the Kirkpatrick model helped to address this challenge.

Project Feasibility: Implementation of quality improvement projects have intrinsic costs as they can extend patient time in the clinic and may negatively impact patient experiences. However, the intrinsic value of validated QI projects cannot be denied.

Recommendations: Continue surveillance on patient understanding of provided education, incorporate evidence-based teaching tools into practice, and screen patients for vaccination status. Future studies should enroll a larger patient population to ensure adequate power is achieved. Future studies should also incorporate the cost to the patient of COPD exacerbations, as this may galvanize patients into becoming active and informed participants in their care..

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References

Available upon request