

Evaluation of pharmacist led inhaler technique education in patients with chronic obstructive pulmonary disease

Presenter: **Kristeen** Jalal Alazruei
PGY-1 Pharmacy Resident
Guthrie Robert Packer Hospital

BACKGROUND

Chronic obstructive pulmonary disease (COPD) is a progressive lung disease that can include emphysema, chronic bronchitis, and refractory asthma. Optimal disease state management, including appropriate medication use, is crucial for effective treatment. Unfortunately, only 40-60% of patients with COPD adhere to their medications. Of those individuals, studies have shown that up to 85% are using their inhalers incorrectly. In recent years, data has been presented that supports the implementation of pharmacist led medication education in the COPD population.

METHODS

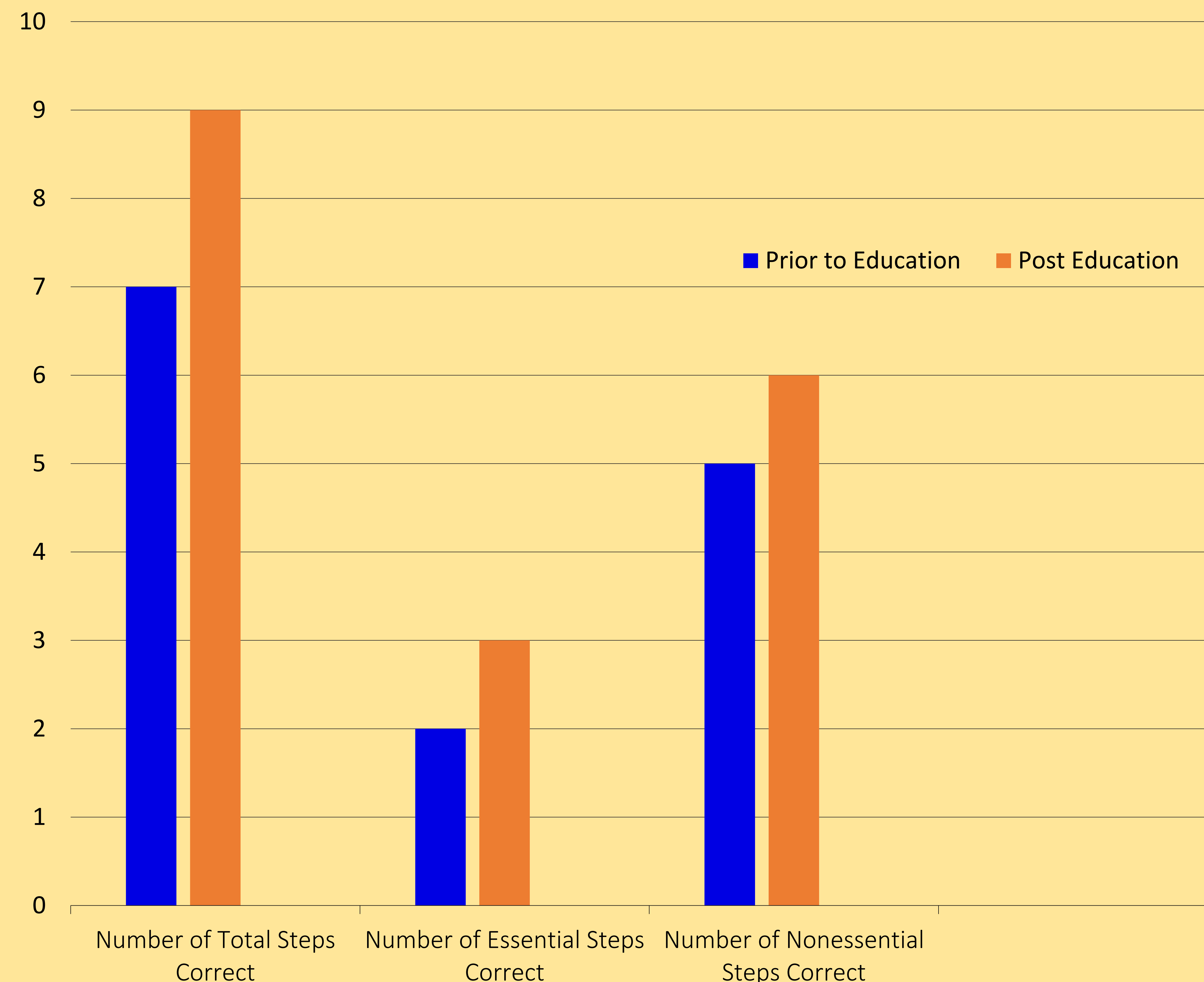
Subjects were identified by a daily generated report. Patients appropriate for education were assigned for pharmacist intervention. Demo inhalers were provided by the pharmacist if the patient was unable to obtain their own. After the patient demonstrated how they believed the inhaler should be used, the pharmacist would conduct an education session to show appropriate administration. Then, using the teach back method, the patient would try to reenact the steps that were taught to them. Inhaler technique was assessed pre and post education using a predetermined grading system.

RESULTS

- Baseline average percentage of inhaler steps performed correctly
 - Total Steps Correct: 86%
 - Essential Steps Correct: 75%
 - Nonessential Steps Correct: 88%
- Post education average percentage of inhaler steps performed correctly
 - Total Steps Correct: 98%
 - Essential Steps Correct: 100%
 - Nonessential Steps Correct: 98%
- 30-day readmission rate = 15%

Pharmacist led inhaler education sessions resulted in an increase in the number of appropriate inhaler steps achieved by patients.

Observed Trend in Correct Inhaler Steps Achieved Pre and Post Education



INHALER STEPS

- Total Steps = 9
- Essential steps = 3
- Nonessential steps = 6

METER DOSE INHALER

1. **Remove mouthpiece cover and shake**
2. Hold inhaler upright
3. Exhale to residual volume
4. Keep head upright or slightly tilted
5. Place mouthpiece between teeth and lips
6. **Inhale slowly and press canister**
7. **Continue slow and deep inhalation**
8. Hold breath for 5 sec
9. Close the inhaler

DISKUS/ELLIPTA

1. **Open inhaler**
2. **Push level back completely**
3. Exhale to residual volume
4. Exhale away from mouthpiece
5. Place mouthpiece between teeth and lips
6. **Inhales forcefully and deeply**
7. Hold breath for 5 sec
8. Exhale away from mouthpiece
9. Close inhaler

RESPIMAT

1. **Remove the cap from the inhaler**
2. Keep inhaler upright
3. **Rotate grip until a click is heard**
4. Exhale to residual volume
5. Exhale away from mouthpiece
6. Place mouthpiece between teeth and lips
7. **Inhale forcefully and deeply**
8. Hold breath for 5 sec
9. Exhale away from mouthpiece

HANDIHALER

1. **Remove the cap and mouthpiece of inhaler**
2. Remove capsules from package and place in center chamber
3. Close mouthpiece until click is heard
4. **Press side buttons once to pierce capsule**
5. Exhale away from mouthpiece
6. Place mouthpiece between teeth and lips
7. **Inhale slowly and deeply**
8. Hold breath for 5 sec
9. Exhale away from mouthpiece

***BOLD** indicates essential step

 Kristeen Jalal Alazruei, PharmD
Email: KristeenJ.Alazruei@Guthrie.org

 Joshua Campbell, PharmD, BCCCP
Email: Joshua.Campbell@Guthrie.org