

Identifying and Improving Incorrect Inhaler Technique: A Quality Improvement Project



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INTRODUCTION

In COPD and asthma, improper inhaler technique is likely a major reason for poor symptom control, increased visits to healthcare facilities, and diminished quality of life.

Device education is of utmost importance as inhalers are the primary method for medication administration and symptom control.

OBJECTIVES

- To identify incorrect inhaler technique.
- To determine the effectiveness of education in improving inhaler usage and symptom control in an outpatient clinic.

METHODS

Over a six-month period, all patients with COPD or asthma at PCOM's multidisciplinary clinic in Philadelphia, PA were provided an initial survey with questions pertaining to patient knowledge and behaviors surrounding inhaler usage.

Physicians and medical students observed patients who had brought their inhaler to the clinic to verify proper usage including technique, dose and frequency.

Patients then received in-person instruction from a physician to correct or refine their technique.

Subsequently, patients were provided internet references for videos reviewing proper inhaler technique specific to their type of inhaler.

A follow-up survey was conducted at the patient's next visit at least three months after the initial visit.

Spirometry was performed at both visits.

RESULTS

- A total of 90 patients completed the initial survey, only 60 patients (66%) had their inhaler with them to demonstrate inhaler technique. 32 of the 60 patients (53%) used the device correctly.
- A total of 28 patients demonstrated inhaler technique at both visits. At the follow-up visit, after education, 18 patients demonstrated correct inhaler technique (64%), 6 patients did not improve (22%), 4 patients demonstrated worse technique (14%).
- Of the 43 patients completing the follow-up survey, 36 of 43 (84%) patients believed face-to-face education was helpful in achieving a better symptom control with their inhaler. 20 of the 43 patients (47%) viewed the internet resources.
- No significant change in spirometry was noted after inhaler education.

CONCLUSION

- 1/3 of patients do not carry their inhaler and only 53% use it correctly.
- Face to face inhaler education and internet resources were well-received by patients and resulted in better perceived control of symptoms.

REFERENCES

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1. Patient Response:
a. Name of Inhaler: _____ Dose: _____ Frequency: _____
Indication: _____
2. EMR Prescription:
a. Name of Inhaler: _____ Dose: _____ Frequency: _____
Indication: _____
3. If on more than one inhaler, please list all being used: _____
4. How long have you been on the inhaler? _____
5. Do you have your inhaler with you? _____
6. Do you use the inhaler regularly as prescribed? _____
7. When was the last time you used the inhaler? _____
8. What was the cause of inhaler education? Have given? Health Care Provider? Video Instructions from Clinic or Hospital? Internet Video? Pamphlet? _____
9. Are your symptoms improved with the inhaler? _____
10. Smoking History? Current? Past? _____
11. Have you been to the emergency room _____ your primary doctor _____ or been hospitalized _____ for your breathing in the last 3 months? _____
12. If the patient has the inhaler at the time of the visit, watch the patient use the device. Based on observation, did the patient use the inhaler correctly? _____
13. If the answer is no, please instruct patient on proper use of inhaler device.
14. Do you have computer or smart phone internet access? _____
If yes, please provide the internet resource for the patient to view on their own at home.
Please perform baseline spirometry on patient.

Figure 1: Initial Survey

Video Demonstration of Various Inhalers

Inhaler Type	Video Name and Link	Video ID Code
Respirator	1. How to Use a Respirator - "Misty Health"	10000000000000000000000000000000
Respirator	2. How to Use a Respirator - "Misty Health"	10000000000000000000000000000000
Respirator	3. How to Use a Respirator - "Misty Health"	10000000000000000000000000000000
Respirator	4. How to Use a Respirator - "Misty Health"	10000000000000000000000000000000
Respirator	5. How to Use a Respirator - "Misty Health"	10000000000000000000000000000000
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Respirator	9. How to Use a Respirator - "Misty Health"	10000000000000000000000000000000
Respirator	10. How to Use a Respirator - "Misty Health"	10000000000000000000000000000000
Respirator	11. How to Use a Respirator - "Misty Health"	10000000000000000000000000000000
Respirator	12. How to Use a Respirator - "Misty Health"	10000000000000000000000000000000
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Respirator	16. How to Use a Respirator - "Misty Health"	10000000000000000000000000000000
Respirator	17. How to Use a Respirator - "Misty Health"	10000000000000000000000000000000
Respirator	18. How to Use a Respirator - "Misty Health"	10000000000000000000000000000000
Respirator	19. How to Use a Respirator - "Misty Health"	10000000000000000000000000000000
Respirator	20. How to Use a Respirator - "Misty Health"	10000000000000000000000000000000

Figure 2: Internet Resources

Inhaler Use Follow-up Patient Survey

- Did you receive in person instruction on the proper use of your inhaler last office visit? _____
Was it helpful? _____
- Did you watch the internet video provided to you last office visit about proper inhaler use? _____
Was it helpful? _____
- Do you feel that your inhaler is working better now that you have been instructed on the proper use of the device? _____
- Have you been to the emergency room _____ your primary doctor _____ or been hospitalized _____ for your breathing since your last survey?
- Watch the patient use the inhaler device. Is the patient using the inhaler device correctly? _____

Figure 3: Follow-up Survey

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Special thank you to PCOM's Family Medicine Department and PCOM's medical students.

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