

Using Demonstration to Improve Clinician Knowledge, Competence, and Performance in COPD Management: An Evolution in Education

The CME initiatives described were supported by educational grants from AstraZeneca LP; Boehringer Ingelheim Pharmaceuticals, Inc.; GlaxoSmithKline; Mylan Specialty L.P. and Theravance Biopharma US, Inc.; Sunovion Pharmaceuticals, Inc.



NEEDS ASSESSMENT

2015

Clinicians don't know all the options out there or how to use them properly

82% of clinicians had inadequate knowledge of inhaler devices and proper administration techniques [Calışkaner 2013]

41% of their patients were making critical mistakes in inhalation, negatively impacting therapeutic outcomes [Calışkaner 2013]



EDUCATIONAL OUTCOMES

Learner: "This will take extra time which I don't have, but if I can help just a few patients who seem to fit the COPD profile, that will make a huge difference in their lives."

73% of respondents made a commitment to change. The most-often cited change was to **better instruct patients** on use of their medication device

Learners identified effectively managing patients with physical or cognitive limitations impacting ability to use devices as an ongoing challenge in practice

NEEDS ASSESSMENT

2016/2017

Clinicians have difficulty selecting a medication delivery device based on individual patient needs and capabilities, and do not adequately ensure proper use of COPD medication delivery devices



Experts noted, "Prior to [receiving] education, some of the clinicians didn't even know what some of the delivery devices were. They had no idea." [Carlin 2015]

According to Paradigm's survey of pulmonologists: **80%** have difficulty individualizing the choice of medication delivery device to suit their patient

77% are challenged in ensuring patient adherence



65% aren't sure how to evaluate patients' inhaler technique

EDUCATIONAL OUTCOMES

Internal Medicine Meeting 2016 live and web

Learners stated:

- "Live demonstrations were a good idea! We never see these."
- "I am more comfortable with how to use the inhalers now."
- "I will start to demonstrate use of the device with my patients."
- "The demonstrations were very helpful."

LO: Match patients to an appropriate device based on their individual characteristics, including technique needed for proper actuation and use

33% ↑
Confidence

92% postactivity commitment to practice change; 2 months later, **47%** implemented changes including **better patient education on inhaler technique**, more closely monitoring patients to **ensure follow-up**

CHEST 2017 live and web

Learners stated:

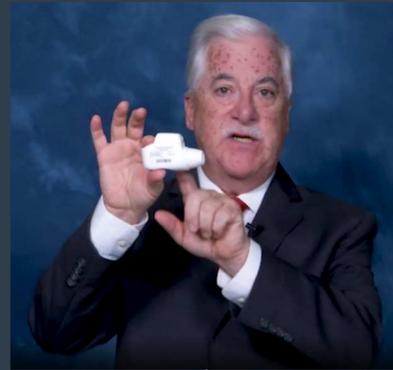
- "The demonstration video was well done."
- "Great device video!"

LO: Choose a medication delivery device for patients with COPD that accords with patients' needs, preferences, and capabilities

98% ↑ Knowledge
48% ↑ Competence
26% ↑ Confidence

92% postactivity commitment to practice change; 2 months later, **40%** implemented changes including **matching patients to appropriate devices**, **improved patient education on device use**

CME featuring medication device demonstrations improves clinician COPD management



EDUCATIONAL NEED: Matching delivery devices to patient capabilities and preferences, proper use and patient training

RESPONSE #1: Demonstrations in live symposia and web spin-offs for Internal Medicine Meeting 2016 and CHEST 2017

RESPONSE #2: Began measuring device selection as a separate learning objective for these initiatives



2016/2017

2015

EDUCATIONAL NEED: Awareness of COPD medication delivery devices and techniques

RESPONSE: Online web monograph with embedded video demonstration

CHOOSING A COPD MEDICATION DELIVERY DEVICE		
Device	Examples	Important Considerations
pMDI	Several from different manufacturers	Not breath-actuated. Patients with poor dentition, cognitive dysfunction, or weak grip strength may find it difficult to actuate. Impaired hand-breath coordination or faulty reducers does not affect drug reaching the lungs. Contains propellants.
MDI with spacer	AeroChamber [®] , AeroChamber Plus [®] , Vorox [®] , WatchInhaler [®]	Less portable/compact than pMDI. Older patients may have trouble understanding. Contains propellants. Need to start inhaling within 3 seconds of actuating.
DPI	Accuhaler [®] , Aerolizer [®] , Brexhaler [®] , Diskus [®] , Neohaler [®] , Diskus [®] , Ellipta [®] , Genuair [®] , Handihaler [®] , Prestair [®] , Turbuhaler [®]	Requires a minimum peak inspiratory flow rate for "hard and fast" inhalation. Patients with cognitive or psychomotor deficits may have difficulty using properly. Most types are moisture sensitive.
SMI	Respimat [®]	Use requires 3-step process; patients with physical or cognitive impairment may have difficulty.
Nebulizer	Jet, ultrasonic, and mesh	Jet and ultrasonic nebulizers require an outside energy source. Performance varies among nebulizers. Jet nebulizers cannot aerosolize a certain volume of solution. Risk of bacterial contamination. Need for daily cleaning and longer time required for drug administration.

DPI, dry powder inhaler; MDI, metered-dose inhaler; pMDI, pressurized MDI; SMI, soft-mist inhaler.

Sources: Muller DA. *Ann Am Thorac Soc*. 2017;14(7):1103-1107. Mahler DA. *Respir Care*. 2017;62(10):1103-1107. *Respir Care*. 2017;62(10):1103-1107. *Respir Care*. 2017;62(10):1103-1107. *Respir Care*. 2017;62(10):1103-1107.

For a video demonstration of COPD medication delivery devices, visit: www.paradigmcc.com/615COPDdemo

2018/2019

EDUCATIONAL NEED: Performing initial demonstration, and checking patient technique at each visit

RESPONSE #1: Continued device demonstrations using link on pocket card, provided patient education handout in live symposium and web spin-off for Internal Medicine Meeting 2018

RESPONSE #2: Included video of clinician-patient interaction in live symposia and web spin-offs for Internal Medicine Meeting 2019 and Family Medicine Experience 2019

WHAT'S NEXT

EDUCATIONAL NEED: Uncertainty about device selection, patient technique training and monitoring continues
RESPONSE #1: Repeat education to reinforce gains among previous learners, expand to reach new clinicians
RESPONSE #2: Pursue opportunities for live hands-on demonstration and coaching for clinicians

NEEDS ASSESSMENT

2018/2019

Clinicians still unsure about medication delivery devices, don't discuss proper technique with patients

50% of pulmonologists are not knowledgeable about COPD treatment devices [ATS 2017]



70% of pulmonologists are not sure which patients should use nebulizers [ATS 2017]

10% of pulmonologists routinely discuss how to clean and store devices with patients [ATS 2017]



COPD experts state **patients do not understand how to properly use their inhaler**, although they think they do. They stress poor inhaler technique can only improve if clinicians continue **checking inhaler technique at every visit**.

EDUCATIONAL OUTCOMES

Internal Medicine Meeting 2018 live and web

LO: Choose a medication delivery device for patients with COPD that accords with patients' needs, preferences, and capabilities

31% ↑ Knowledge
50% ↑ Competence
36% ↑ Confidence

93% postactivity commitment to practice change, including **improving patient education regarding inhaler technique**

Internal Medicine Meeting 2019 live and web

LO: Assess appropriateness of medication delivery device options based on patient capability for proper use

(overall averages to date)
23% ↑ Competence
15% ↑ Confidence

93% postactivity commitment to practice change, including **improving patient education regarding inhaler technique**

Webinar launched April 15, 2019



AAFP 2019 live and web

LO: Match patients to an appropriate device based on their individual characteristics, including technique needed for proper actuation and use

(overall averages to date)
94% ↑ Knowledge
57% ↑ Competence
39% ↑ Confidence

100% commitment to practice change, including **matching device to patient, demonstrating and ensuring proper technique**

Follow-up survey results showing implemented changes for live symposium will be available in January 2020

Webinar launched October 10, 2019

NEEDS ASSESSMENT

NEXT

Ongoing need for education is clear

Low pretest scores indicate continuing gap at baseline, in keeping with published literature—need more education to wider audience



Knowledge, competence, and performance are improving, but not all participants are demonstrating increases—repeat education with same learners to reinforce message

The ACP 2019 live symposium vividly illustrated the ongoing need: only **42%** of learners correctly identified all of the steps involved in proper MDI inhaler technique prior to education

Anticipated Education: Opportunities for **live hands-on demonstrations and coaching**

REFERENCES
American Thoracic Society (ATS) and Sunovion release landmark survey of pulmonologists' attitudes and practices with inhalation devices for COPD at the ATS 2016 International Conference. Business Wire. May 15, 2017. www.businesswire.com/news/home/20160515005036/en/American-Thoracic-Society-ATS-Sunovion-Release-Landmark. Accessed July 28, 2017.
Calışkaner AZ, Ostrik C, Coyle E, et al. The knowledge and considerations of the physicians regarding the inhaler devices in asthma and COPD: the INTEDA-1 study. *Turk Toraks*. 2013;61(3):183-92.
Carlin B, Kanel K, Campus S, et al. Standardizing inhaler training across a COPD care management project. Presented at COPDUSA; June 2015.