



# Results of a Pulmonologist Survey Regarding Attitudes and Practices with Inhalation Devices for COPD

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## INTRODUCTION

Inhaled medications are preferred for COPD as they target the airway for direct bronchodilator and/or anti-inflammatory activity. Many devices are available to deliver these inhaled medications, including metered dose inhalers (MDI), dry powder inhalers (DPI) and hand-held small volume nebulizers.

Matching the appropriate device to the patient, based on both the properties of the device as well as the abilities of the patient, is important for successful therapy. Additionally, training and re-training the patients and caregivers on the appropriate use, cleaning, and maintenance of the device is also of paramount importance for efficacy and safety. No formal guidance exists on when to use specific delivery devices, or for which patients to achieve optimal clinical outcomes. Therefore, healthcare professionals are at the forefront to match therapy and device to patients as well as provide the necessary training.

The present investigation was conducted to determine physician knowledge, attitude and practice regarding the management of COPD with special attention to the use of devices. Further exploration into experience and practice with hand-held small volume nebulizers was also conducted.

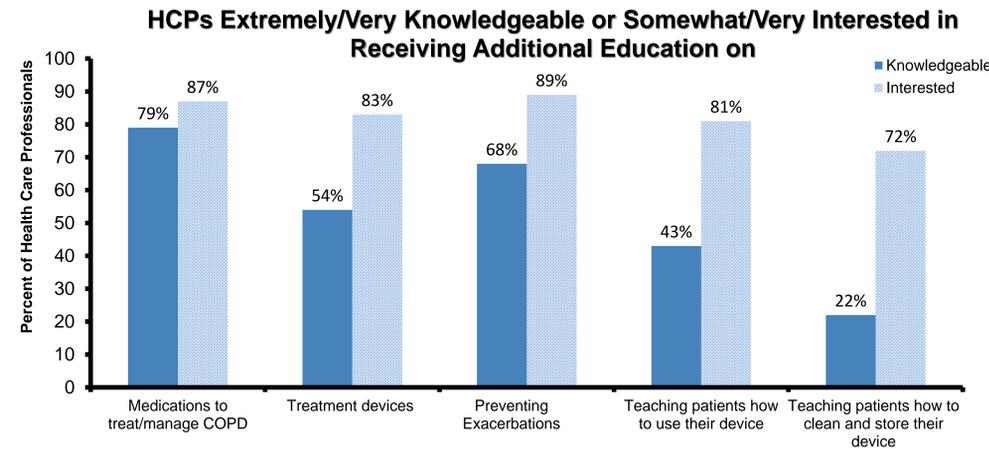
## METHODS

- The format was an online survey designed by a steering committee of the American Thoracic Society physicians and scientists
- Survey was conducted by Harris Poll between January 7 and January 29, 2016
- Pulmonologists and pulmonology fellows from around the world were solicited via email. Participants were identified from the ATS membership roster and the ATS 2015 International Conference attendee roster
- Two hundred and five US pulmonologists and fellows completed the survey
- Data were not weighted and are therefore representative only of the individuals who completed the survey

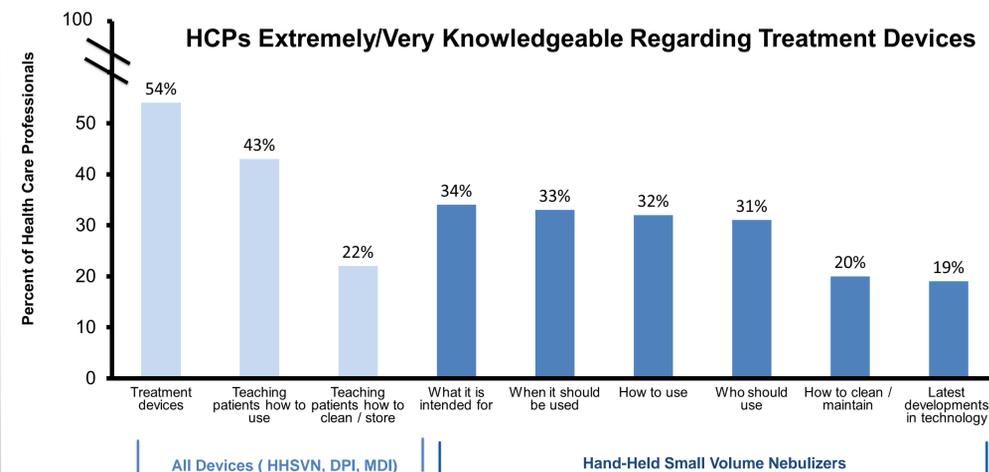
## RESULTS

### Demographics

	Practicing Pulmonologists	Fellows in training
<b>% Of Respondents</b>	81% (n=167)	19% (n=38)
<b>Year In Fellowship</b>		1st Year   2nd Year   3rd Year   4th Year
		24%   29%   45%   3%
<b># COPD Patients seen / week</b>		
1-5	20%	42%
6-10	28%	32%
11-15	11%	11%
16-20	14%	8%
21+	28%	8%
<b>Mean proportion of patients referred by</b>		
PCP	58.1	53
ER	11.3	22.1
Allergist	3.4	3.1
Other	15.5	13.5
Not Referred	11.7	8.3
<b>Mean proportion of patients seen- by mMRC scale</b>		
Grade 0	5.2	6.4
Grade 1	14.7	16.5
Grade 2	29.0	28.2
Grade 3	33.5	32.2
Grade 4	17.5	16.7



- 79% of respondents are at least very knowledgeable in medications to treat/manage COPD as well as 68% are knowledgeable in preventing exacerbations
- 54% of respondents are at least very knowledgeable in treatment devices including hand-held small volume nebulizers
- However, a minor proportion of respondents are at least very knowledgeable in teaching patients how to use (43%) or clean/maintain (22%) the devices
- The majority of respondents remain interested in learning more about all of these topics including devices and patient education
- 56% of respondents feel that hand-held small volume nebulizers are essential for some patients
- 70% reported they discussed with patients how to use the device during the first visit
- 9% discussed how to clean and store devices with their patients during the first visit



- More than half of respondent are at least very knowledgeable in treatment devices including hand-held small volume nebulizers
- Only about 3 in 10 respondents were at least very knowledgeable about what the devices are intended for, who should use them, and how to use them
- Only 20% were at least very knowledgeable about how to clean and maintain hand-held small volume nebulizers or about the latest developments in device technology

### When Do You Typically Recommend a Nebulized Medication?

	mMRC grade					Following an Acute Exacerbation
	0	1	2	3	4	
<b>Early in treatment</b>	4%	10%	16%	31%	52%	69%
<b>Later in treatment</b>	7%	20%	37%	52%	41%	26%
<b>Do not</b>	89%	70%	48%	17%	7%	5%

### For Which Patient Group Do You Find Hand-Held Small Volume Nebulizers More Effective than DPIs or MDIs?

	mMRC grade					Following an Acute Exacerbation
	0	1	2	3	4	
<b>MDI or DPI inhalers</b>	5%	5%	15%	42%	63%	70%

- About half of respondents utilize medication through hand-held small volume nebulizers early in treatment for patients with most severe dyspnea (mMRC Grade 4)
- Medication through hand-held small volume nebulizers was recommended early in treatment by 69% of respondents, when the patient experienced an acute exacerbation
- Hand-held small volume nebulizers were believed to be more effective than MDIs or DPIs by an increasing percentage of physicians as the severity of dyspnea increased
- Similar proportions of physicians believe that hand-held small volume nebulizers were more effective than MDI/DPI in mMRC grade 4 (63%) or acute exacerbations (70%)

## CONCLUSION

- The majority of US pulmonologists and fellows believe they are at least very knowledgeable about management and medications for COPD and in preventing exacerbations
- Few pulmonologists and fellows believe they are at least very knowledgeable about devices (especially hand-held small volume nebulizers), for whom and what they are used for, as well as how to use, clean and maintain them
- Medication through hand-held small volume nebulizers are recommended early in treatment when dyspnea is more severe and during acute exacerbations

## ACKNOWLEDGEMENTS

This study was sponsored by Sunovion Pharmaceuticals Inc., Marlborough, MA and survey data provided by Harris Poll, New York, NY