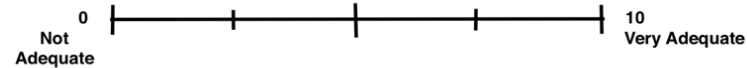


Low Provider Knowledge of Inhaler Technique Requires Urgent Attention

Michael A. Marsh, MD & Rakesh M. Gupta, MD
Roger Williams Medical Center

Raise your hand if you know the names of these devices and each step in their proper use:

5. How adequate do you feel in coaching your patients about proper inhaler technique?



6. Write the name of the each inhaler below its picture.



This physician thought he
knew...





© 20th Century Fox

I have no financial
relationship with Lucas
films...

Proper inhaler technique is necessary to treat obstructive lung diseases

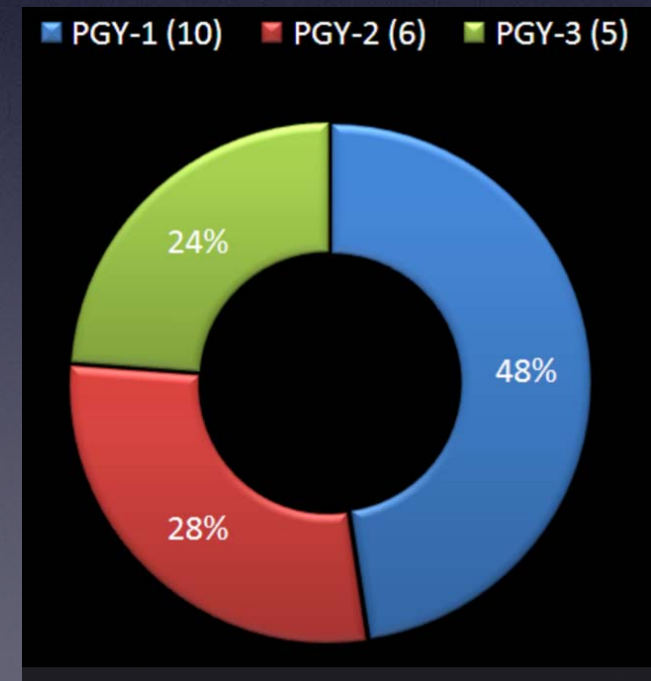
- Factors affecting patient's learning of inhaler technique:
 - Education received – **HCP most important source**
 - Patient's educational/reading level
 - Patient motivation and self efficacy
 - Complexity of devices and Tx regimen

Healthcare providers are the main source of patient education, therefore, provider knowledge is crucial in teaching proper inhaler technique

- **Objective:**
Assess provider knowledge about inhalers
- **Hypothesis:**
Provider knowledge about inhaled devices and technique are not adequate

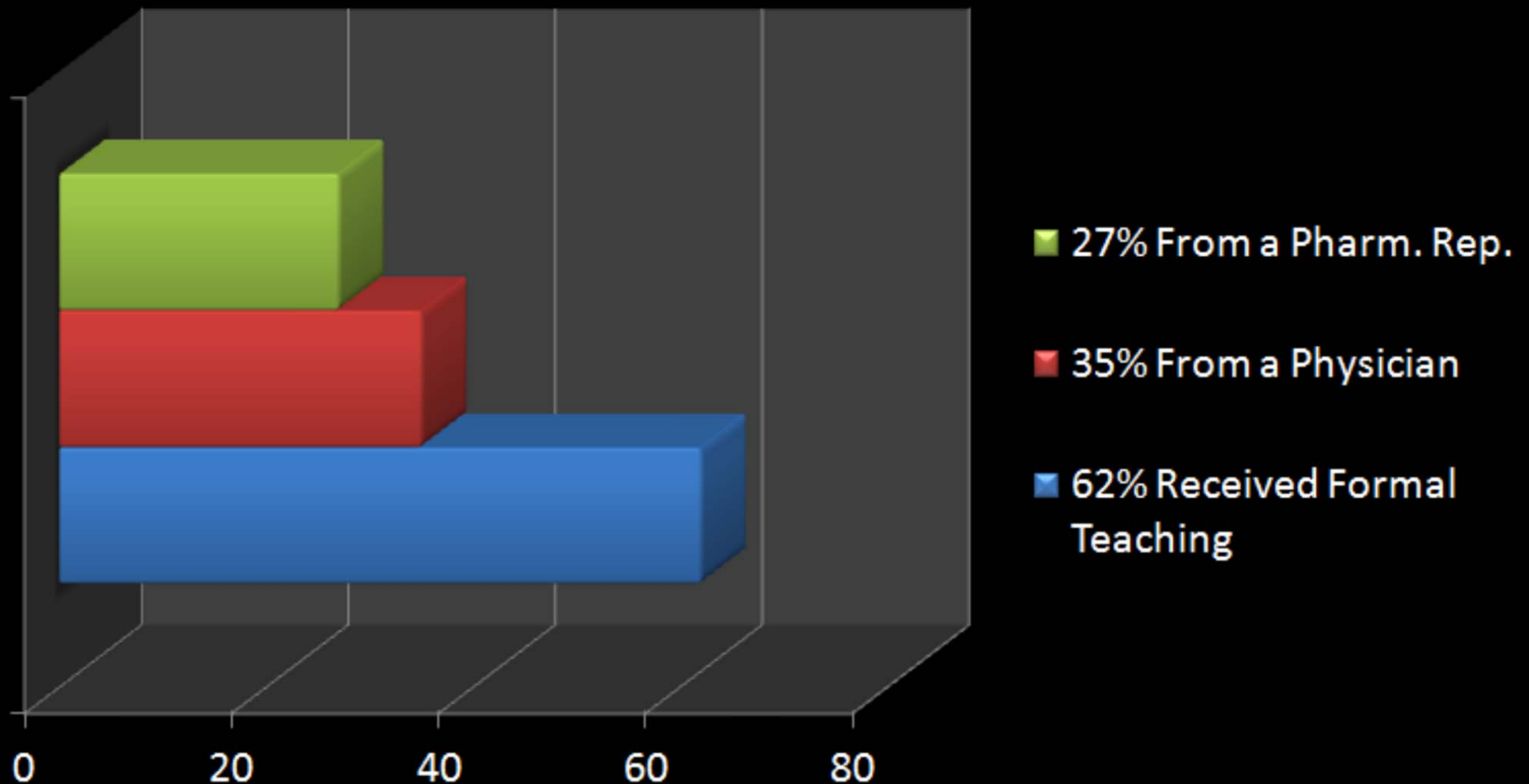
Methods

- A questionnaire about inhaler use administered to **21** internal medicine residents grouped by PGY level (10 PGY-1, 6 PGY-2 & 5 PGY-3) to assess the following domains:
- Education the provider received and the source of education
- The resident's perception of their adequacy of inhaler knowledge
- The ability to identify commonly used inhalers
- Knowledge of inhaler technique
- Clinical practice patterns on educating patients
- Barriers felt to providing education
- Perceived need for formal education



Results

Residents Who Received Formal Training



Results

Self Efficacy of Residents using a visual analog scale (0-10)

- How adequate residents felt at providing inhaler training

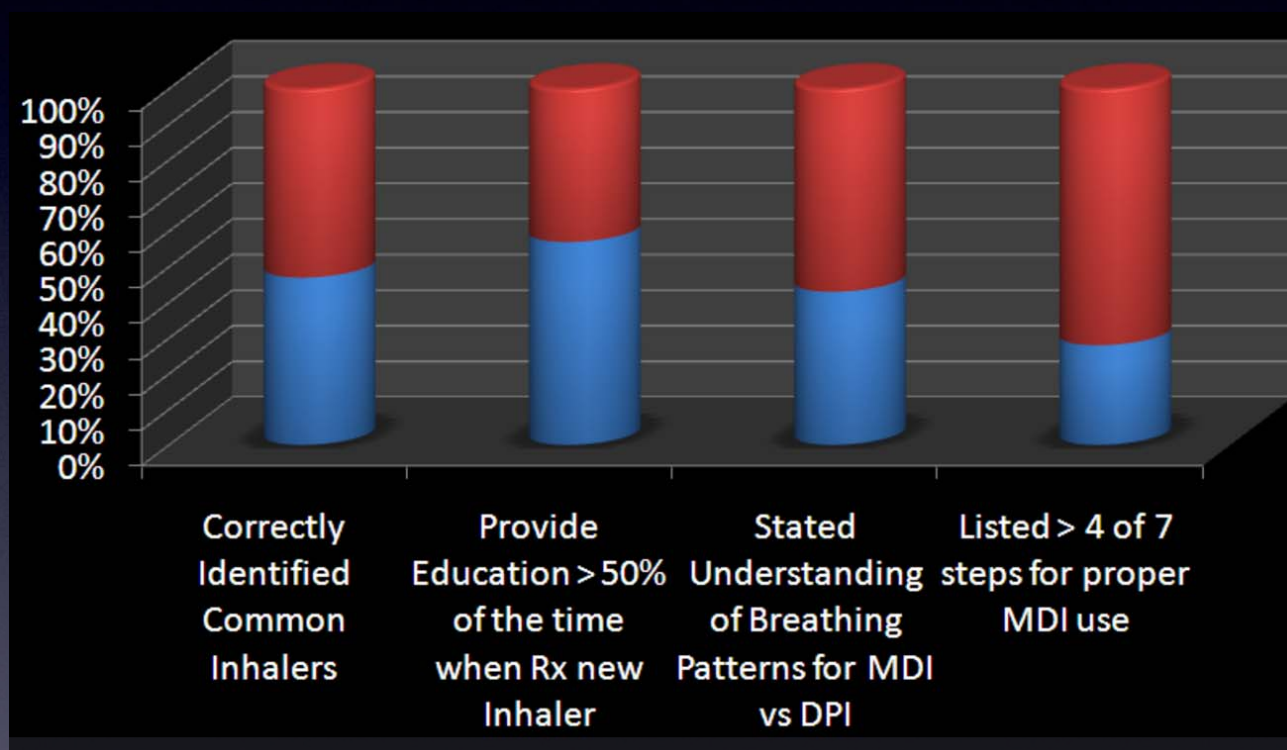
6.7 +/- 2.1

- The level of confidence residents had in being able to learn how to properly use an inhaler if they were a patient after only a quick demonstration

7.0 +/- 2.1

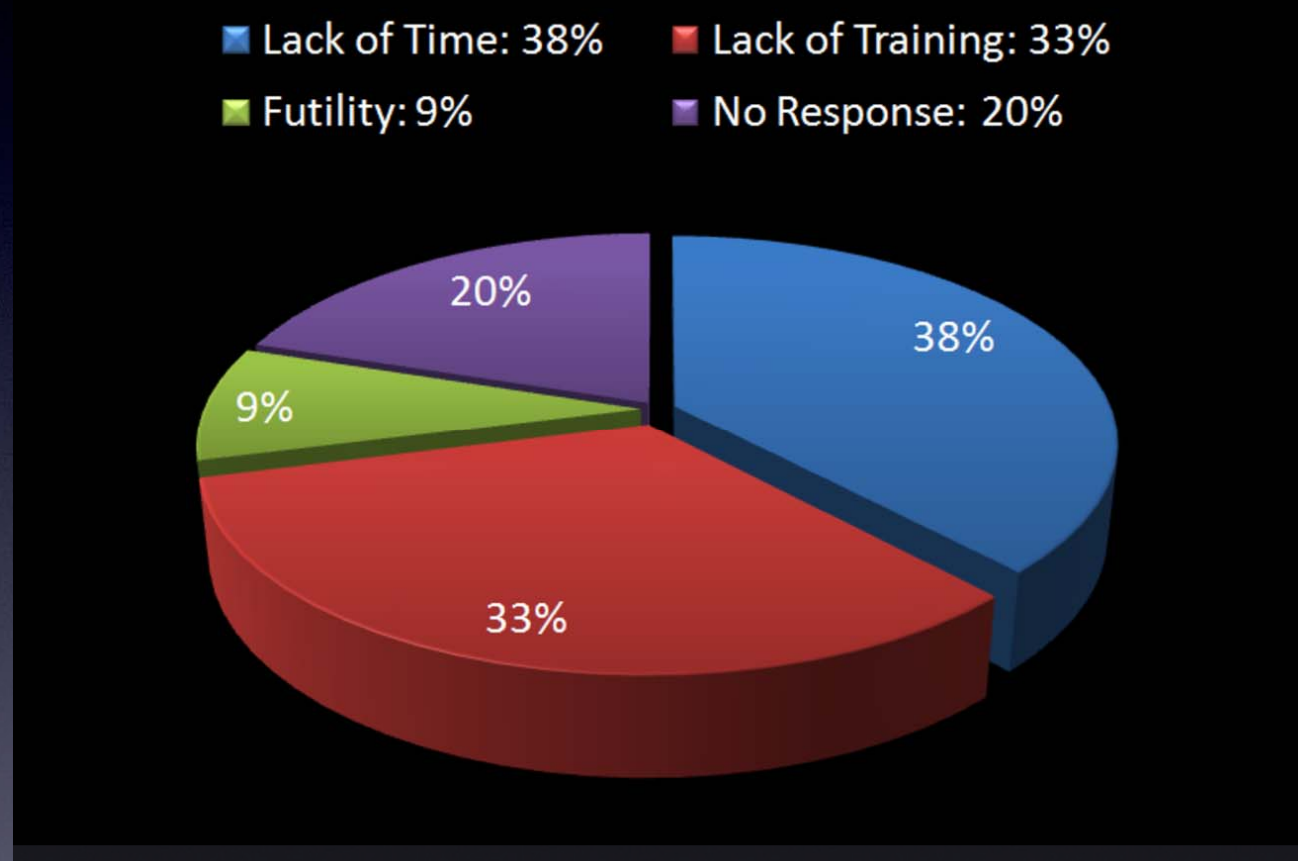
Results

- Color images of six commonly used MDIs & DPIs were provided. Only **47%** were correctly identified
- **57%** provided education by some method **>50%** of the time
- **28%** were able to correctly list 4 of 7 steps considered crucial
- **None** were able to list all steps



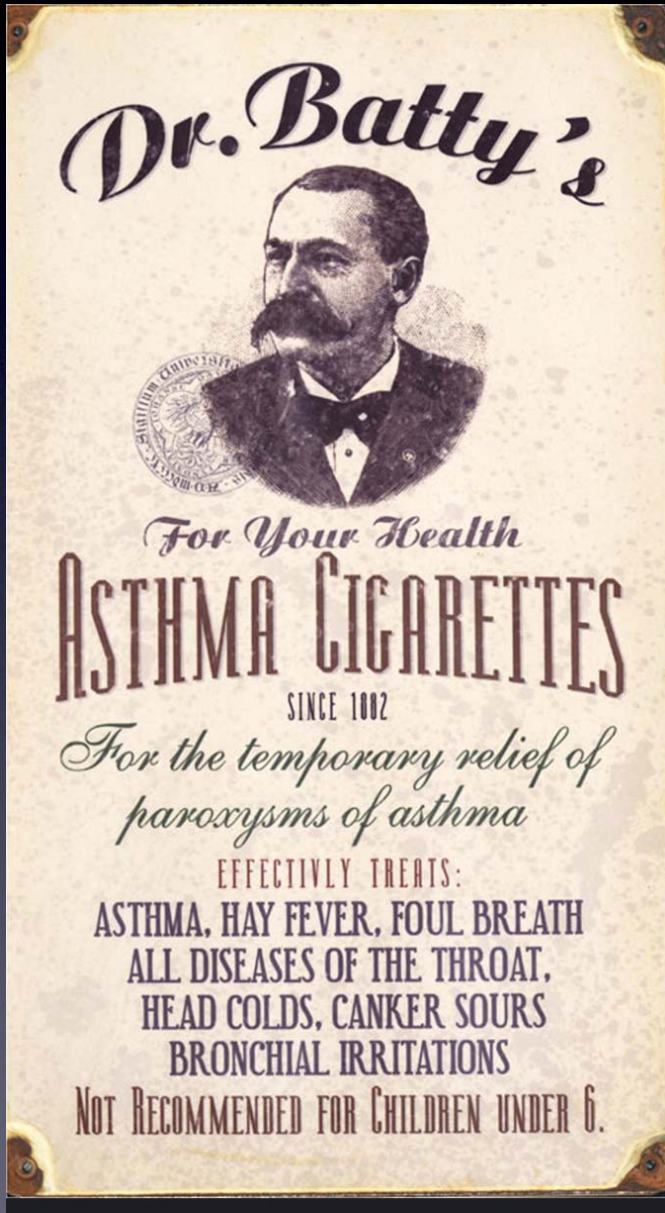
Results

- Constraints in educating patients:



- **91%** reported that additional training would increase the frequency of patient teaching in their practice.

Discussion



Discussion

Our study of resident physicians shows :

- Low provider knowledge about inhalers
 - 47% rate of identifying common inhalers
 - 0% rate of listing all steps for correct MDI technique
- Consequences:
 - Low self –efficacy about ability to educate patients
 - Low rate of educating patients on Inhalers – 57%
- Barriers to educating patients:
 - Time
 - Lack of training

Medical Personnel's Knowledge of and Ability to Use Inhaling Devices*

Metered-Dose Inhalers, Spacing Chambers, and Breath-actuated Dry Powder Inhalers

Nicola A. Hanania, M.D.; Richard Wittman;

Steven Kesten, M.D., F.C.C.P.; and Kenneth R. Chapman, M.D., F.C.C.P.

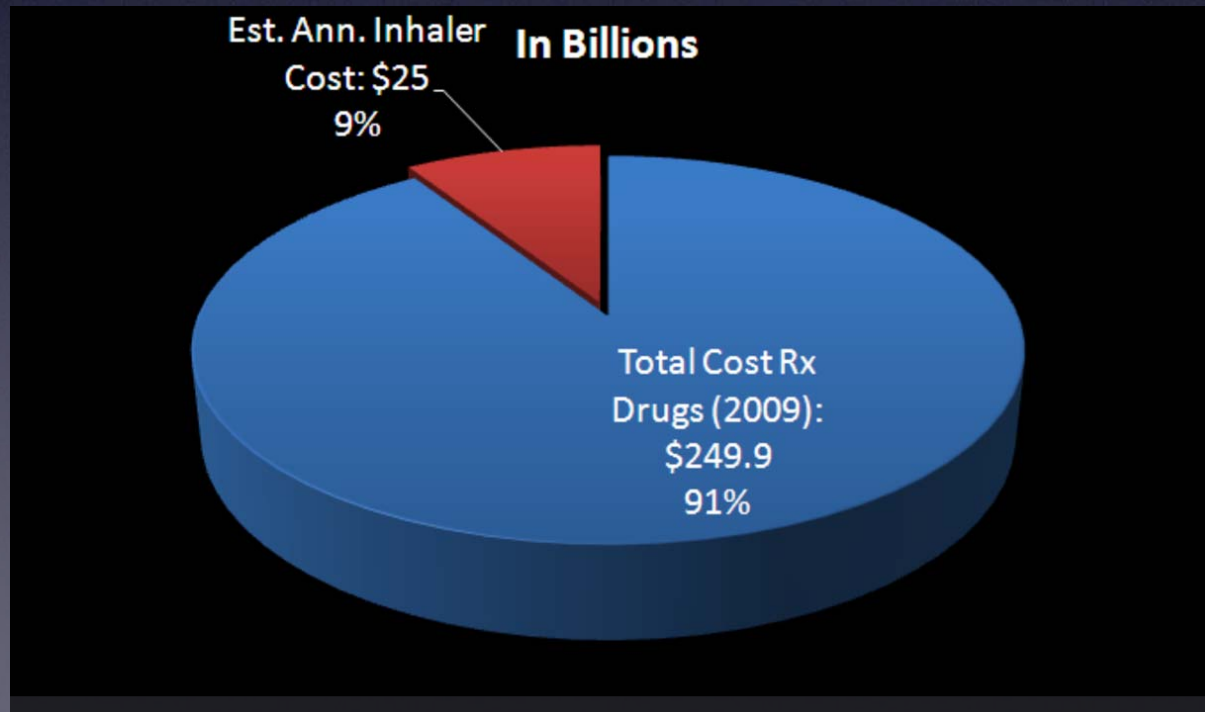
Table 3—Percent Mean (\pm SD) Demonstration and Knowledge Scores*

	Knowledge Score	Demonstration Score		
		MDI	Turbuhaler	Aerochamber
RT	67 \pm 5	97 \pm 3	60 \pm 30	98 \pm 2
RN	39 \pm 7	82 \pm 13	12 \pm 23	78 \pm 20
MD	48 \pm 7	69 \pm 24	21 \pm 30	57 \pm 31

*MDI = metered-dose inhaler; RT = respiratory therapist; RN = registered nurse; MD = house staff physician.

Discussion

- "An estimated **\$25 billion** spent on inhalers annually"
- "**28-68%** of patients reported to use inhalers incorrectly"
- "Approximately **\$7-15.7 billion** wasted annually"



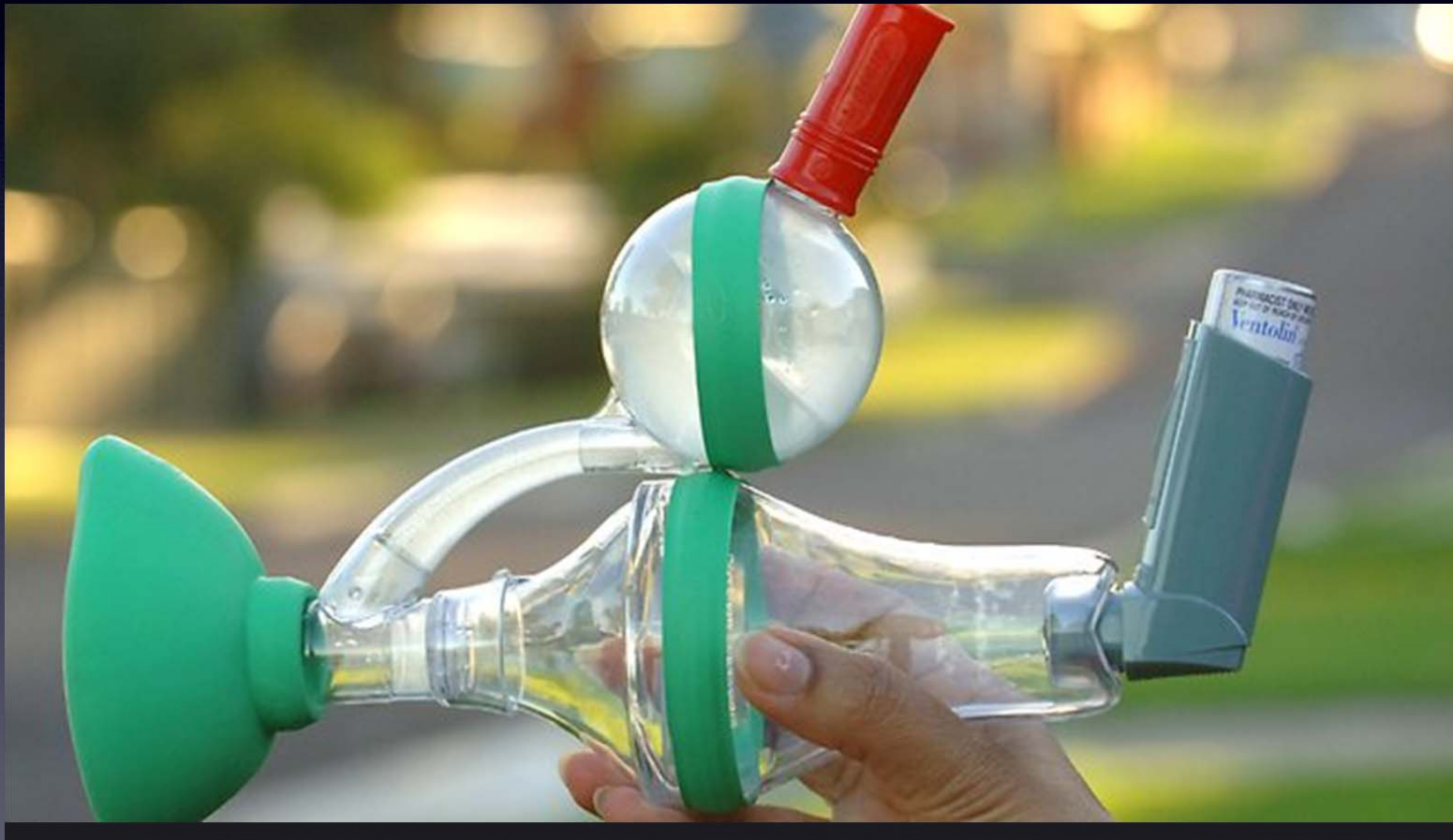
Discussion

- "39-67% of healthcare professionals, including physicians, cannot adequately describe or perform steps necessary for proper inhaler use"

"Management of chronic airways disease is 10% medication and 90% education."

Fink JB. Respir Care. 2005 Oct;50(10):1360-74.

It's not that
complicated...



Please Visit www.use-inhalers.com

The screenshot shows the homepage of the website. At the top, there is a navigation menu with links for Home, Videos, About Inhalers, Press, For Providers, CRCE Course, and FAQs. Social media icons for Facebook (833 likes), Twitter (Follow), and YouTube (56 followers) are also present. The main banner features a video player titled "How To Use Inhalers" with the text "Practice real time using innovative webcam" and "Save the cost of medicine". Below the banner, there are three main sections: a "Subscribe" form for monthly updates, a "How to Use Inhalers" app section listing features like "All in one app" and "Available on the iPhone and iPad", and a "Get our FREE Assist Me with Inhalers app" section. The "Get Started" section allows users to choose an inhaler type (MDI with Spacer) and language (English or Español). It is divided into three learning paths: "Learn Quick" (video), "Learn and Practice" (interactive step-by-step instructions), and "Learn In-Depth" (in-depth tour and quiz). The bottom section includes "Our App Reviews" with quotes from Medical Apps and Healthtechhatch, "Interactive Animations" for "What is an Inhaler" (coming soon) and "What is Asthma", and "Testimonials" from Gary C. Steven, M.D., Ph.D., CPI, FAAAAI, FAAAAI Allergy, Asthma & Sinus Center. A "Print" button is located at the bottom left.

- A comprehensive online tool for provider and patient education
- Can reduce time burden on busy providers by incorporating in daily workflow
- Interactive, engaging education on all inhaler devices

Conclusion

- Provider knowledge of inhalers is highly inadequate
- There is an urgent need to educate providers before we can expect them to adequately educate their patients.