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Optimizing Inhaler Technique

Ruby L. Russell

Larner College of Medicine, University of Vermont

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Optimizing Inhaler Technique

Ruby Russell

Family Medicine December-January

Mentors- Dr Kaminsky

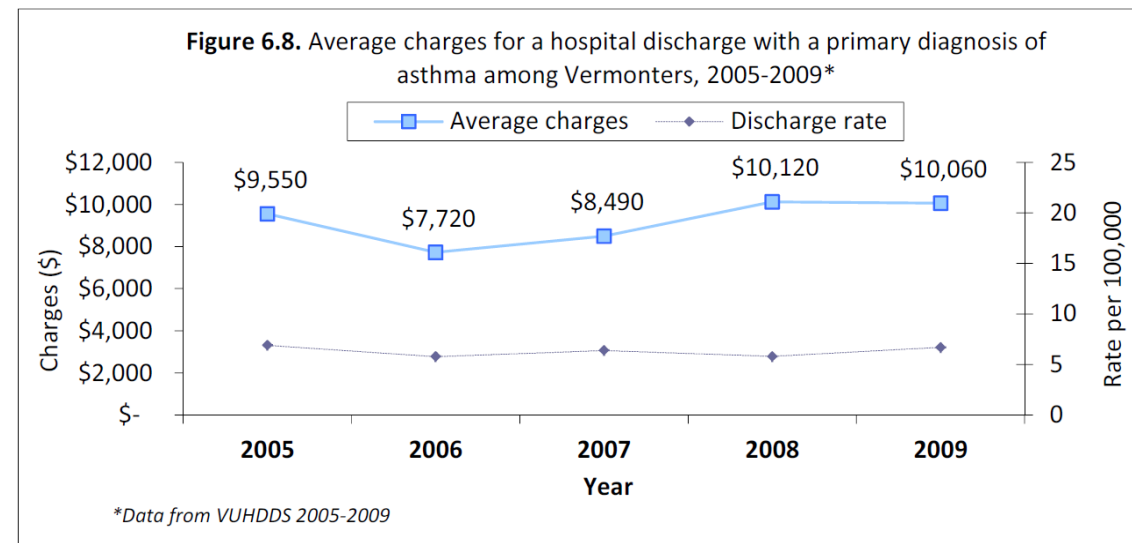
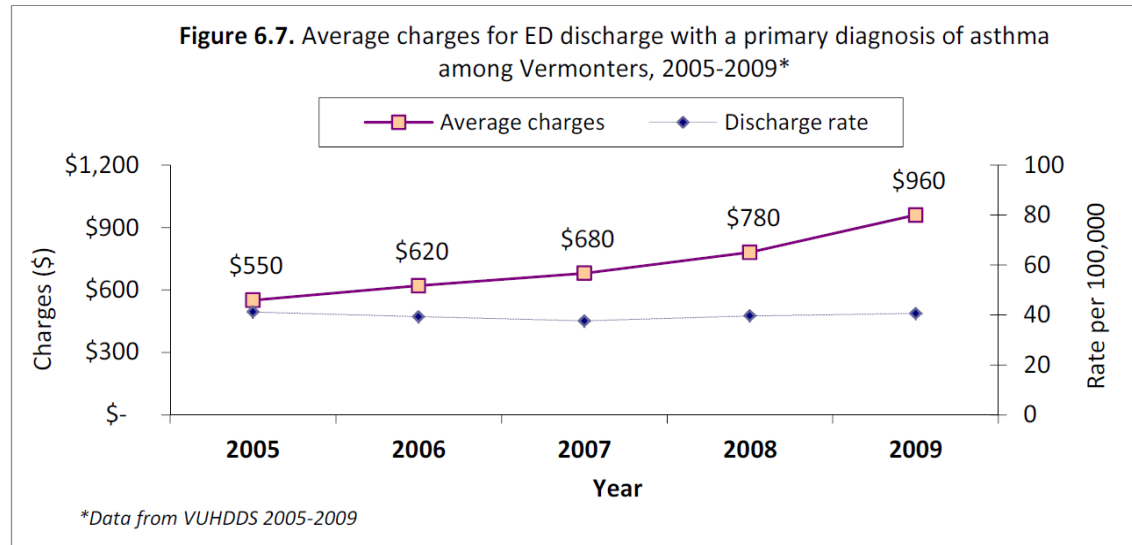
Location- South Burlington Family Practice

Description of Need

- ▶ Lung disease is common in Vermont (State of VT, 2017)
 - ▶ 11% of Vermont adults have asthma (3rd highest in U.S.)
 - ▶ 8% of Vermont children have asthma
 - ▶ 5% of Vermonters have COPD
- ▶ There are an expanding number of inhaler designs and techniques
- ▶ Often, physicians spend more time considering drug type than delivery method
- ▶ Many patients do not know how to use their inhalers properly with rates of critical errors ranging from 15%-45% depending on design
- ▶ Research shows that repeated teaching improves technique
- ▶ Many physicians are not able to satisfactorily explain or demonstrate steps for inhaler use (Nelson, 2016)

Public Health Cost

- ▶ Patients with asthma require more office visits, and are more likely to report skipping needed visits due to cost than patients without asthma
- ▶ Inappropriate technique leads to lower drug delivery and higher use and therefore cost of medication to patient
- ▶ Poorly controlled asthma and COPD lead to more hospitalizations and costly stays



Community Perspective and Support

- ▶ “most patients do not know how to use an inhaler properly, and it can take time in the clinics to teach them, so this is an area that needs improvement...”
- ▶ “one of the main reasons patients do poorly with asthma and COPD is lack of adherence to their medications. This poor adherence means not only not taking them regularly, but even when they do take them, not taking them properly.”

-Dr Kaminsky, Critical Care Medicine and Pulmonary Disease

- ▶ “There are many technologies that have been developed to deliver inhaled drugs. However, use of these technologies can be convoluted. Unfortunately, while patients want to take their medications to feel better, inhaler misuse is very common. As a student, I have seen patients use inhalers incorrectly which contributes to progression of chronic conditions, like asthma and COPD. In addition to challenges with proper use, patients also often struggle with the difference between control and rescue inhalers....”
- ▶ extensive counseling is often necessary for the proper use of inhalers.”

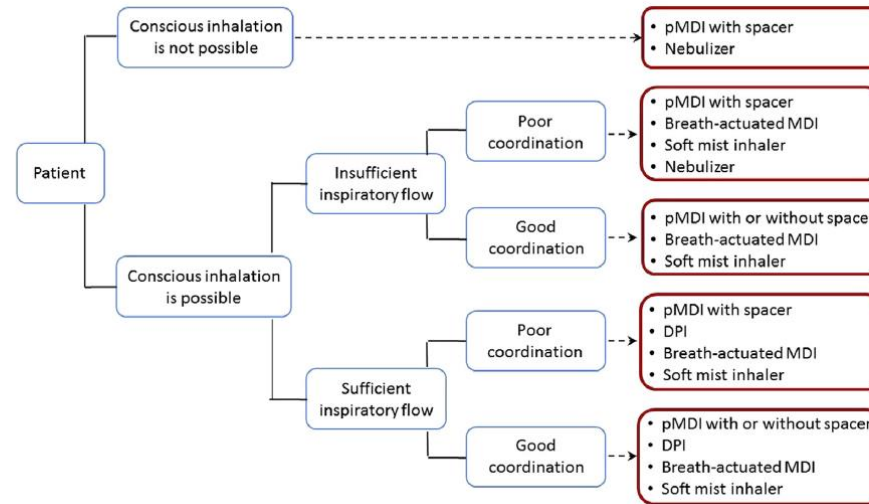
-Brittney Mikell, 2nd year pharmacy student

Intervention and Methodology (1)

- ▶ Interviewed community members and leaders about need for repeated patient teaching, and complexity of inhaler use
- ▶ Reviewed best practice on frequency of teaching
- ▶ Reviewed how to choose appropriate inhaler for individual patients
- ▶ Reviewed existing patient instructions on inhaler use
 - ▶ Focused on simplicity of language, diversity of inhaler types offered, presence of video instructions, ease of access
- ▶ Created PRISM Smartphrase for ease of use of clinicians
 - ▶ Listed under INHALERNAME
- ▶ Presented proposal to staff and physicians at South Burlington Family Practice

Intervention and Methodology (2)

- ▶ Choose inhaler type based on patient characteristics using well described algorithms
- ▶ Check List
 - ▶ Specific questions about use
 - ▶ Visualize patient's technique at each visit (Nelson 2016)
 - ▶ Flag need for teaching by either MD or respiratory team
 - ▶ Ideally provide in person teaching at each visit
 - ▶ Alternatively, regular provide materials during patient visit
- ▶ Video and visual reminders of technique at each visit
 - ▶ UVM lung materials- picture, video, written instructions- (<https://www.uvmhealth.org/medcenter/Pages/eHealth/HealthwiseContent/Default.aspx?hid=center1042>)
 - ▶ Searched literature for recommended type and
 - ▶ Inhaler specific instructions- (<http://use-inhalers.com/patients-handouts>)
 - ▶ Save as Smart Phrase to print out with patient instructions
- ▶ Ensure staff are well trained with inhaler technique
 - ▶ “An estimated 39% to 67% of nurses, physicians, and respiratory therapists were reported unable to adequately describe or perform critical steps of using inhalers” (Nelson 2016)



From Nelson 2016, adapted from Dekhuijzen et al



Results/ Response

- ▶ Technique optimized by regular teaching from medical team including use of props, videos, teach back (Nelson, 2016)
- ▶ UVM Healthwise materials are easily accessible, but limited in the number of techniques covered
- ▶ In PRISM researching via UptoDate can be time consuming and cumbersome
- ▶ Having dot phrases ready can save time and increase likelihood that teaching happens
- ▶ Favorite resource: use-inhalers, online resource with free patient handouts, video instructions for both providers and patients
 - ▶ Very easy to follow and access
 - ▶ Not overly wordy
 - ▶ Videos move slowly, step by step

“Flyers for Healthcare Professionals
Download and print flyers and hand them out to your patients
Patients can directly visit use-inhalers.com and learn correct inhaler techniques by themselves
Flyers available in English and Spanish
Save time and cost”

Results/ Response (2)

► PRISM dot phrase options from use-inhalers web page

- Aerolizer
- Autohaler
- Diskus
- Flexhaler
- Handihaler
- Mdi closed mouth
- Mdi with spacer
- Neohaler
- Pressair
- Respimat
- Twisthaler

www.use-inhalers.com

- For cleaning refer to the patient instructions that accompanies your inhaler.
- Following these step by step instructions will help you to inhale medicine effectively.



Step 1: Check the dose counter to see the number of doses remaining.



Step 2: Hold the inhaler properly in both the hands. Open the inhaler by using the thumb grip slide. You'll hear a click.



Step 3: Hold the inhaler horizontally. For loading the dose, slide the lever downwards. You'll hear a click.



Step 4: Exhale away from the inhaler.



Step 5: Place the mouthpiece in your mouth. Take a quick and deep breath.



Step 6: Hold your breath for 10 seconds. Exhale slowly through your mouth or nose.



Step 7: If you are using "Flovent Diskus" and have been advised to take another dose, then repeat the steps from 3 to 6, after 30 seconds. If you are using a corticosteroid medication, rinse your mouth after all doses are complete.

Effectiveness and Limitations

- ▶ Effectiveness measured in the future by number of patients who correctly use inhaler and feel confident with medication administration
- ▶ Measured by decreased exacerbations, medication cost, unwanted side effects
- ▶ Limitations include length of office visit, quickly changing inhaler design, lack of follow up

Future Interventions and Projects

- ▶ Obtain demonstration inhalers for use by RNs at each appointment
- ▶ Integrate checklist into EMR as a health maintenance reminder for any patient with asthma or COPD on the problem list
- ▶ Integrate algorithm for choosing appropriate inhaler technology
- ▶ Identify office member to lead Physician Asthma Care Education (PACE) seminar
 - ▶ All materials are available free of charge. Seminars have proven to lead to better technique and outcomes
- ▶ Organize bi-yearly PACE training

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Consent Form

INTERVIEW CONSENT FORM
{Optimizing Inhaler Technique}
{Ruby Russell}
{1/3/2018}


Thank you for agreeing to be interviewed. This project is a requirement for the Family Medicine clerkship. It will be stored on the Dana Library ScholarWorks website. Your name

The interviewer affirms that he/she has explained the nature and purpose of this project.

The interviewee affirms that he/she has consented to this interview.

Yes

Name: Brittney M Mikell_____

Name: David Kaminsky, MD  01/06/2018_____