

### **Simple high level stuff on Asthma and treatment, reference the EPR-3<sup>1</sup>**

- More than 22 million Americans have asthma, including 6 million children
- Different age groups and asthma control levels have different recommended treatments
- Asthma control informs how treatment needs to change over time.
- Monitoring can either be symptom frequency based or peak flow (ability to push a lot of air out at once as measured by a device)
- Treatment is step-wise. I.e. If current treatment level is not sufficient at asthma control "step-up" to the next rung on the ladder, and step-down when possible

### **EPR-3 (referenced in the mentor's document) takeaways:**

- EPR-3, Expert Panel Report the third, is an updated report providing providers guidelines for diagnosis and management of asthma, created by gathering knowledge from medical experts and the literature. Included is an ask to help disseminate to the provider community.
- EPR-3 introduces a focus on monitoring asthma control (impairment: fewer symptoms and lower negative impact on quality of life and risk: acute e.g. ED visit and chronic e.g. reduced lung growth) over time
- EPR-3 places emphasis on patient and provider education about asthma treatment

### **Separate study showing that the efficacy of a project like this seems to be supported**

In an article<sup>2</sup> published in *Pediatrics* in 2010, researchers from the Children's hospital of Philadelphia used a cluster-randomized trial to produce evidence suggesting that using an EHR-based clinical decision support system at the point of care improved clinician compliance with National Asthma Education Prevention Program guidelines.

*This study may fit on both sides of Research and Business case:*

<http://pediatrics.aappublications.org/content/pediatrics/135/4/e965.full.pdf>

**Could mention that there are existing tools that may provide similar functionality, but might not want to (can't verify that they use FHIR, might not want to suggest that similar tools already exist. This is market context though.)**

Here are two existing free tools that may conceptually do something similar to what our tool is intended to do:

<http://www.asthamamd.org/> out of the University of California San Francisco

<http://myasthma.com/> out of the University of Nottingham

### **Extraneous things *probably* not for deliverable 1 from EPR-3 but could be useful to know for meetings with our mentor team:**

- In the guidelines, severity at diagnosis informs initial next steps (called asthma action plan), then control dictates stepping up or down

<sup>1</sup> EPR-3, from <https://www.nhlbi.nih.gov/files/docs/guidelines/asthsumm.pdf>

<sup>2</sup> "Electronic Health Record-Based Decision Support to Improve Asthma Care: A Cluster-Randomized Trial

" <http://pediatrics.aappublications.org/content/early/2010/03/15/peds.2009-1385.short>

**Commented [1]:** Simple high level stuff on Asthma and treatment, reference the EPR-3 (footnote 1)

**Commented [2]:** Could use a graphic here. I uploaded a few but I don't find them too great...  
22 million total and 6 million total come from the EPR-3 document. Estimates I've found say 30.1 million total and 7.3 million total Americans in each category, which is 7.3% and 8% asthma in each category respectively

**Commented [3]:** I would describe the app we're building as an EHR-based clinical decision support system at the point of care (and it also documents it in the EHR per requirement #6)

I think this speaks to the "needs" aspect somewhat

-Asthma is highly variable over time  
-"Monitoring" of asthma control can either be symptom frequency based or peak flow (ability to push a lot of air out at once as measured by a device)  
-After initial contact, EPR-3 recommends follow-ups for monitoring control at 1 to 6 month intervals  
--Figure 12, on page 41 in the EPR-3 document (<https://www.nhlbi.nih.gov/files/docs/guidelines/asthsumm.pdf>) looks like it might get at the heart of what our app will need to do as far as calculating degree of control (requirements #3 and #4 in the mentor's PDF)  
-Figure 4 on page 17 is a sample probably representative of the asthma control form we'll need to build in requirement #1 and #2

"Because asthma is a chronic inflammatory disorder, persistent asthma is most effectively controlled with daily long-term control medication directed toward suppressing inflammation. ICSs are the most consistently effective anti-inflammatory therapy for all age groups, at all steps of care for persistent asthma."

"Achieving and maintaining asthma control requires four components of care: assessment and monitoring, education for a partnership in care, control of environmental factors and comorbid conditions that affect asthma, and medications."

#### **Additional extraneous things that might be of interest for the mentor conversations**

Here are two tools that may do what our tool is intended to do, and more:

<http://www.asthmamd.org/features/>  
<http://myasthma.com/>