

Clinical Decision Support and NHLBI Asthma Guidelines

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Overview and take home thoughts...

- These guidelines are over 400 pages long!
- Clinical Decision Support is only a tool – has to be useful and used
- Are the guidelines realistic in primary care?
- Practice transformation!

How do we get from point A -> point B?
Why do we want to get from point A -> point B?



Orders Medications Problems + Medication + Problem

Summary | ACT/ATAQ | Control/Sev | Triggers | Assessment | Action Plan | Education | SMgmt Goals

Asthma Management - Summary | DOB: 03/10/1961 | Patient Age: 56 Years Old | [add all to note](#)

Screening	Last Screening	Protocol	Recommendation	Today	add
Severity	Class: Risk: Impairment:	At First Diagnosis	Due	Update	<input type="checkbox"/>
Control	Class: Risk: Impairment:	Every 6 months	Due	Update	<input type="checkbox"/>
Spirometry	FVC: FEV1: FEV1/FVC: Spirometry:	Every 6 months	Due	Update	<input type="checkbox"/>
Asthma Action Plan	AAP:	Every 6 months	Due	Update	<input type="checkbox"/>
ACT/ATAQ		Every 6 months	Due	Update	<input type="checkbox"/>
Triggers	Triggers: Smoking: former smoker (12/06/2016) Passive Smoke: No (02/16/2016)	Every 6 months	Due	Update	<input type="checkbox"/>
Patient Education	Basic Asthma Facts: Trigger Reduction: Inhaler/Nebulizer Use: Adherence: Yearly Flu Vaccine: Peak Flow Use:	Every 6 months	Due	Update	<input type="checkbox"/>
Influenza Vaccine	#1: #2: Excl:	Yearly (seasonal from July to June)	Due	Add Influenza	<input type="checkbox"/>
Pneumococcal Vaccine	#1: Booster (PPSV): Booster (PCV13):	Once before age 65, then once over 65, if 5 yrs since prev	Due	Add Pneumovax	<input type="checkbox"/>

References: [NHLBI Guidelines Summary Report](#) | [Overview of Guideline Changes \(AAFP\)](#) | [Orders](#)

Clinical Decision Support

- Mixed reviews...
 - “Many CDSSs improve practitioner performance. To date, the effects on patient outcomes remain understudied and, when studied, inconsistent.” Garg, et al. [JAMA](#). 2005;293:1223-1238
 - “The current generation of CDSSs is unlikely to result in improvements in outcomes for patients with asthma because they are rarely used and the advice is not followed. Future decision support systems need to align better with professional workflows so that pertinent and timely advice is easily accessible within the consultation”. Matui et al. [NPJ Prim Care Respir Med](#). 2014; 24: 14005
 - “Evidence supports the effectiveness of CCDSS in the care of people with asthma.... Although there is considerable improvement in the health care process measures and clinical outcomes through the use of CCDSSs, its effects on user workload and efficiency, safety, costs of care, provider and patient satisfaction remain understudied.” Fathima, et al. [BMC Pulm Med](#). 2014; 14: 189

Asthma Clinical Decision Support Project

AllianceChicago/Association of Clinicians
for the Underserved

- 4 year EPA grant award in 2010 to revise EMR content to display NHLBI asthma guidelines (with an area of emphasis being environmental triggers)
- Part of a federal action plan to reduce racial/ethnic disparities in asthma care
- Meant to address Meaningful Use goals –
 - Improve quality and safety (CDS and measurement capability)
 - Increase patient and family engagement
 - Improve population and public health

Landing page – what's missing and what's needed?

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References: [NHLBI Guidelines Summary Report](#) [Overview of Guideline Changes \(AAFP\)](#) [Orders](#)

Standardized patient reported screener

Orders Medications Problems + Medication + Problem

Summary ACT/ATAQ Control/Sev Triggers Assessment Action Plan Education SMgmt Goals

Asthma Management - Patient Questionnaire DOB: 08/07/2014 Patient Age: 3 Years & 3 Months Old

Pediatric Asthma Control Test (ACT)

Questions for Child

1. How is your asthma today?
 Very Bad Bad Good Very Good

2. How much of a problem is your asthma when you run, exercise or play sports?
 It's a big problem- I can't do what I want to do It's a problem and I don't like it It's a little problem but it's okay It's not a problem

3. Do you cough because of your asthma?
 Yes- all the time Yes- most of the time Yes- some of the time No- none of the time

4. Do you wake up during the night because of your asthma?
 Yes- all the time Yes- most of the time Yes- some of the time No- none of the time

Questions for Parent

5. During the last 4 weeks, how many days did your child have any daytime asthma symptoms?
 Not at all 1-3 days 4-10 days 11-18 days 19-24 days Everyday

6. During the last 4 weeks, how many days did your child wheeze during the day because of asthma?
 Not at all 1-3 days 4-10 days 11-18 days 19-24 days Everyday

7. During the last 4 weeks, how many days did your child wake up during the night because of asthma?
 Not at all 1-3 days 4-10 days 11-18 days 19-24 days Everyday

Calculate Peds ACT
Total Score:
Print ACT

For an ACT score of 19 or less, the child's asthma may not be controlled. ?

References: [Asthma Control Test \(4-11\)](#)

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Control or Severity, Impairment and Risk

Orders Medications Problems + Medication + Problem

Summary ACT/ATAQ Control/Sev Triggers Assessment Action Plan Education SMgmt Goals

Asthma Management - Control/Severity DOB: 08/07/2014 Patient Age: 3 Years & 3 Months Old Return to Summary

Control - should be evaluated every 6 months View Medication List

Currently on controller medication? yes no Severity has been classified elsewhere?

Assessment for: Control Severity Severity: Mild Persistent

Impairment Most Severe Symptom Determines Control Classification. Not all questions are required Clear

	Well Controlled	Not Well Controlled	Very Poorly Controlled
Cough due to asthma:	<input type="radio"/> None <input checked="" type="radio"/> <=2 days/wk	<input type="radio"/> >2 days/wk	<input type="radio"/> Daily
Wheezing:	<input type="radio"/> None <input type="radio"/> <=2 days/wk	<input checked="" type="radio"/> >2 days/wk	<input type="radio"/> Daily
Chest tightness:	<input type="radio"/> None <input type="radio"/> <=2 days/wk	<input type="radio"/> >2 days/wk	<input type="radio"/> Daily
Shortness of breath:	<input type="radio"/> None <input type="radio"/> <=2 days/wk	<input type="radio"/> >2 days/wk	<input type="radio"/> Daily
Nighttime awakening:	<input type="radio"/> None <input checked="" type="radio"/> <=1x/month	<input type="radio"/> >1x/month	<input type="radio"/> >1x/wk
Interference with normal activity:	<input type="radio"/> None	<input type="radio"/> Some Limitation	<input type="radio"/> Extremely Limited
SABA use (not for EIB):	<input type="radio"/> None <input type="radio"/> <=2 days/wk	<input type="radio"/> >2 days/wk not daily	<input type="radio"/> Several times per day

Risk

Acute/ ER visit(s) due to asthma: 0 1 in last year 2 in last year >=3 in last year

Hospitalizations due to asthma: 0 1 in last year 2 in last year >=3 in last year

Exacerbations requiring oral steroids: 0-1/year 2-3/year >3/year

Classification Accept All Classifications Below

Impairment Classification: Moderate Accept Moderate

Risk Classification: Moderate Accept Moderate

Control Classification: Not Well Controlled Accept Not Well Controlled

Calculated from impairment and risk

Asthma Control Comments

Finally! The decision support!

[Orders](#) [Medications](#) [Problems](#) [+ Medication](#) [+ Problem](#)

[Summary](#) | [ACT/ATAQ](#) | [Control/Sev](#) | [Triggers](#) | **Assessment** | [Action Plan](#) | [Education](#) | [SMgmt Goals](#)

Asthma Management - Assessment DOB: 08/07/2014 Patient Age: 3 Years & 3 Months Old [Return to Summary](#)

Provider Assessment - Today

Severity: Mild Persistent (11/10/2017) [Update](#)
 Control: Not Well Controlled (11/14/2017)

Inhaler Technique: Correct Incorrect N/A
 Medication Adherence: Good Fair Poor N/A
 Environmental Control: Adequate Inadequate N/A

Decision Support - Today ?

Control Class: Not Well Controlled [Recommend step up in therapy](#)
 Impairment: Moderate
 Risk: Moderate
 Previous Step: --- Regular follow up every 2 - 6 weeks (based on today's control)---

Provider Assessment / Step Comments:

Problems: [Asthma- Mild Persistent \(493.90\)](#) [Update Problems](#) [Update Medications](#)

Step 1	Step 2	Step 3	Step 4	Step 5	Step 6
<input type="checkbox"/> Step 1 SABA PRN	<input type="checkbox"/> Step 2 Preferred: Low-dose ICS Alternative: Cromolyn or Montelukast Consider consultation	<input type="checkbox"/> Step 3 Preferred: Medium-dose ICS Consult Asthma Specialist	<input type="checkbox"/> Step 4 Preferred: Medium-dose ICS + either LABA or Montelukast Consult Asthma Specialist	<input type="checkbox"/> Step 5 Preferred: High-dose ICS + either LABA or Montelukast Consult Asthma Specialist	<input type="checkbox"/> Step 6 Preferred: High-dose ICS + either LABA or Montelukast Oral systemic corticosteroids Consult Asthma Specialist

Action Plan (based on medication list)

Update - Andrew H. Test -- Ofc Visit at EFHC-W1 on 11/10/2017 9:30:14 AM by Sara Naureckas MD [Doc ID: 11]

Orders Medications Problems + Medication + Problem

Summary ACT/ATAQ Control/Sev Triggers Assessment Action Plan Education SMgmt Goals

Asthma Management - Action Plan Recommendations DOB: 08/07/2014 Patient Age: 3 Years & 3 Months Old Same as Previous

Parent/Guardian Information on AAP? Yes No Mother/Parent 1 Name: Home Phone #:
Is patient allowed to self-medicate? Yes No Father/Parent 2 Name: Emergency Contact #:
[Print AAP \(English\)](#) [Print AAP \(Spanish\)](#)

Green Zone Last Updated:

*Breathing is good
No cough or wheeze
Sleep through the night
Can work or play*

Instructions

No medications used in the green zone

Take controller medication as prescribed: Instructions
Additional controller medication as prescribe Instructions
5-60 Minutes before exercise, take: Instructions
Avoid things that make your asthma worse. Avoid tobacco smoke and ask people to smoke outside.
Other Instructions:

Yellow Zone Last Updated:

*First sign of a cold
Cough
Mild wheeze
Tight chest
Coughing at night*

Instructions

First...

Continue taking controller medications as prescribed.
 Add quick relief medication: Instructions
 If you are taking your quick-relief medication more than 2 to 3 times/week, then call your provider.
If your symptoms and/or peak flows do not improve after 1 hour of treatment, then...
 Take quick relief medication: Instructions
 Also take quick relief medicatio Instructions
 Call your primary care provider if no improvement in days.
Other Instructions:

Red Zone Last Updated:

*Breathing is hard and fast
Trouble walking and talking
Lips and/or fingernails blue*

Instructions

Take this medication: Instructions
 Call your provider NOW, if unable to reach provider go to Emergency Room.
 Call 911 if person doesn't respond to you, skin is sucked in around the neck and ribs, and/or if lips or fingernails are grey or blue
 Make an appointment with your primary care provider within two days of an emergency room visit or hospitalization.
Other Instructions:

Patient and Family Education

Orders Medications Problems + Medication + Problem

Summary | ACT/ATAQ | Control/Sev | Triggers | Assessment | Action Plan | **Education** | SMgmt Goals

Asthma Management - Education DOB: 08/07/2014 Patient Age: 3 Years & 3 Months Old [Return to Summary](#)

Education

[all education done today](#)

- Basic Asthma Facts
- Reduction of triggers
- Inhaler/Nebulizer Use
- Adherence Education
- Advised to Quit Smoking
- Annual Flu Vaccine (Last Flu Vax#1:)
- Peak Flow Meter Use
- Asthma Action Plan Reviewed

[Care Management Plan](#) [Self Management Goals](#)

Resources: [Asthma Education Resources \(ACU\)](#)

Lessons learned and thoughts to ponder...

- The “5 rights” of CDS – how do you design/choose the best clinical decision support?
 - the right information
 - To the right person
 - In the right format
 - Through the right channels
 - At the right time

Campbell, Robert James. "The Five Rights of Clinical Decision Support: CDS Tools Helpful for Meeting Meaningful Use" *Journal of AHIMA* 84, no.10 (October 2013): 42-47 (web version updated February 2016)

Lessons learned and thoughts to ponder...

- Can you realistically put 440 pages of clinical practice guideline into a 10-15 minute pediatric visit??
 - Possibly (probably) not
 - Research shows that for asthma, more experienced clinicians who already know and believe in the guidelines use the CDS more effectively...

Hoeksema et al. JAIMA. 2011 18: 243-250

- Team based care!!!
- Not every tab is for every person or every visit.
- This is hard for clinicians to get their minds around

Thank you!
Questions or comments?
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