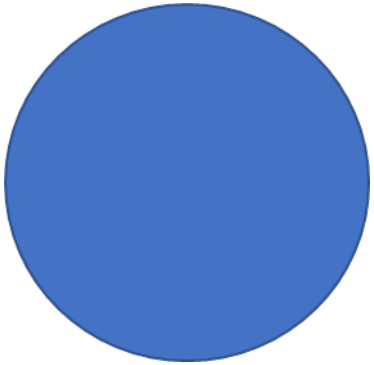
July 14, 2022
AIM Forum

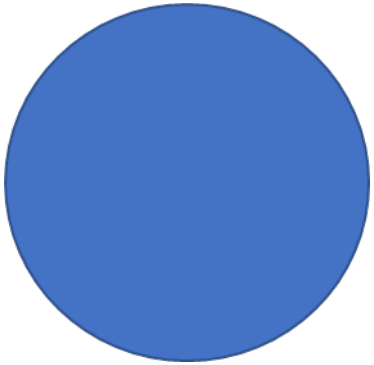
INHALE
Inspiring Health Advances in Lung Care

Objectives

Share information about INHALE



Talk about the PO/INHALE partnership



Discuss goals of the project and how to join forces to improve care

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Purpose

Inspiring Health Advances in Lung Care (INHALE) is a collaborative quality initiative, in partnership with Blue Cross Blue Shield of Michigan, that aims to engage and empower Physician Organizations across the state to improve patient outcomes, address inequities in care, and promote high-value health care for children and adults with asthma and adults with chronic obstructive pulmonary disease (COPD).

Our vision is a world where anyone can breathe deeply and live fully.

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INHALE LEADERSHIP

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Why Focus on Asthma & COPD

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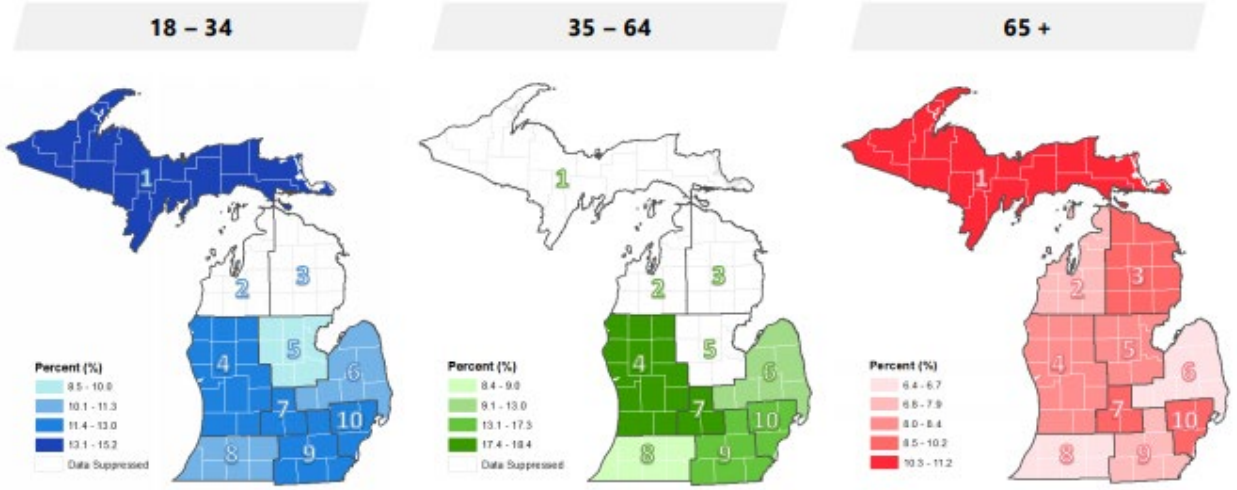
Prevalence of Asthma in Michigan- Age

- Based on 2018 CDC data:
  - **11.2% of Michigan adults** have asthma.
  - Michigan ranks **seventh in the nation** overall for asthma prevalence.



Prevalence of Current Asthma Among Adults Between 18 and 34 Years of Age [a,b]			
Prosperity Region	Percent (%)	Prosperity Region	Percent (%)
1 – Upper Peninsula	15.2	7 – South Central	12.7
2 – Northwest	-	8 – Southwest	11.3
3 – Northeast	-	9 – Southeast Michigan	12.5
4 – West Michigan	13.0	10 – Detroit Metro	13.0
5 – East Central Michigan	8.5		
6 – East Michigan	11.0	**State of Michigan**	**12.3**

Prevalence of Current Asthma Among Adults Between 35 and 64 Years of Age [a,b]			
Prosperity Region	Percent (%)	Prosperity Region	Percent (%)
1 – Upper Peninsula	-	7 – South Central	18.0
2 – Northwest	-	8 – Southwest	8.4
3 – Northeast	-	9 – Southeast Michigan	17.2
4 – West Michigan	18.4	10 – Detroit Metro	15.3
5 – East Central Michigan	-		
6 – East Michigan	9.5	**State of Michigan**	**14.7**

Prevalence of Current Asthma Among Adults Over the Age of 65 [a]			
Prosperity Region	Percent (%)	Prosperity Region	Percent (%)
1 – Upper Peninsula	11.2	7 – South Central	9.8
2 – Northwest	7.7	8 – Southwest	6.7
3 – Northeast	9.8	9 – Southeast Michigan	7.9
4 – West Michigan	8.4	10 – Detroit Metro	10.2
5 – East Central Michigan	8.1		
6 – East Michigan	6.4	**State of Michigan**	**8.9**

Data Notes: [a] Prevalence data taken from the 2012-2016 Michigan Behavioral Risk Factor Survey (MiBRFS). [b] Prosperity region rate suppressed if sample size < 50 or if the relative standard error > 30.

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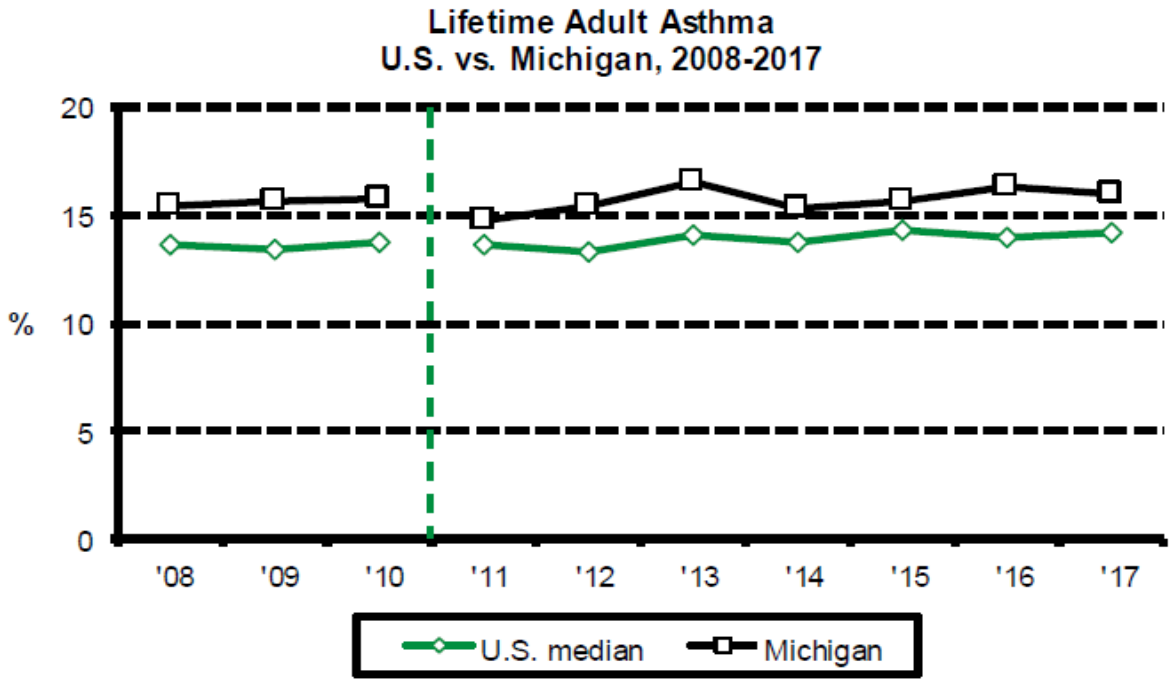
Trends in Asthma Prevalence in Michigan



- **Women have a higher prevalence of current asthma (14.6% vs 7.0%)**
- **Black, non Hispanic adults have a higher prevalence of current asthma (15.3% vs 10.3%**

BRFFS Survey 2017

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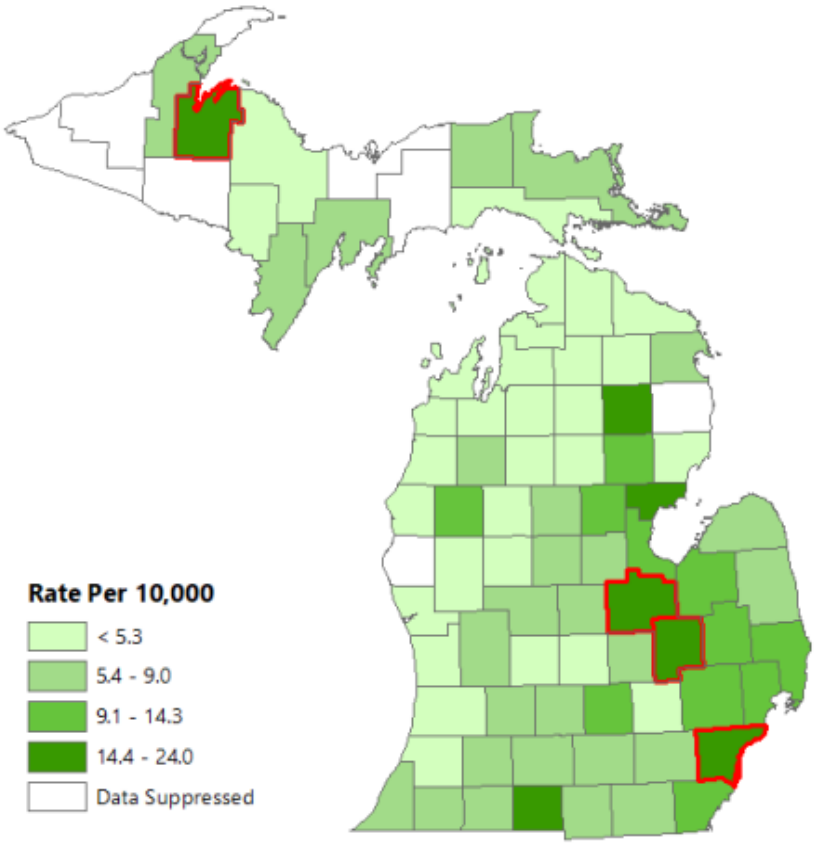
Prevalence of Asthma in Michigan– Adult Hospitalizations



Data Notes:
[a] Hospitalization data taken from the 2010-2014 Michigan Inpatient Database. [b] Rates are age-adjusted to the 2000 US Standard Population. [c] County rate suppressed if hospitalization count < 20. [d] Counties defined as outliers (see page 2) are outlined in red on the map and indicated by an asterisk in the table.

Age-Adjusted Rates [a,b] (per 10,000) of Asthma Hospitalizations Among Adults (Aged 18+) [c,d]

County [d]	Rate	County [d]	Rate
Alcona	-	Lake	9.7
Alger	-	Lapeer	9.5
Allegan	4.0	Leelanau	4.3
Alpena	6.4	Lenawee	5.4
Antrim	3.3	Livingston	3.7
Arenac	14.9	Luce	7.7
Baraga	16.4 *	Mackinac	4.7
Barry	6.9	Macomb	11.5
Bay	13.3	Manistee	3.9
Benzie	5.1	Marquette	3.5
Berrien	6.4	Mason	2.3
Branch	14.3	Mecosta	2.9
Calhoun	6.7	Menominee	8.3
Cass	5.4	Midland	6.7
Charlevoix	2.7	Missaukee	4.2
Cheboygan	4.1	Monroe	12.9
Chippewa	8.1	Montcalm	5.9
Clare	6.4	Montmorency	4.7
Clinton	5.0	Muskegon	3.9
Crawford	2.7	Newaygo	3.3
Delta	5.4	Oakland	11.0
Dickinson	4.2	Oceana	-
Eaton	7.1	Ogemaw	10.0
Emmet	5.0	Ontonagon	-
Genesee	15.7 *	Osceola	4.3
Gladwin	10.2	Oscoda	15.2
Gogebic	-	Otsego	2.4
Grand Traverse	4.5	Ottawa	2.7
Gratiot	8.9	Presque Isle	5.0
Hillsdale	8.6	Roscommon	5.3
Houghton	8.2	Saginaw	21.8 *
Huron	8.0	St Clair	12.7
Ingham	12.6	St Joseph	6.5
Ionia	3.1	Sanilac	8.0
Iosco	4.0	Schoolcraft	-
Iron	-	Shiawassee	5.7
Isabella	6.0	Tuscola	9.7
Jackson	6.5	Van Buren	4.8
Kalamazoo	5.7	Washtenaw	5.7
Kalkaska	3.6	Wayne	23.0 *
Kent	5.8	Wexford	7.4
Keweenaw	-	**State of Michigan**	**11.1**

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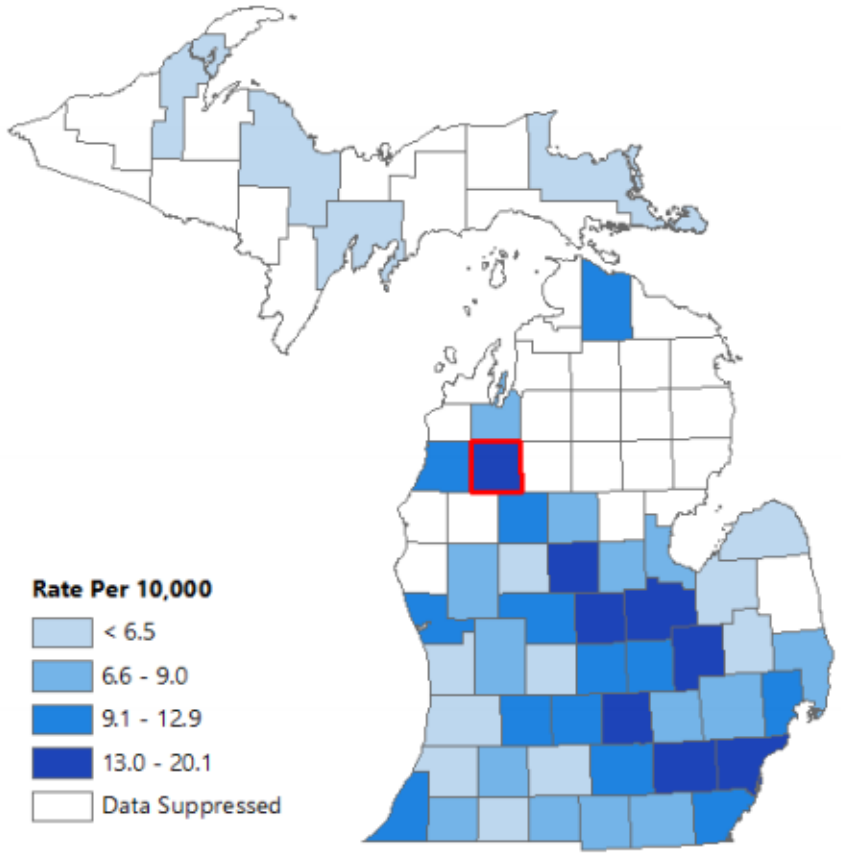
Prevalence of Asthma in Michigan– Child Hospitalizations



Data Notes:
[a] Hospitalization data taken from the 2010-2014 Michigan Inpatient Database. [b] Rates are age-adjusted to the 2000 US Standard Population. [c] County rate suppressed if hospitalization count < 20. [d] Counties defined as outliers (see page 2) are outlined in red on the map and indicated by an asterisk in the table.

Age-Adjusted Rates [a,b] (per 10,000) of Asthma Hospitalizations Among Children (Aged <18) [c,d]

County [d]	Rate	County [d]	Rate
Alcona	-	Lake	-
Alger	-	Lapeer	5.8
Allegan	4.8	Leelanau	-
Alpena	-	Lenawee	7.2
Antrim	-	Livingston	7.8
Arenac	-	Luce	-
Baraga	-	Mackinac	-
Barry	9.1	Macomb	9.3
Bay	8.6	Manistee	9.4
Benzie	-	Marquette	5.5
Berrien	10.2	Mason	-
Branch	7.7	Mecosta	4.9
Calhoun	6.0	Menominee	-
Cass	7.0	Midland	7.6
Charlevoix	-	Missaukee	-
Cheboygan	11.0	Monroe	9.3
Chippewa	6.0	Montcalm	11.0
Clare	7.9	Montmorency	-
Clinton	10.9	Muskegon	11.1
Crawford	-	Newaygo	7.7
Delta	5.4	Oakland	8.9
Dickinson	-	Oceana	-
Eaton	12.9	Ogemaw	-
Emmet	-	Ontonagon	-
Genesee	14.2	Osceola	10.4
Gladwin	-	Oscoda	-
Gogebic	-	Otsego	-
Grand Traverse	7.4	Ottawa	3.9
Gratiot	17.3	Presque Isle	-
Hillsdale	6.7	Roscommon	-
Houghton	6.0	Saginaw	14.3
Huron	6.4	St Clair	7.7
Ingham	16.7	St Joseph	3.9
Ionia	5.2	Sanilac	-
Iosco	-	Schoolcraft	-
Iron	-	Shiawassee	9.8
Isabella	17.5	Tuscola	4.4
Jackson	11.4	Van Buren	6.0
Kalamazoo	7.9	Washtenaw	17.3
Kalkaska	-	Wayne	17.7
Kent	8.0	Wexford	20.1 *
Keweenaw	-	**State of Michigan**	**10.9**

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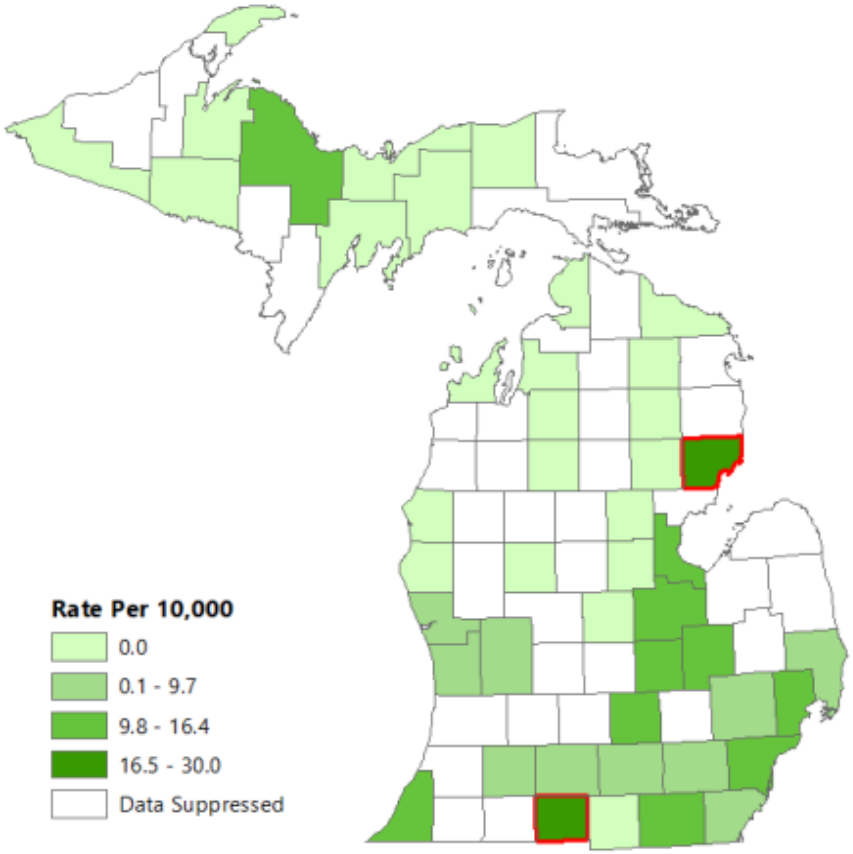
Prevalence of Asthma in Michigan– Mortality



Data Notes:
[a] Hospitalization data taken from the 2010-2014 Michigan Inpatient Database and includes both adult and children asthma mortality combined. [b] Rates are age-adjusted to the 2000 US Standard Population. [c] County rate suppressed if mortality count < 5. [d] Counties defined as outliers (see page 2) are outlined in red on the map and indicated by an asterisk in the table.

Age-Adjusted Rates [a,b] (per 10,000) of Asthma Mortality [c, d]

County *	Rate	County *	Rate
Alcona	-	Lake	-
Alger	0.0	Lapeer	-
Allegan	-	Leelanau	0.0
Alpena	-	Lenawee	10.9
Antrim	0.0	Livingston	-
Arenac	-	Luce	0.0
Baraga	0.0	Mackinac	-
Barry	-	Macomb	11.7
Bay	11.2	Manistee	-
Benzie	-	Marquette	13.1
Berrien	12.7	Mason	0.0
Branch	24.1 *	Mecosta	0.0
Calhoun	5.8	Menominee	-
Cass	-	Midland	0.0
Charlevoix	-	Missaukee	0.0
Cheboygan	-	Monroe	9.2
Chippewa	-	Montcalm	-
Clare	-	Montmorency	0.0
Clinton	-	Muskegon	5.0
Crawford	-	Newaygo	-
Delta	0.0	Oakland	9.6
Dickinson	-	Oceana	0.0
Eaton	-	Ogemaw	0.0
Emmet	0.0	Ontonagon	-
Genesee	11.7	Osceola	-
Gladwin	0.0	Oscoda	0.0
Gogebic	0.0	Otsego	-
Grand Traverse	-	Ottawa	6.7
Gratiot	0.0	Presque Isle	0.0
Hillsdale	0.0	Roscommon	-
Houghton	-	Saginaw	11.9
Huron	-	St Clair	-
Ingham	11.7	St Joseph	0.0
Ionia	-	Sanilac	16.3
Iosco	29.5 *	Schoolcraft	7.5
Iron	0.0	Shiawassee	-
Isabella	-	Tuscola	-
Jackson	6.3	Van Buren	-
Kalamazoo	7.9	Washtenaw	6.6
Kalkaska	0.0	Wayne	16.0
Kent	6.2	Wexford	-
Keweenaw	0.0	**State of Michigan**	9.8

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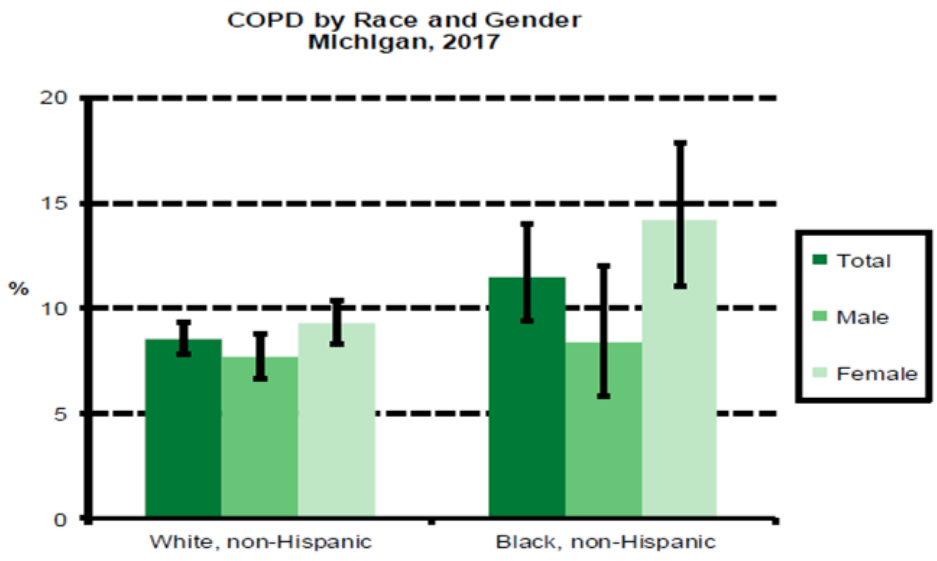
Prevalence of COPD in Michigan



BRFFS Survey 2017

Table 2. Prevalence of COPD among Michigan Adults by Selected Chronic Conditions and Health Behaviors, 2011 Michigan BRFS

	%	95% CI
Total	**8.0**	**(7.3-8.7)**
Current Asthma		
Yes	28.1	(24.4-32.3)
No	5.7	(5.1-6.4)
Ever Told Diabetes		
Yes	14.7	(12.3-17.5)
No	7.2	(6.5-8.0)
Ever Told Cardiovascular Disease		
Yes	22.9	(19.7-26.4)
No	6.4	(5.7-7.1)
Ever Told Cancer		
Yes	14.3	(12.1-16.8)
No	7.2	(6.4-7.9)
Ever Told Arthritis		
Yes	15.2	(13.6-16.9)
No	4.8	(4.1-5.5)
Cigarette Smoking		
Current	14.8	(12.7-17.2)
Former	10.9	(9.6-12.4)
Never	3.3	(2.8-4.0)
Secondhand Smoke Exposure		
Yes	12.7	(10.1-15.8)
No	6.6	(5.6-7.8)

Fussman C, Wahl R, LyonCallo S. Chronic Obstructive Pulmonary Disease (COPD) Among Michigan Adults. Michigan BRFSS Surveillance Brief. Vol. 7, No. 2. and Genomics Division, Surveillance and Program Evaluation Section, Chronic Disease Epidemiology Unit, April 2013.

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Why Focus on Asthma and COPD in Tandem?

- Both are frequently misdiagnosed
- Common risk factors for poor outcomes
  - Environmental exposures
  - Tobacco use
  - Recurrent exacerbations that result in accelerated lung function decline
- Inappropriate management
  - Oral corticosteroid overuse
  - Short acting beta agonist overuse (SABA) over reliance
  - Lack of appropriate phenotyping/no precision medicine approaches
  - Poor asthma/COPD control and lack of adherence to guidelines

The Economic Burden

The high prevalence rates results in **significant economic burden** to the State in terms of **healthcare costs** due to:

- ED visits
- Hospitalizations
- Readmissions
- Loss of productivity per year due to missed days at work and school

The economic burden of asthma in the **United States** is estimated at more than **$80 billion per year.**

The economic burden of asthma in **Michigan** is estimated at **~$3 billion per year.**

Tursynbek Nurmagambetov, Olga Khavjou, Louise Murphy & Diane Orenstein (2017) State-level medical and absenteeism cost of asthma in the United States, Journal of Asthma, 54:4, 357-370, DOI: 10.1080/02770903.2016.1218013

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PO/INHALE Partnership

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How is INHALE Partnering with Physician Organizations?

Physician Organizations:

- 15 PO's Enrolled for Year 1
  - They will recruit practices
    - Specialty:
      - Pediatric Pulmonary
      - Adult Pulmonary
      - Allergy
    - Primary Care Providers
      - Adult/Family/Pediatrics
  - Share clinical data through MIHIN
  - Have access to a Clinical Dashboard:
    - PO level data
    - Practice level data
    - Patient level data
  - Commitment to sharing best-practices and help shape future work- committees etc.

INHALE:

- Guideline-based: GINA 2022 focused
- Educational opportunities:
  - Learning management platform
    - Repository for educational materials
    - Training modules
  - Specialists commit to help train primary care
  - Development of educational materials
- Data analysis
- Quality Improvement guidance
- Monetary support and incentives through BCBSM (VBR).

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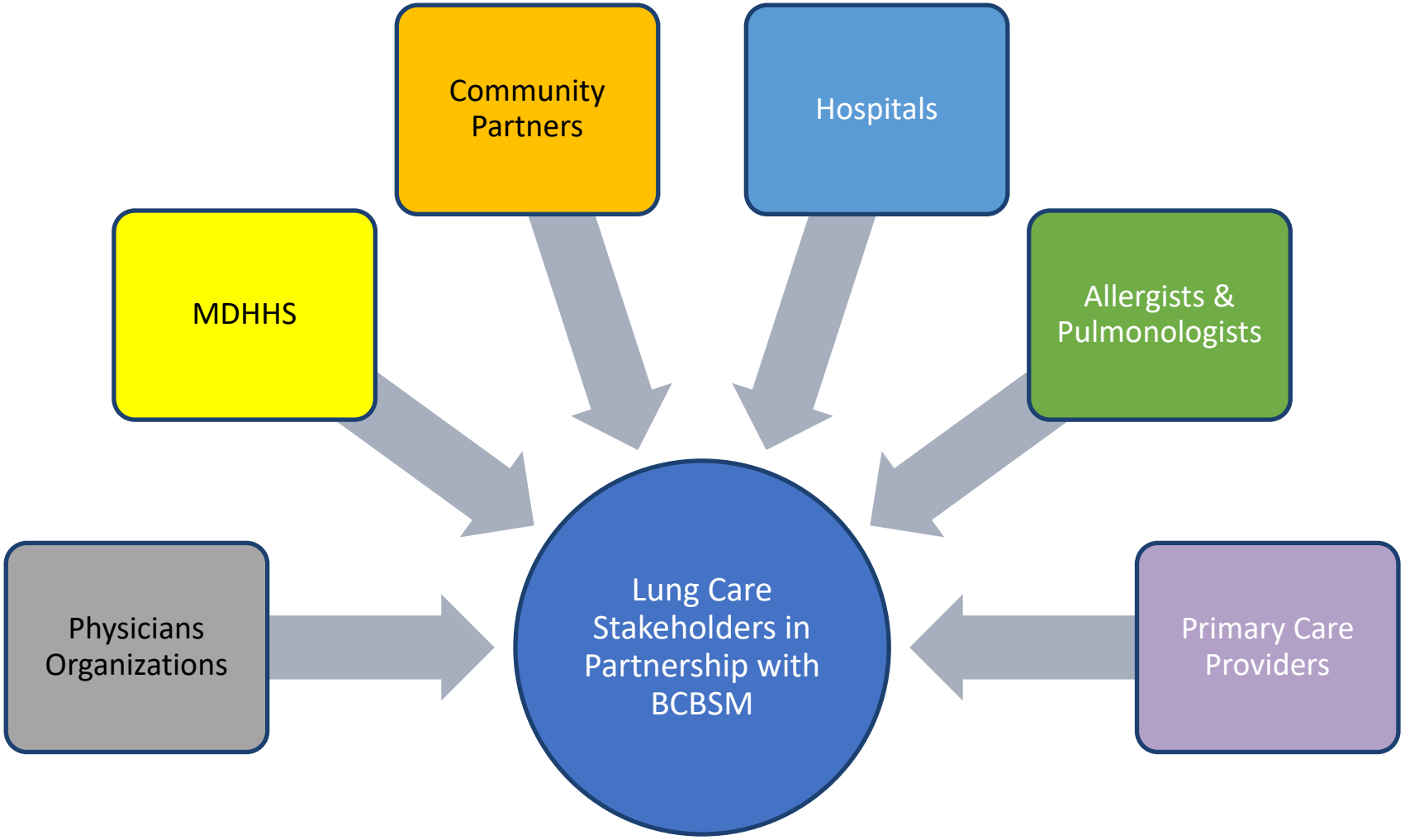
Key Stakeholder Engagement



QI Approach Process

Through Consensus Building…

Identify the prevalence of uncontrolled asthma and COPD in the state of Michigan

Increase compliance with guideline recommended assessments of control

Improve quality of care based on adherence to guidelines

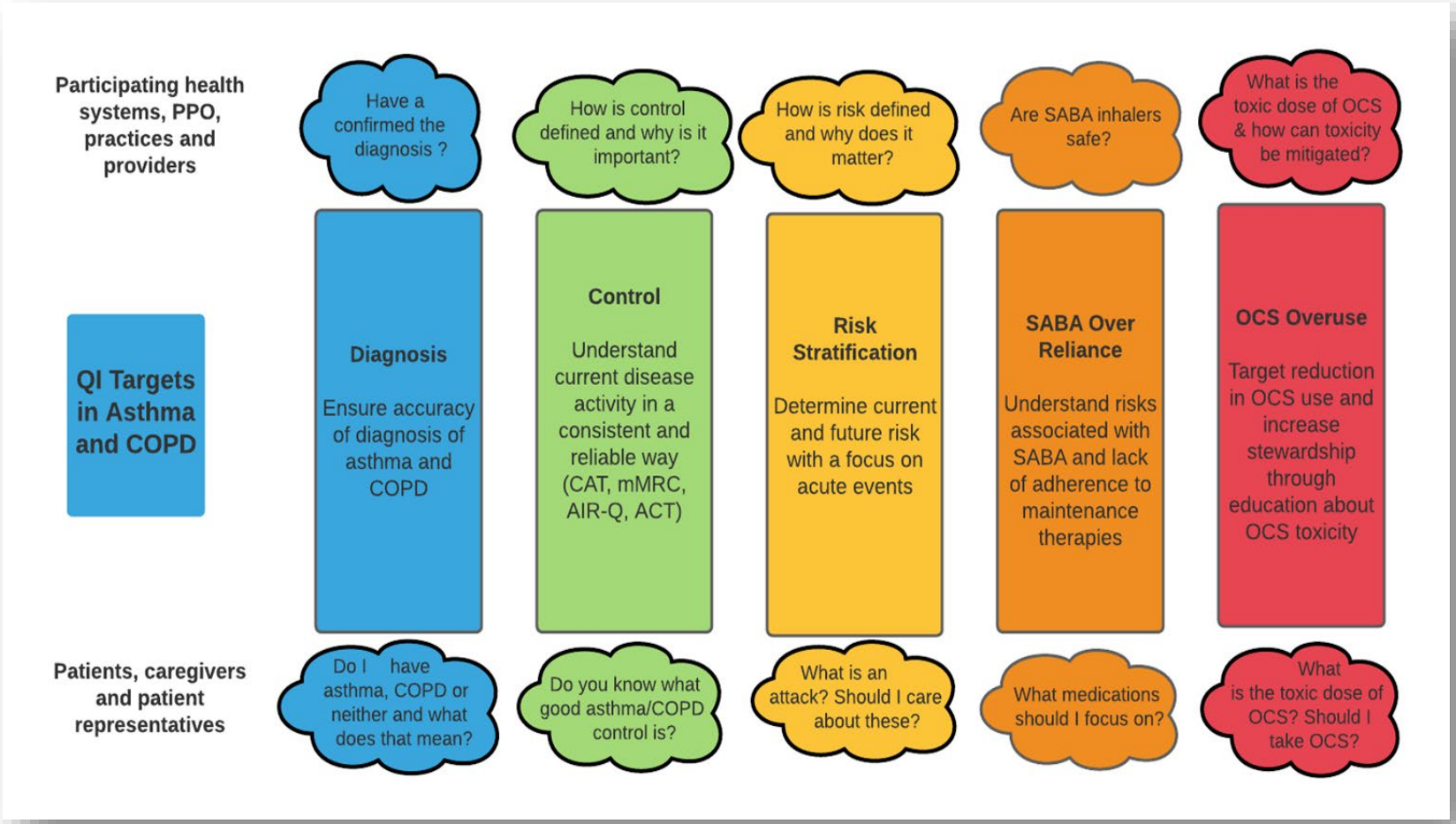
Increase knowledge of phenotypic characteristics of asthma and COPD

Increase tobacco cessation counseling and interventions

(In collaboration with MBOM)

Overarching Goals

CQI Targets in Asthma and COPD



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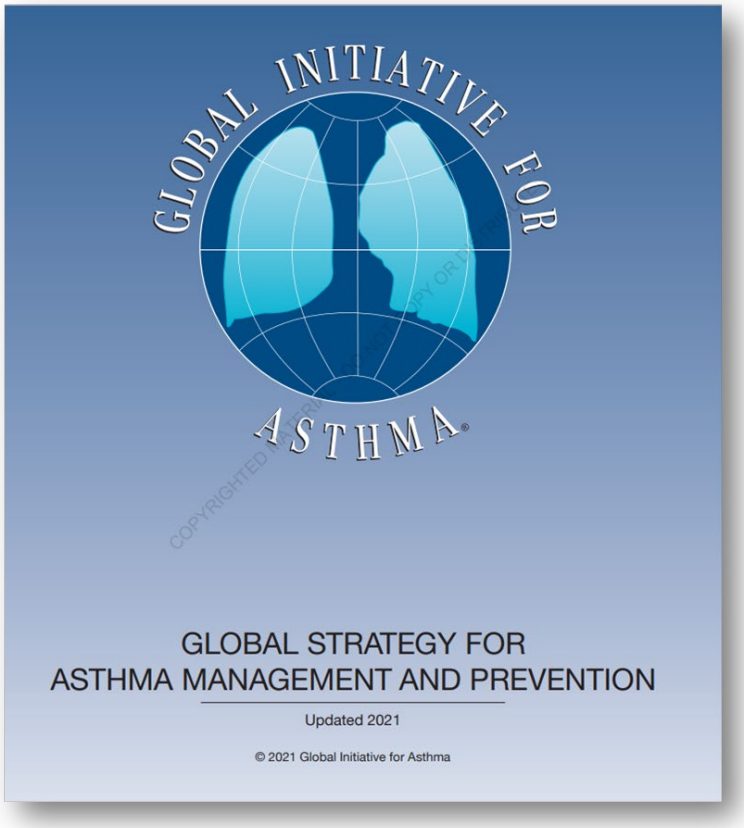
Goal 1:Improve Accurate Diagnosis of Asthma and COPD

Lung function measures and markers of inflammation are essential hallmarks of disease severity and precision medicine approaches to care.

<u>Targets:</u>

- Increase utilization of spirometry for the diagnosis of Asthma and COPD.
- Increase utilization of IgE and eosinophil testing in both Asthma and COPD.



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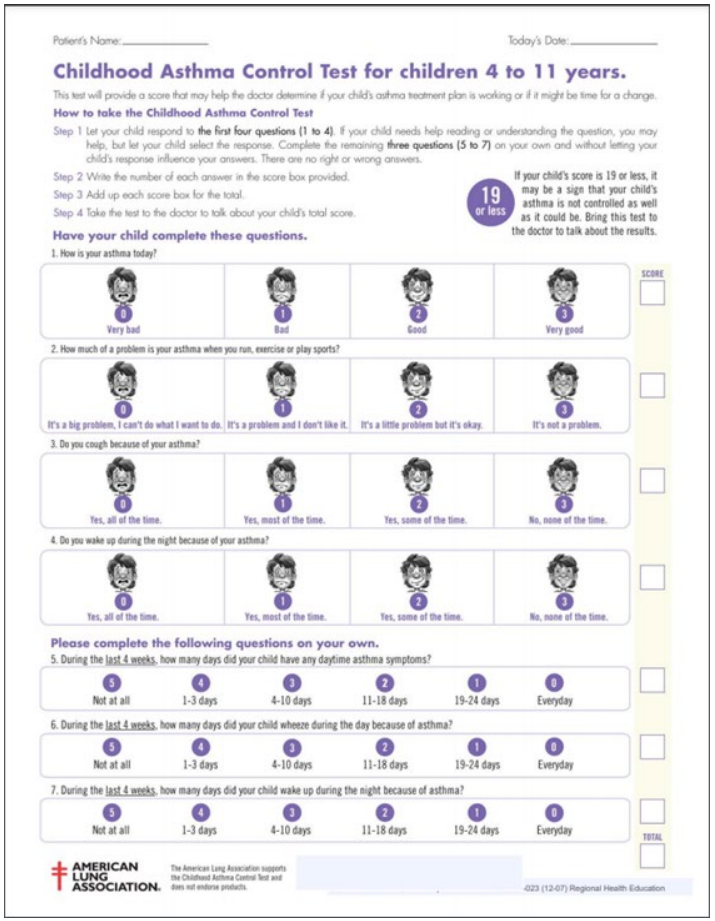
Goal 2: Prioritize Consistent Documentation and Understanding of Disease Control Measures

Both clinicians and patients have a poor understanding of whether a given patients disease is controlled.

<u>Target:</u>

Increase utilization of validated patient reported outcomes for both Asthma and COPD.

- ACT
- AIRQ
- CAT
- mMRC



Patient's Name:_____ Today's Date:_____

Childhood Asthma Control Test for children 4 to 11 years.

This test will provide a score that may help the doctor determine if your child's asthma treatment plan is working or if it might be time for a change.

How to take the Childhood Asthma Control Test

Step 1 Let your child respond to **the first four questions (1 to 4)**. If your child needs help reading or understanding the question, you may help, but let your child select the response. Complete the remaining **three questions (5 to 7)** on your own and without letting your child's response influence your answers. There are no right or wrong answers.

Step 2 Write the number of each answer in the score box provided.

Step 3 Add up each score box for the total.

Step 4 Take the test to the doctor to talk about your child's total score.

19 or less

If your child's score is 19 or less, it may be a sign that your child's asthma is not controlled as well as it could be. Bring this test to the doctor to talk about the results.

Have your child complete these questions.

1. How is your asthma today?

0	1	2	3	SCORE
Very bad	Bad	Good	Very good	

2. How much of a problem is your asthma when you run, exercise or play sports?

0	1	2	3	
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?

0	1	2	3	
Yes, all of 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?

0	1	2	3	
Yes, all of the time.	Yes, most of the time.	Yes, some of the time.	No, none of the time.	

Please complete the following questions on your own.

5. During the last 4 weeks, how many days did your child have any daytime asthma symptoms?

5	4	3	2	1	0	
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?

5	4	3	2	1	0	
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?

5	4	3	2	1	0	
Not at all	1-3 days	4-10 days	11-18 days	19-24 days	Everyday	TOTAL

AMERICAN LUNG ASSOCIATION.

The American Lung Association supports the Childhood Asthma Control Test and does not endorse products.

023 (12-07) Regional Health Education

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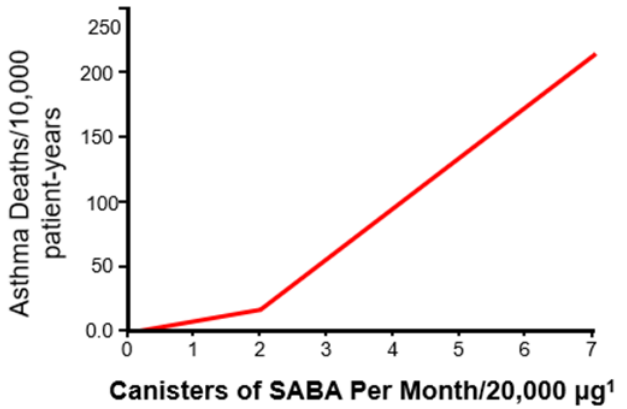
Goal 3: Prioritize Consistent Documentation of Risk

Risk stratification is inconsistently performed, and exacerbation frequency is underestimated

Targets:

- Documentation of exacerbations requiring systemic steroids, ER/urgent care visits and hospitalizations should occur at each visit coded as Asthma or COPD.
- Development of EMR and claims-based exacerbation definitions to assist with automated risk stratification.
- Exacerbations will be redefined as high-risk events where urgent action is required to mitigate future exacerbations.



Mortality risk escalates rapidly when >1-2 SABA canisters are used per month[1]

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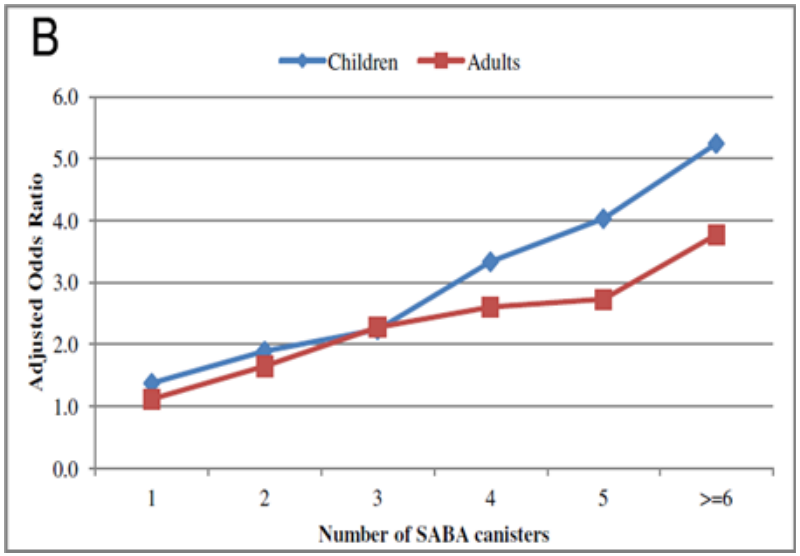
Goal 4: Enable the Identification of SABA Overuse

SABA overuse and over reliance is a common problem and increased SABA use is associated with increased exacerbations and poor outcomes

≥3 canisters/year
(average 1.6 puffs/day)
is associated with doubled risk of ED visit



Nwaru et al, ERJ 2021 (n=365,324)

Targets:

- Use claims data to develop reports on SABA prescription fill rates and track these over time.
- Remote patient monitoring (RPM) will be used to track adherence and device technique in order to better predict exacerbations.
- Promote documentation of SABA use in the EMR.
- Clinicians and patients will be educated on SABA overuse and risks with a goal of reducing overuse and associated poor outcomes.

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Goal 5: Mitigation of Oral Corticosteroid Overuse

Oral corticosteroids are frequently prescribed for asthma and COPD

Targets:

- Promote documentation and tracking of oral corticosteroid tapers in the preceding 12 months.
- Develop tool that translates prescription fills into mg of steroids which can be entered into a toxicity indicator.
- Develop patient and provider education materials on OCS toxicity
- Screening tools for evidence of OCS toxicity

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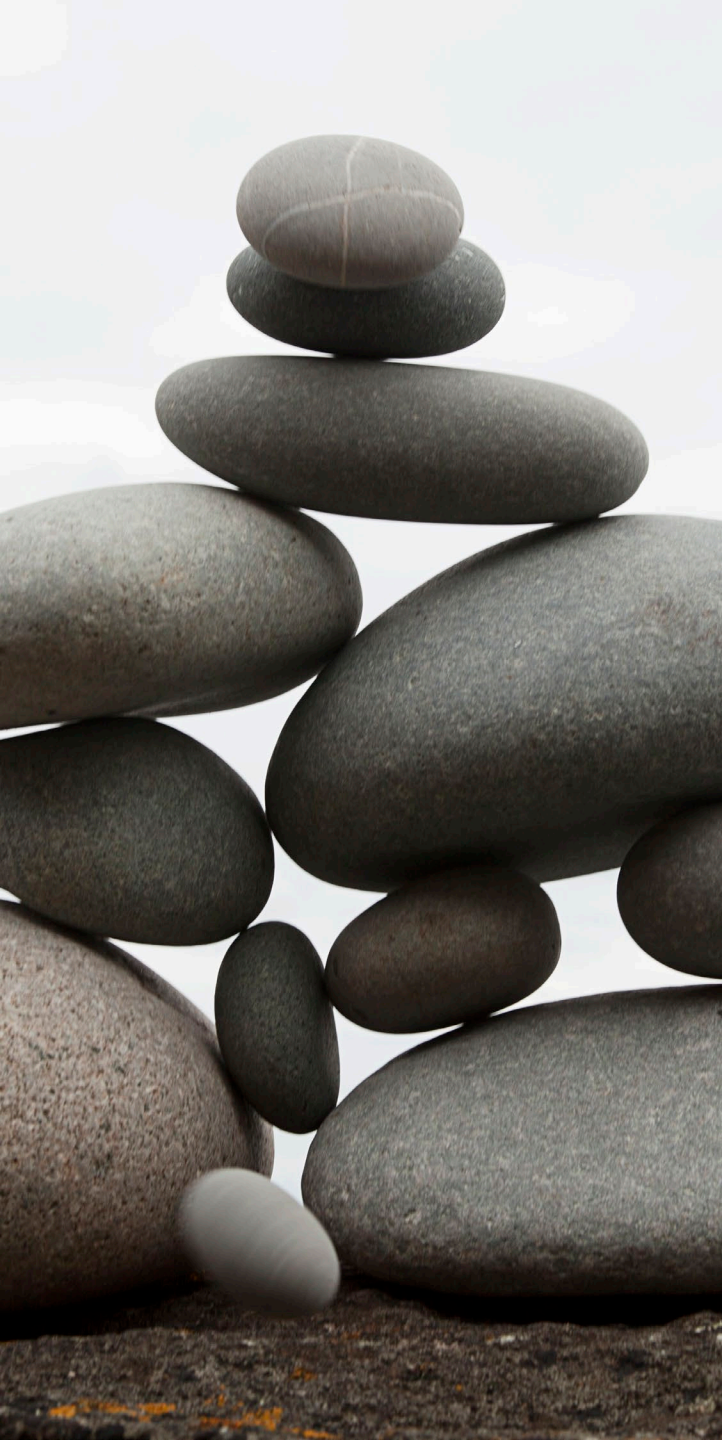

Why is OCS Overuse Bad?

Cumulative LIFETIME dose of 1 gram of OCS significantly increases the risk of adverse outcomes:

4 courses of OCS is equivalent to1 gram

- Cerebrovascular accident
- Heart Failure
- Myocardial Infarction
- Cardio-cerebrovascular disease
- Type 2 Diabetes
- Cataracts and Glaucoma
- Osteoporosis diagnosis/Fractures
- Pneumonia
- Sleep Apnea
- Depression
- Peptic Ulcer
- Renal Impairment

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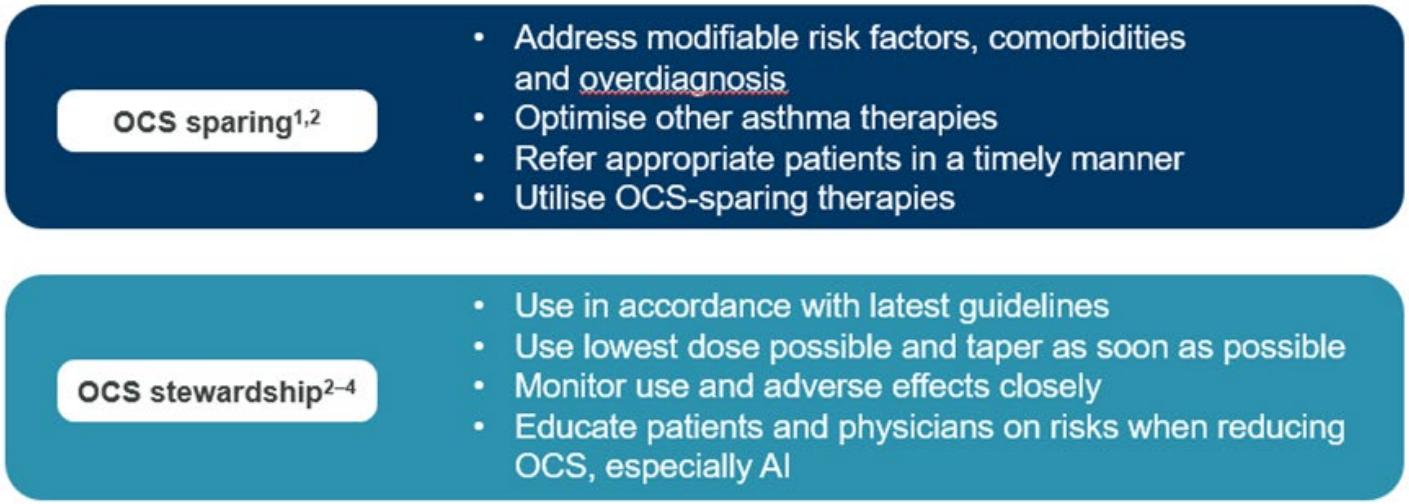
Approaches to Address OCS Overuse



AI, adrenal insufficiency; OCS, oral corticosteroid(s)

1. The Global Initiative for Asthma. Pocket Guide for Asthma Management and Prevention 2019. Available from: https://ginasthma.org/wp-content/uploads/2019/04/GINA-2019-main-Pocket-Guide-wms.pdf (Accessed 15 April 2019); 2. Price D, et al. J Asthma Allergy 2017;10:209–223; 3. Volmer T, et al. Eur Respir J 2018;52:pii: 1800703; 4. Oral Corticosteroid Stewardship Statement. November 2018. Available from: https://foundation.chestnet.org/oral-corticosteroids-stewardship-statement/ (Accessed 22 March 2019)

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Goal 6: Patient education and empowerment

Patients are unaware of what good asthma and COPD control is and how to reduce risks and avoid OCS

<u>Targets:</u>

Develop materials and social media campaigns to educate providers and patients on:

- SABA overuse and risks
- Oral steroids overuse and education around toxicity
- What good asthma/COPD control look like.

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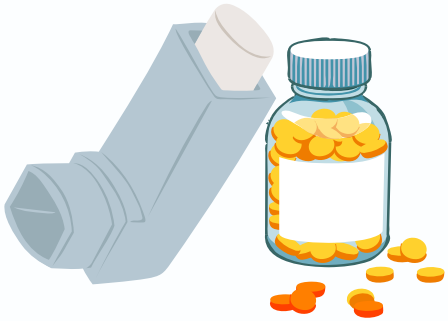
INITIAL KEY CLINICAL AREAS OF FOCUS
Claims data information for:

SPIROMETRY
Appropriate use of spirometry as a tool to accurately diagnose both Asthma and COPD.

INHALER EDUCATION
Education for both providers and patients on inhaler use through our learning platform; utilization of the CPT code 94664 for inhaler education.

HOSPITALIZATION, ED, UC
Identification of patients that require hospitalization, an ED visit, or UC visit due to poorly controlled asthma or COPD.



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Leveraging data science and machine-learning

- Identify patients at **high risk for poor outcomes** that can be targeted for specific interventions.
- Identify patients who are **misdiagnosed** who are likely getting **suboptimal treatment**.
- Use **best practices** in algorithmic development and validation with careful attention paid to risks of **bias**.
- **Dissect racial bias** in an algorithm used to manage the health of populations.

https://science.sciencemag.org/content/366/6464/447

How we can join forces to improve care

- Physician Organizations
  - Year 1 participants
  - Future recruitment
- Professional Organizations
- Providers
- Patient advocates/community health workers
- Insurers

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