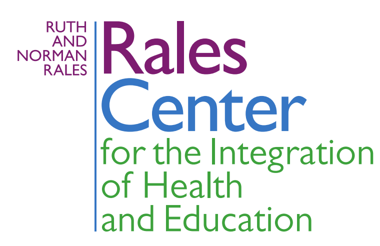
Improving Pediatric Asthma Control through Community Partnerships

Presented by: Margret Schnitzer, MSW and Devki Gami, MD MA

Rales Center Medical Director: Kate Connor MD, MSPH



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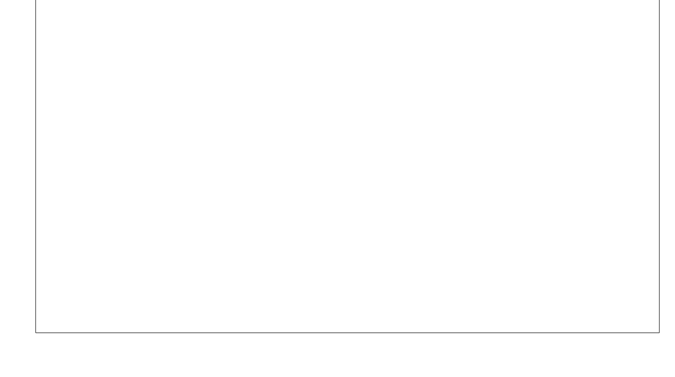

Through Joint Accreditation, credits are also available under the following bodies:

- American Academy of PAs (AAPA)
- American Dental Association’s Continuing Education Recognition Program (ADA CERP)
- American Psychological Association (APA)
- Association of Social Work Boards (ASWB)
- Commission on Dietetic Registration (CDR)

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- With respect to the following presentation, there have been no relevant (direct or indirect) financial relationship between the presenters/activity planners and any ineligible company in the past 24 months which would be considered a relevant financial relationship.
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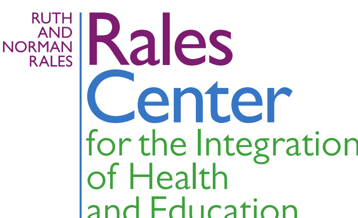
Objective

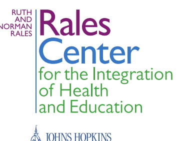
- The participant will recognize the benefits of a partnership between state/community asthma programs and school-based health centers to improve outreach to families of children with asthma.

https://clinicalscholarsnli.org/community-impact/toolkit-for-breathe-equity-in-asthma-treatment-in-healthcare-and-education/

The Rales Health Center

A project of the Johns Hopkins Rales Center for the Integration of Health and Education





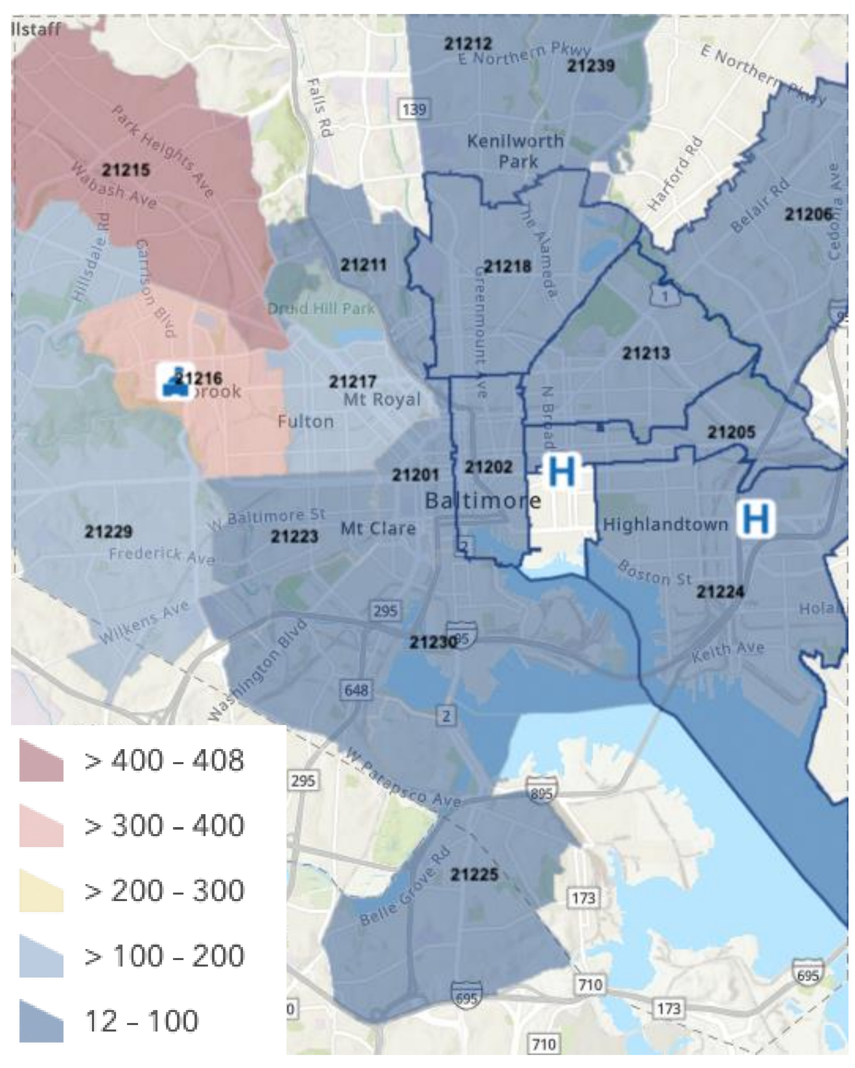
Mission

The mission of the Rales Health Center is to support health and educational success for students at KIPP Baltimore, in partnership with the school and community, through the design and delivery of integrated, compassionate, evidence-informed school health services, school-based healthcare, and school wellness programs. Through our work we strive to empower students, staff, and families to lead their healthiest, most joy-filled lives, and to remove health issues as barriers to learning. We share best practices and advocate for innovative approaches like ours to promote health and educational equity at KIPP Baltimore, throughout Baltimore City, and nationwide.

KIPP: Baltimore

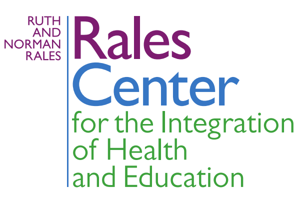
- 2 public charter schools
- Elementary/middle (PK-8)
- 1,420 students
- Enrolled by lottery from around the city

Geographic distribution of KIPP families

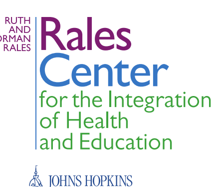


Rales Health Center

- Robust, expanded health services
- Full-service SBHC
  - Acute, preventive, chronic disease management
  - Onsite lab, prescription delivery
- Case management and resource linkage



Pediatric Asthma in Baltimore: A Resident Physician's Perspective



- Asthma affects nearly 20% of children in Baltimore City and more than **30% of students at KIPP Baltimore**.
- Asthma is a **chronic disease** of the lungs caused by inflammation and narrowing of the airways.
- **Management of persistent asthma requires use of a daily controller medication**, often twice a day.
- Pediatric patients must also remember to use a **spacer device** to ensure correct delivery of the inhaled medication.
- In our clinic, emergency department, and inpatient service, we see many patients with asthma who **miss multiple days of school** when they have an asthma exacerbation.
- Asthma is one of the **leading causes of school absenteeism** in the United States.

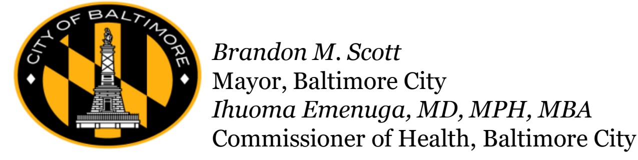
https://clinicalscholarsnli.org/community-impact/toolkit-for-breathe-equity-in-asthma-treatment-in-healthcare-and-education/
https://ralescenter.hopkinschildrens.org/wp-content/uploads/2021/06/Final-Asthma-Report_Revised_3.2021.pdf

Disparities in Asthma

The burden of asthma is heaviest on minority groups and lower income families.[1]

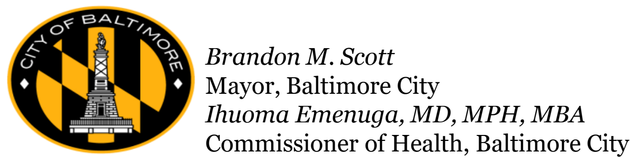
- Current Asthma
  - Black children: 14.2%
  - White children: 5.6%
- Mortality (0-14 years of age, 2019)
  - Black children: 0.8/100,000
  - White children: 0.1/100,000
- Hospital Admissions (2-17 years of age, 2017)
  - Black children: 216.5/100,000
  - White children: 41.9/100,000

[1]https://minorityhealth.hhs.gov/omh/browse.aspx?lvl=4&lvlid=15

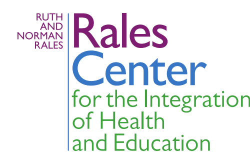


Disparities in Asthma

- Asthma Prevalence
  - 34.4% of high-school students in Baltimore City
  - 26.3% of high-school students in Maryland
  - 22.8% of high-school students nationwide
  - Lower income zip codes have higher ER asthma diagnosis rates
  - Zip codes with more vacant houses = higher ER asthma diagnosis rate



Rales Health Center Asthma Program



- **Identified as a critical need by school and families.**
- **Asthma accounted for up to 18% of absenteeism.** *Johnson SB, Spin P, Connolly F, Stein M, Cheng TL, Connor K. Prev Chronic Dis. 2019 Oct 31;16:E148.*
- **Students with asthma had poorer performance on standardized tests over three years.** *Senter JP, Smith BM, Prichett LM, Connor KA, Johnson SB. Acad Pediatr. 2021 Aug;21(6):1009-1017.*

Rales Health Center Asthma Program

- **Universal asthma education:** teachers, students, families
- **Education groups for students with asthma:** Open Airways for Schools
- **Early identification** of students with asthma risk (previously unidentified, uncontrolled)
- Nurse **case management** and **care coordination**
- **Guidelines-based** asthma care

Public health professionals can use EXHALE to help people with asthma achieve better health

What are the EXHALE strategies?

CDC, 2020

Education on asthma self-management

X-tinguishing smoking and exposure to secondhand smoke

Home visits for trigger reduction and asthma self-management education

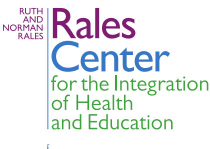
Achievement of guidelines-based medical management

Linkages and coordination of care across settings

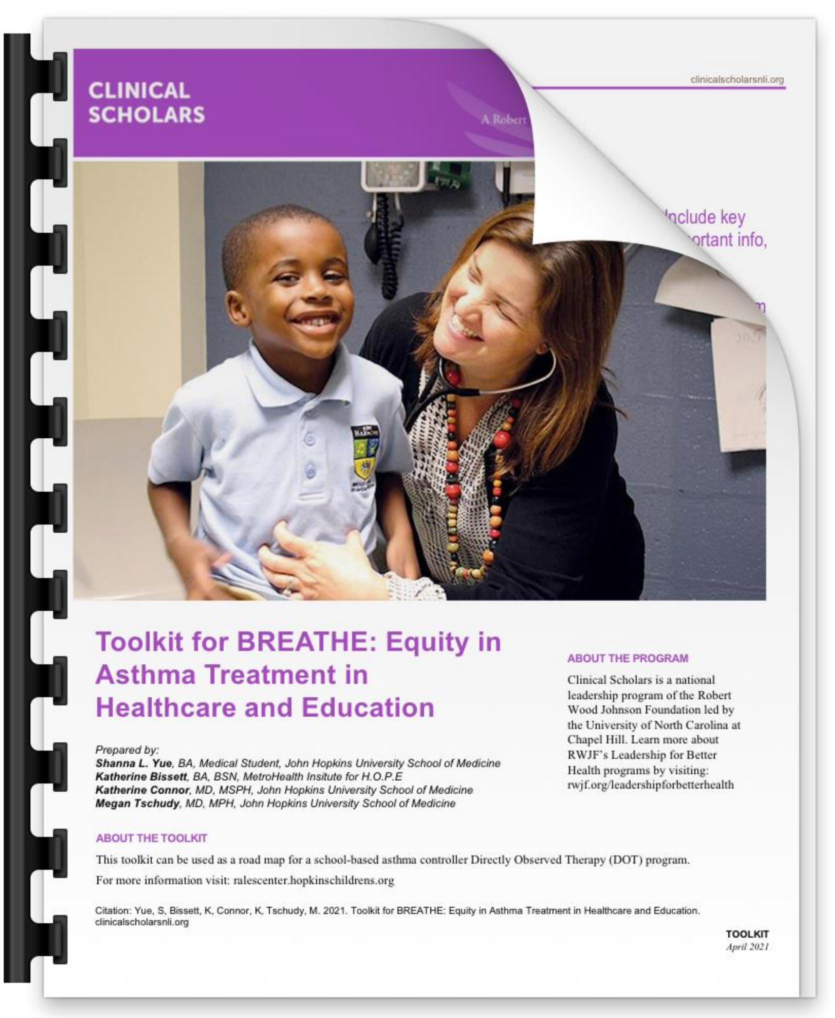
Environmental policies or best practices to reduce asthma triggers from indoor, outdoor, or occupational sources

https://www.cdc.gov/asthma/exhale/documents/EXHALE-Guide-for-Public-Health-Professionals-508.pdf

Rales Health Center Asthma Program



- **Rales Asthma Prioritization System (RAPS)** *Rabner M, Bissett K, Johnson SB, Connor KA. J Sch Health. 2020 Jul;90(7):538-544.*
  - School-wide asthma screening
  - 49% some asthma-like symptoms
  - 21% high risk of uncontrolled asthma
  - Stratified into follow-up priority groups: rescue med, absenteeism
- **SBHC medication management**, Rx delivery
- **Directly observed controller therapy**



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Toolkit for BREATHE: Equity in Asthma Treatment in Healthcare and Education

Prepared by:
Shanna L. Yue, BA, Medical Student, John Hopkins University School of Medicine
Katherine Bissett, BA, BSN, MetroHealth Insitute for H.O.P.E
Katherine Connor, MD, MSPH, John Hopkins University School of Medicine
Megan Tschudy, MD, MPH, John Hopkins University School of Medicine

ABOUT THE PROGRAM

Clinical Scholars is a national leadership program of the Robert Wood Johnson Foundation led by the University of North Carolina at Chapel Hill. Learn more about RWJF's Leadership for Better Health programs by visiting: rwjf.org/leadershipforbetterhealth

ABOUT THE TOOLKIT

This toolkit can be used as a road map for a school-based asthma controller Directly Observed Therapy (DOT) program.
For more information visit: ralescenter.hopkinschildrens.org

Citation: Yue, S, Bissett, K, Connor, K, Tschudy, M. 2021. Toolkit for BREATHE: Equity in Asthma Treatment in Healthcare and Education. clinicalscholarsnli.org

TOOLKIT
April 2021

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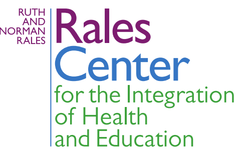
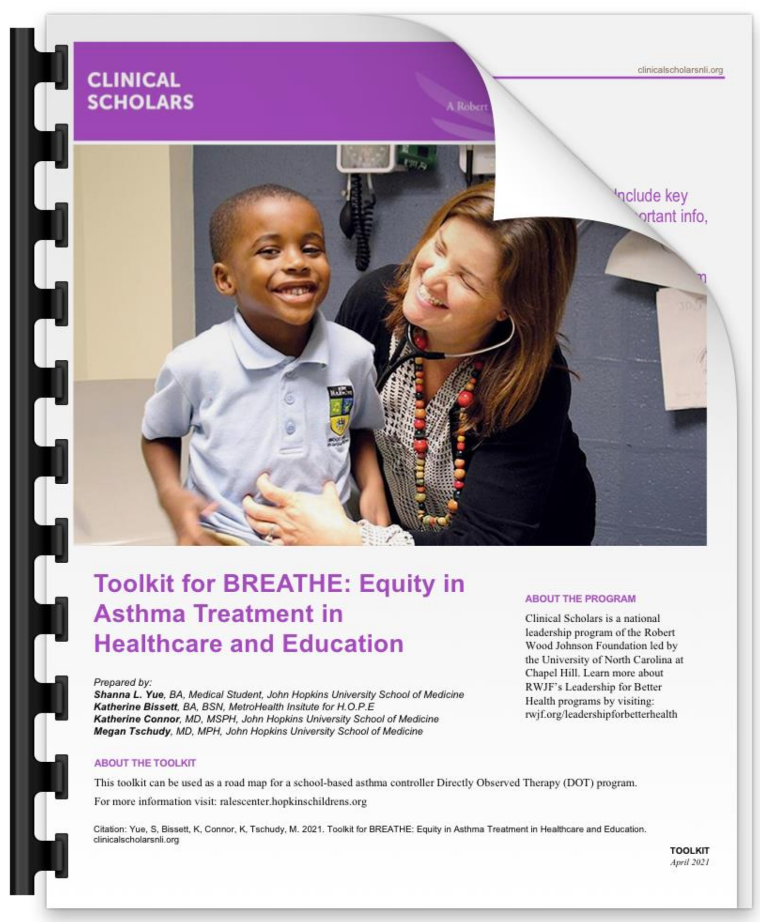
Directly Observed Controller Therapy



- Ensures a child is receiving daily asthma medication.
- DOT team at Rales: pediatrician, school nurses, nurse practitioner, certified medication technician.
- Can lead to improved health and education outcomes, especially if the method of medication delivery prioritizes avoiding missed seat time.
- At the RHC, this is accomplished by giving medications at arrival or during lunchtime.



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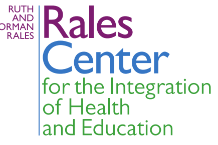
RHC Asthma Program Impacts



In year 4, SBHC utilization declined 23% from year 3 due to fewer acute asthma visits.

Unscheduled albuterol use decreased by 70% for students in the DOT program.

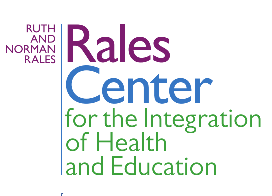
Chronic absenteeism among students with asthma declined by 49% between years 1 and 3

$4.20 net social benefit for every $1 invested in RHC asthma programs.

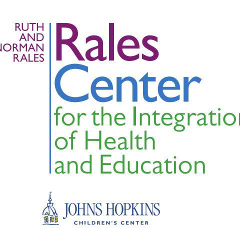
Padula WV, Connor KA, Mueller JM, Hong JC, Velazquez GC, Johnson SB. *Am J Prev Med*. 2018 Jan;54(1):80-86.

RHC Health Impact

- **Improved asthma control**
  - 70% decrease in unscheduled albuterol use for students in DOT
  - Decline in acute asthma SBHC visits
- **Decreased emergency department utilization**
  - Analysis of Maryland Medicaid data: fewer ED visits for students enrolled in the RHC SBHC compared to propensity matched controls
- **Decreased healthcare cost**: $420,800 in cost savings in the first four years due to averted ED visits, primarily related to asthma



Expanding reach through partnership



- Ongoing **barriers to optimal asthma control**
  - At home adherence – habits, confirming adequate supplies
  - Environmental triggers
- **COVID-19 pandemic**
  - Decreased in-person access to students
  - Changes in population and individual-level asthma – false sense of security?
- **Expand capacity without increasing budget**
- State public health priorities: Maryland SBHC Program quarterly performance measure on referral to **Community Asthma Programs**

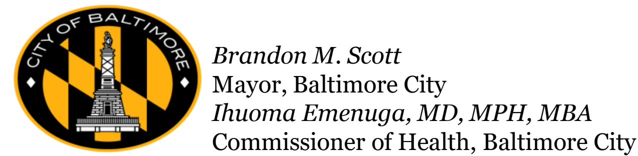
Baltimore City Health Department
Community Asthma Programs

Brandon M. Scott
Mayor, Baltimore City
Ihuoma Emenuga, MD, MPH, MBA
Commissioner of Health, Baltimore City

BCHD's Asthma Home Visiting

1. Childhood Lead Poisoning Prevention and Environmental Case Management program (aka Program 2)
    - Funded by Federal dollars with a state match
    - Collaboration between Medicaid (MA) and Maryland Dept. of Health (MDH)
    - Only children <19yo **receiving or eligible for MA**
    - Currently funded in 11 jurisdictions in Maryland

2. Community Asthma Program (CAP)
    - Funded by MDH – Title V
    - Can serve any child with asthma in the City



BCHD’s Asthma Home Visiting

Referrals:

- Chesapeake Regional Information System for our Patients (CRISP) (Program 2 only)
- Primary care providers
- Emergency departments
- Community outreach
- Partnerships with major hospital centers in Baltimore
- School health suites
- **School based health centers**

BCHD’s Asthma Home Visiting

Programs Provide:

- 3 – 6 in-person and virtual visits
- In-home environmental assessment
- Asthma 101 education including binder for reference
- Connection to primary care provider
- Review of Asthma Action Plan
- Case management
- Referrals and advocacy
- Supplies

BCHD's Asthma Home Visiting

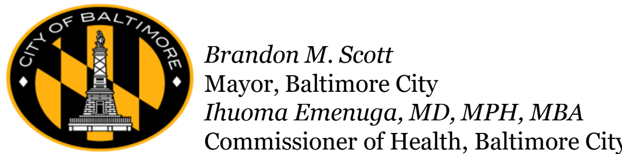
Medical Educational Topics:

- What asthma looks like in the body
- Role of types of medications
- Medication technique
- Asthma control
- Questions to ask your doctor
- Information to give your doctor

BCHD's Asthma Home Visiting

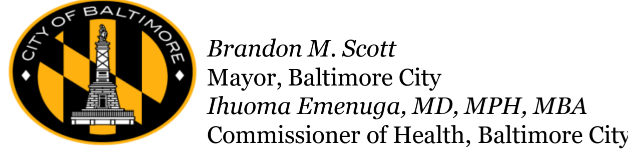
Environmental Educational Topics:

- General safety issues
- Asthma triggers & mitigation techniques
  - Roaches
  - Rodents
  - Mold
  - Dust mites
  - Pollen
  - Smoke
  - Pets
  - Pollution



Environmental Asthma Triggers

Asthma triggers in my house	Why the problem?	What can I do?
Dust Mites	Dust mites are normal, but their droppings can build up on fabrics (like sheets, blankets, and stuffed animals) and worsen asthma. They are also part of house dust.	• Wash bedding at least every 2 weeks • Get rid of carpet and rugs • Use allergen proof covers for pillows, mattresses and box springs • Wash stuffed animals • Vacuum regularly
Roaches	Roach saliva, eggs, droppings, secretions, and skin can cause asthma. Roaches live in groups and like wet, warm areas.	• Use baits/traps • Clean up food spills/crumbs quickly • Avoid eating in different rooms • Take out trash every night • Vacuum regularly • Store food in sealed containers • Clean up dishes after use or put in dishwasher • Put lid on trash can • Contact landlord to repair large gaps, holes in walls, leaky pipes or faucets, etc.
Mice	Mouse urine, hair, saliva, and droppings can trigger asthma. Mice are attracted to water, food, shelter, and warmth, and like to run along walls and in between objects.	
Pets	Animal dander is the dead skin cells from animals, and it sticks to clothes and hands. People with asthma can be allergic to dander from pets in the house.	• Give the pet away if you can • Do not allow pets in the bedroom • Wash hands and change clothes after handling a pet or being in a house with a pet • Bathe the pet often • Vacuum and clean pet sleeping and play areas often
Tobacco Smoke	Smoke exhaled from smokers is called secondhand smoke. If you breathe it in, the smoke irritates your lungs, and can increase your risk for asthma episodes.	• Do not smoke in your home or car • Do not smoke in the presence of your children • Do not let anyone else smoke in the presence of your children • Stop smoking. Call 1-800-QUIT-NOW for free help
Excess Moisture	Too much moisture in your home can increase dust mites, mold, and roaches, and can come from plumbing leaks, poor ventilation, and flooding.	• Use exhaust fans in the kitchen and bathroom (if no fan, keep door open after showering) • Hang clothes outdoors to dry • Fix leaks, call landlord • Circulate fresh air in your home



Brandon M. Scott
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BCHD's Asthma Home Visiting

- Supplies:
  - Allergen proof mattress and pillow covers
  - Green Cleaning kit
  - Integrated Pest Management kit
  - Doormat
  - Medication storage containers
  - HEPA vacuum (as necessary)
  - Air purifier (as necessary)

BCHD’s Asthma Home Visiting

Referrer communication:

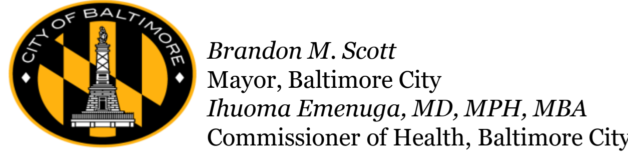
- Report back on outcome of referral

PCP communication:

- Symptoms
- Med use including technique
- In-home triggers
- Goals

Still working on:

- Tailored communication with RALES



Measuring Success

- Childhood Lead Poisoning Prevention and Environmental Case Management program
  - Availability of Asthma Action Plan
  - Decrease in ED visits (42% and 50%)

- Community Asthma Program (CAP)
  - Decrease in symptom days in 2 weeks prior to Home Visit 3 vs. 2 weeks prior to Home Visit 1
  - Decrease in ED visits in 6 months prior to Home Visit 1 vs. time between 1st and 3rd visits.

Common CHW Experiences

- Families who are trying to do the best for their children and who do great with education and support
- Overwhelmed families
- Grandparents caring for grandchildren
- Confusion between controller and quick relief medication – and how to take them
- Concerns with housing quality – both owners and renters
- Reluctance to give up smoking

Thank you for your time! Questions?

Margret Schnitzer

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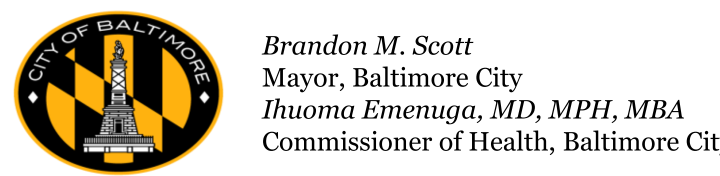
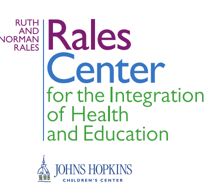
if you have any questions.



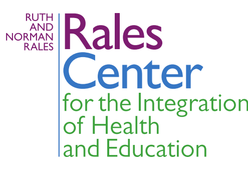
Part 1: Referrals and Quality Improvement

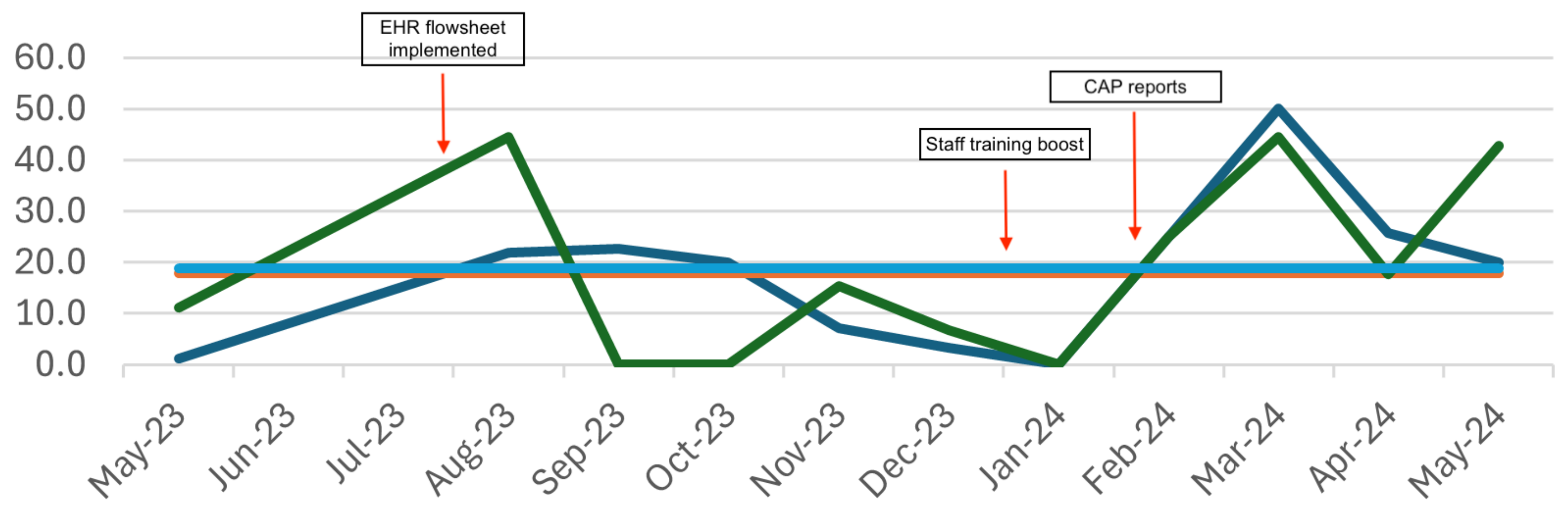


AIM statement: Increase the proportion of visits with a student with a diagnosis of asthma in which a referral was made to the Community Asthma Program by 10% over school year 2023-24.

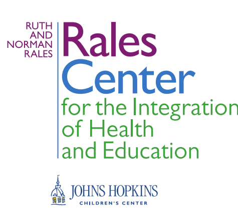
- Development and implementation of a template in Epic (electronic medical record) that populates in the provider note
- Serves as a reminder to refer
- Allows for documentation of status of CAP referrals for each patient with asthma that is seen for a school-based health center visit
- Goal outcome measure: CAP referral documented in Epic

Part 1: Referrals and Quality Improvement





Part 2: Closed Loop Referral System

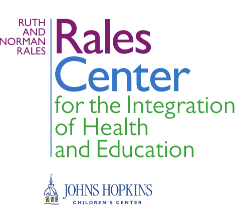


Goal: Receive feedback from the Community Asthma Program on referrals received and their status for the 2023-2024 school year

Initial process:

- Provider identifies SBHC student with asthma who has not yet been referred to CAP and makes referral
- Referral is faxed to CAP Medical Office Assistant
- CAP receives referral and processes it

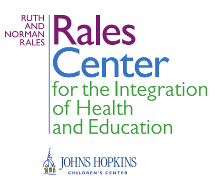
Part 2: Closed Loop Referral System



Initial change idea: Implement an electronic referral system

- Strengths:
  - Easy to access by both organizations
  - Staff not required to operate fax machine so saves time
  - Could be modeled after online early intervention referral system utilized across Maryland
  - Does not require extra documentation if referral is made since it will be electronically stored
- Challenges:
  - Cost
  - Time required to build a new system
  - Ensuring patient information remains secure

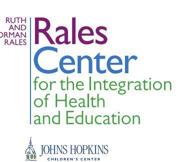
Part 2: Closed Loop Referral System



Proposed change to current process:

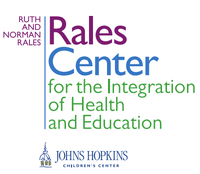
- Provider identifies SBHC student with asthma who has not yet been referred to CAP and makes referral
- Referral is faxed to CAP by Medical Office Assistant
- CAP receives referral and processes it
- **CAP sends SBHC a monthly update of referrals received with current status via secure email**

Closed Loop Referral System Initial Data for 2023-2024



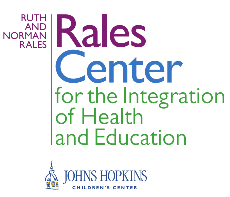
- 17 total patients referred
- **41% of students referred were enrolled** (n=7)
- 41% of students were not reachable (n=7)
- 6% of students not interested in referral (n=1)
- 6% of students still being outreached too (n=1)
- 6% of students referred to a different county (n=1)

Lessons Learned



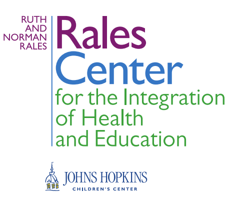
- Change involving multiple organizations requires time and persistence
- SBHC referrals are being received and processed by CAP
- However, a large barrier that remains in completing referrals seems to be family outreach
- Lack of automation of the referral process continues to result in delays of referral status information being relayed back to SBHC
- Community partnerships have benefits for the SBHC and community organization

Next Steps



- Continue to refine the closed loop process to result in more timely updates
- Create a process at SBHC for outreach to families that have been unreachable
- Have SBHC follow up with families that have been enrolled and CAP reporting of services provided/outcomes of families enrolled
- Evaluate outcomes including: asthma control, ED visits, school attendance

Brainstorming Session



- Split up into groups
- Pick a topic or problem relevant to your organization
- Use the brainstorm map to identify potential community partnerships and associated factors
- Report back to the group in 10-15 minutes