Recognizing and Addressing Disparities in Asthma

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**Disclosures**

- Retired from Med Univ S Carolina
- No financial relationships relevant to this talk; consultant for ThermoFisher; Monaghan speakers bureau and consultant
- Will speak about medications as indicated and on-label
- Multiple commonly-used asthma medications are often used in children off-label
- Will identify when medications are off-label or carry FDA warnings
Learning Objectives

Members of the audience will be able to:

• Identify barriers to asthma control in underserved populations
• Understand the impact of social determinants of health on asthma care
• Identify ways to utilize effective communication patterns in all asthma teaching situations
• Identify support services needed to optimize asthma control for the underserved
Introduction
Asthma Burden

• Asthma incidence varies among ethnic groups
• Marked disparities in asthma outcomes exist among minorities – ER, admissions, death
• Multiple social factors make asthma more difficult to control – these MUST be recognized / addressed!
• Overall, asthma is estimated to cost over $80 B/yr
• Underserved populations need extra assistance in a variety of settings
• Access to healthcare required to make the diagnosis
Health Equity

REALITY: One gets more than is needed, while the other gets less than is needed. Thus, a huge disparity is created.

EQUALITY: The assumption is that everyone benefits from the same supports. This is considered to be equal treatment.

EQUITY: Everyone gets the support they need, which produces equity.

JUSTICE: All 3 can see the game without supports or accommodations because the cause(s) of the inequity was addressed. The systemic barrier has been removed.
# Current Asthma Incidence

Nat’l Center for Environ Health, 2016-18*

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<th></th>
<th>All</th>
<th>Child</th>
<th>Adult*</th>
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<td>White, non-Hispanic</td>
<td>8.0%</td>
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<tr>
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<td>13.1%</td>
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<td>13.3%</td>
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* Frequency of tobacco use not reported

*www.CDC.gov/asthma/most_recent_national_asthma_data.htm (2019)*
Asthma Incidence vs. Poverty 2018

Percent

- All 7.7%
- Child < 18 yo 7.5%
- Adult ≥ 18 yo 7.7%

Poverty level

- < 100% poverty threshold* 10.8%
- 100-249% poverty threshold 8.1%
- 250-449% poverty threshold 7.3%
- ≥ 450% poverty threshold 6.5%

*Census bureau standards

www.CDC.gov/asthma/most_recent_national_asthma_data.htm (2019)
Asthma Triggers

• Allergic – nose, skin, eyes, lungs
  – Assess the child and the home (and school)
  – Trees, pet dander, dust mites, mold, pollen, cockroaches

• Non-allergic / intrinsic – viral illnesses, aspiration, GE reflux, obesity

• Irritant – exhaust, smoke, scents

• Exercise – “exercise-induced bronchospasm” vs “asthma triggered by exercise”

• Kids should generally NOT get albuterol before recess or PE

• Full normal exercise / sports should be expected!
Asthma Triggers -- Recognition

• History – when do symptoms appear or worsen?
  – Seasons, activities, locations, other symptoms
• Testing for allergen responses
  – IgE blood testing (total, specific)
  – Skin testing
  – Eosinophil levels
• Irritant exposures – do they affect the child?
• Exercise – what happens when they play hard?
  Has albuterol reduced or prevented the symptoms?
• Colds – symptoms, duration, treatments given
• Nocturnal symptoms – GER? Environment, etc.
Co-morbidities

• Conditions which can worsen asthma if not controlled
• Allergies – seasonal, environmental
• Sinus disease
• Obesity – makes exercise more challenging
• GE Reflux – especially noted with nocturnal symptoms
• Aspiration (from above or below)
• Need to identify and treat these problems to optimize asthma control
Allergic Recognition and Treatment

• Assessment
  – Allergic symptoms more likely cough vs wheeze
  – Simultaneous symptom flares – cough and wheeze

• Avoidance – when offender is known specifically
  – Skin testing, immunocap IgE testing

• Immuno-therapy increasingly available
  – Significant symptoms
  – Major commitment by family, needlephobia

• Treatment of upper airway disease symptoms

• Role of consultant(s)
Asthma Risk

• How likely is an adverse outcome?
• Based on history
• Higher risk suggests need for stronger treatment (and aggressive trigger reduction)
• Hospitalizations
• Intubations
• Steroid courses
• Prevention is key!
• Some patients can’t perceive dyspnea
• Remember -- asthma deaths come from all classes!
Racial / Ethnic Disparities

- Asthma incidence and outcomes vary greatly
- Difficult to separate biologic vs. social disparities (social determinants of health)
- Recognition, determination to give best care to all
- Individualized approaches
- Family must provide the care prescribed -- education and understanding are CRUCIAL!
- Can’t “fix” everything, but addressing barriers helps
- Must COACH every patient and family for best outcome
Factors Contributing to Disparities

Forno E, J Celedon AJRCCM 2012 185:1033-5
Public Housing / Location

• Problematic but variable; now more decentralized
• Common problems
  – Poverty, rental properties, use more income for housing
  – Mold, dust and cockroaches; multi-unit buildings; ETS
• Blacks/Hispanics less likely to use mattress covers*
• Landlord attention – public vs. private
• Other concerns – safety, gangs, walking
• Transportation – private and public
• Availability of health care, 24-hour pharmacies
• Geography – grocery stores, school

*Roy & Wisnivesky Journ Asthma 2010; 47:507-12
Available Healthcare
Medical Homes, Offices, Urgent Care, ERs

• What choices does the family have? (sibs?)
• Locations of offices (ER?); assigned vs. choice
• Hours—routine, acute issues/walk-ins/no-show
• Languages, resources, contact w/ school?
  – Spoken, written, asthma expertise
• After hours management (is there a charge?)
• Follow-up: routinely and after flares
• Pharmacies – location, hours, language, teaching (medications, asthma itself)
**Continuity vs. Urgent Care**

- Perception and availability of medical home
  - Referral to asthma specialists -- availability

- Fragmented care isn’t optimal for chronic illnesses of any type; ER vs. medical home and EHR

- Acute flares as potential teaching points -- “48 hours of panic” -- must utilize that

- Therapy / education about asthma -- language?

- When acutely ill, the patient needs to recognize benefit of medical home, which also needs to be available and helpful

- Timely communication, coordination are crucial!

Treatment Availability

• Managed care formularies
  – Different pockets – pharmacy vs acute care costs

• Indian Health Service core formulary
  – Asthma medications (Singulair, Asmanex, Advair, rescue, Spiriva, prednisone)
  – Smoking cessation products (NRP, bupropion, varenicline)

• Coach how to use devices correctly; read dose counters; use videos and pictures in clinic and take-home

• “Controller” vs “Rescue” – ALWAYS!

• Steroid phobia – need to explain ICS vs oral doses

• The best drug in the world can’t help if it stays in the pharmacy!
Resource Deserts

- Caregiver offices (primary care, specialists)
- Pharmacies (are they open 24-hours?)
- Food stores (including fresh produce)
- Transportation services (where can you go?)
- Urgent care centers (closer than medical home?)
- Schools (bus rides)
- Medicaid and insurance offices
- Conversely, presence of exhaust and ozone
Chicago census tracts -- areas with no pharmacy within ½ mile (1 mile if shaded)
Green – Black communities
Orange – Hispanic communities
Red – integrated communities
Blue – white communities
White – pharmacies available

Remember that this applies to ALL meds!
Documenting Refill Histories

- Parents always SAY they take the medicines regularly and as prescribed
- Pharmacy refill histories disagree
- Non-refills more likely for new prescriptions*
- Average asthma controller refills / yr: Singulair > Advair > Flovent (4.3/3.98/2.29 refills; 78/85/29 d/yr)**
- NaviNet on-line system for Select Health patients

McQuaid et al Pediatrics 2012; 129:e1404
*Vanelli et al Clin Therapeutics 2009; 31:2628-2652
**Stempel et al Resp Medicine 2005; 99:1263-1267
Transportation Limitations

- Expense to own, run, insure a vehicle
- Requirement for driver’s license – unwanted if undocumented
- Limited resources → unreliable vehicle
- Conflicting needs – child for doctor, parent for work
- Distractions, worries in the ER – limits learning
- Unreliable car may limit follow-up from ER
- Geography – pharmacy (hours open)
- Buses go to school, not to medical home/specialist or other necessary spots (Medicaid transportation)
Health Understanding

- Limitations cost an est $106 - 238B annually!
  - mchb.hrsa.gov/research/project_info.asp?ID=81
  - KF Harrington--H Literacy and Peds Asthma Outcomes
- Health Literacy Universal Precautions Toolkit:
  - teach-back method – “What did I tell you to do?”
- Education level – what is “everyday language”?
- Literacy in a foreign language
  - Medication instructions on bottles / inhalers
- Comfort with written materials – education, instructions, prescription, notices sent by mail
- Discomfort saying they didn’t understand
- How can we best communicate… every patient, every time!
“Asthma is as much a disorder of communication as it is of inflammation!”

R. Brown, MD

* * * * *

We MUST communicate effectively not only with the patient / family but with all other caregivers. Everyone uses different words to teach; that may confuse the patient / family.

Don’t use $\geq3$-syllable words!

Continuity is important for understanding!
Health Understanding
Action Plans

• Dr. Gupta’s innovative program and AAPs
• Goal of addressing literacy level – new action plan promotes effective asthma counseling
• Effectiveness through slight modifications
• Availability / languages
• Remember to have AAPs in all potential care sites; use device pictures if possible, point out dose counters and need to monitor adherence
• SAMPRO program with form templates

Ability to Modify Disease Course

- Does the parent think they can modify the disease course?
- What experience do they have changing the course of anything significant?
- Unfortunate things do happen
- Must CHANGE the “powerless victim mentality”
- Must convince patients / parents that what they do (or don’t do) now _does_ matter next week
- Demonstrate your availability and support
Chaotic Lifestyles

• What is most important for you / us today?
  — Safety (avoid violence), food, fun, family, etc.
• Did you remember that appointment or refill?
• Have you had schedules in your existence?
  — If you haven’t worked, you may not
• When health coverage has a link in any way to employment, it will skew comparative outcomes
• Concept of future risk or benefit may be totally lacking (utilize familiarity with acne medicine)
• In SC, 41 % of children live in a single-adult home (10% above the national average).
Supervision / Age of Self - Care

- Single parent ± grandparent (who did we teach to use the device?); parent with two jobs; visitation with other parent (? smoker)
- Must always coach proper device technique
- Remind parents of dose-counters--nag pt weekly
- Urge parents to withhold cell phone or web for every day a teen/pre-teen misses their controller!
- Varying ages of self-care among groups
- Who reads our instructions? Who knows a refill is needed? Who recognizes a flare?
Use of Schools for Care

- Frequent absences; must have current AAP
- Skilled observation – resting, activities
- Telehealth programs; enough meds, spacers
- Nurses, athletic trainers, coaches, asthma team
- Source of care / education; finding new patients
- SAMPRO – School-based Asthma Management Program – aaaaai.org/SAMPRO/toolkit
- Crucial communication – school, family, provider, health plan (case managers)
- Self-carry rescue, provision of controllers?
Dr. Gupta’s Innovative Program
SOAAR Program

- Science & Outcomes of Allergy & Asthma Research
- Concept to utilize students in their school – SMHRT (Student Media-based Health Research Team)
- Location – inner city schools in Chicago
- Key features – research utilizing education, advocacy, resources, interaction among students
- Successes – student enthusiasm, PSAs, posters, fact sheets, musical performances, etc.
- Future – spread to other schools, health centers
- For information go to: SOAAR@northwestern.edu
Asthma Coaching
Your Role in Asthma Care / Coordination

• Asthma education can be done in many settings
• It can be individual or in a group, pt ± family
• Asthma pathobiology, treatment, acute issues
• Device training must be repeated frequently
• “No one would coach football, cheerleading or soccer with just written instructions”
• Pictures help tremendously – use the device posters from the Allergy & Asthma Network (different devices, dose counters, breathing)
• Consider obtaining certification as an AE-C
Device Identification 2021
Pick the right device, show the dose counter
Approaches to Win Asthma Battles

- Support asthma education – general, specific
- Smoking cessation programs, Tobacco Quit Line – 1-800-QUIT-NOW – national program – important referral
- Include school personnel; link with schools
- Assure availability of medications and spacers
- Teach and re-teach how to use devices; monitoring
- Recognize impaired health understanding
- Use summer to prepare for back-to-school flares
- Avoid the “sick → ER” paradigm; include FCMH
- Utilize lay coaches*; promote environ modifications
- Utilize the “48 hrs of panic” after an acute flare

Personalized Medicine
Hope / expectation for the future!

• Care for the individual, not just the “typical” patient
• What are the outcome goals?
• Balance of cost vs need – crucial policies / decisions for insurers
• Broad variation in understanding for prescribers
• Improving understanding for different mechanisms of disease and of therapy
• Adherence to prescribed therapy is critical, to know if a treatment works or not (what you don’t get can’t help you!); trigger recognition/control is also crucial
• Sophisticated lab testing likely to be required
Key Strategies for improving asthma outcomes

- Give instructions in understandable language
- Saturate family w/ action plans they understand
- Demonstrate correct device usage repeatedly!
- Smoking cessation in household
  - Seeking smoke-free ROOMS and WOMBS!
- Work with schools (minimize absences, save $$)
  - Individual patients, find unrecognized patients
  - Programmatically, enhanced education, maintain full activity for patients

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• Identify ways to utilize effective communication patterns in all asthma teaching situations
• Identify support services needed to optimize asthma control for the underserved

Did we meet them?
Take-home Messages

- Disparities DO exist in asthma
- There are many causes – no single “fix”
- Many disparity problems are societal; who does the family listen to?
- Many are misperceptions or environmental
- Coaching is crucial to get past “I can’t do it” mindset but must recognize individual issues
- Work with what your setting allows – don’t back away or give up!
- COMMUNICATE – Link to all members of the team
- Team up with other care – givers supporting family
QUESTIONS?
General References

• Acevedo-Nieves RM. Exposing Barriers to Asthma Care in Hispanic Children. *Nurse Practitioner* 2008;33:37-42.
• Asthma Education Conference for Tribal Health Officers 2006.
• CDC Asthma Surveillance Data: https://www.cdc.gov/asthma/asthmadata.htm
• CDC national asthma program “Breathing Easier”: https://www.cdc.gov/asthma/pdfs/breathing_easier_brochure.pdf
• Chin MH *et al.* Health Care Quality-Improvement Approaches to Reducing Child Health Disparities. *Pediatrics* 2009;124:S224-236,
• Cloutier MM *et al.* The 2020 Focused Updates to the Asthma Management Guidelines: A Report from the National Asthma Education and Prevention Program Coordinating Committee Expert Panel Working Group was coordinated and supported by the National Heart, Lung, and Blood. *JACI* 2020; 146 (6):1217-1270.
References II

• SMHRT: Student Media-based Health Research Team, R Gupta, NW Peds

• Sheats KJ. Mission Possible: Too Heavy a Burden: Thoughts on the Impact of Violence Disparities Experience by African Americans. CDC 2018: Conversations on Equity


• Wechsler ME et al. *NEJM* 2007;356:2083. (How pts die of asthma in the 21st century!)
Relevant Websites

• AAE: www.asthmaeducators.org
• AAN: Allergy & Asthma Network: www.allergyasthamanetwork.org
• American Lung Association analysis of asthma coverage by Medicaid: www.lungs.org/asthma-care-coverage
• CDC asthma data: www.cdc.gov/asthma/most_recent_data.htm
• CDC Minority Health: www.cdc.gov/minorityhealth/index.html
• CDC School Management of Asthma: www.cdc.gov/asthma/schools.html
• EPR-4 in draft form 2 -2020
• GINA ‘20 (Global INitiative for Asthma) www.ginasthma.org
• President’s Task Force on Environmental Health Risks and Safety Risks to Children – https://ptfceh.niehs.nih.gov/
• SAMPRO: www.aaaai.org/SAMPRO
• Science & Outcomes of Allergy & Asthma Research. SOAAR@northwestern.edu
• ww.healthypeople.gov/2020/topics-objectives/topic/social-determinants-of-health
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For more information on the Allergy & Asthma Network and the Community Asthma & COPD Experts program, visit:
allergyasthmanetwork.org
or email Sally Schoessler at
sschoessler@allergyasthmanetwork.org