Asthma Specialists: Beliefs and Practices

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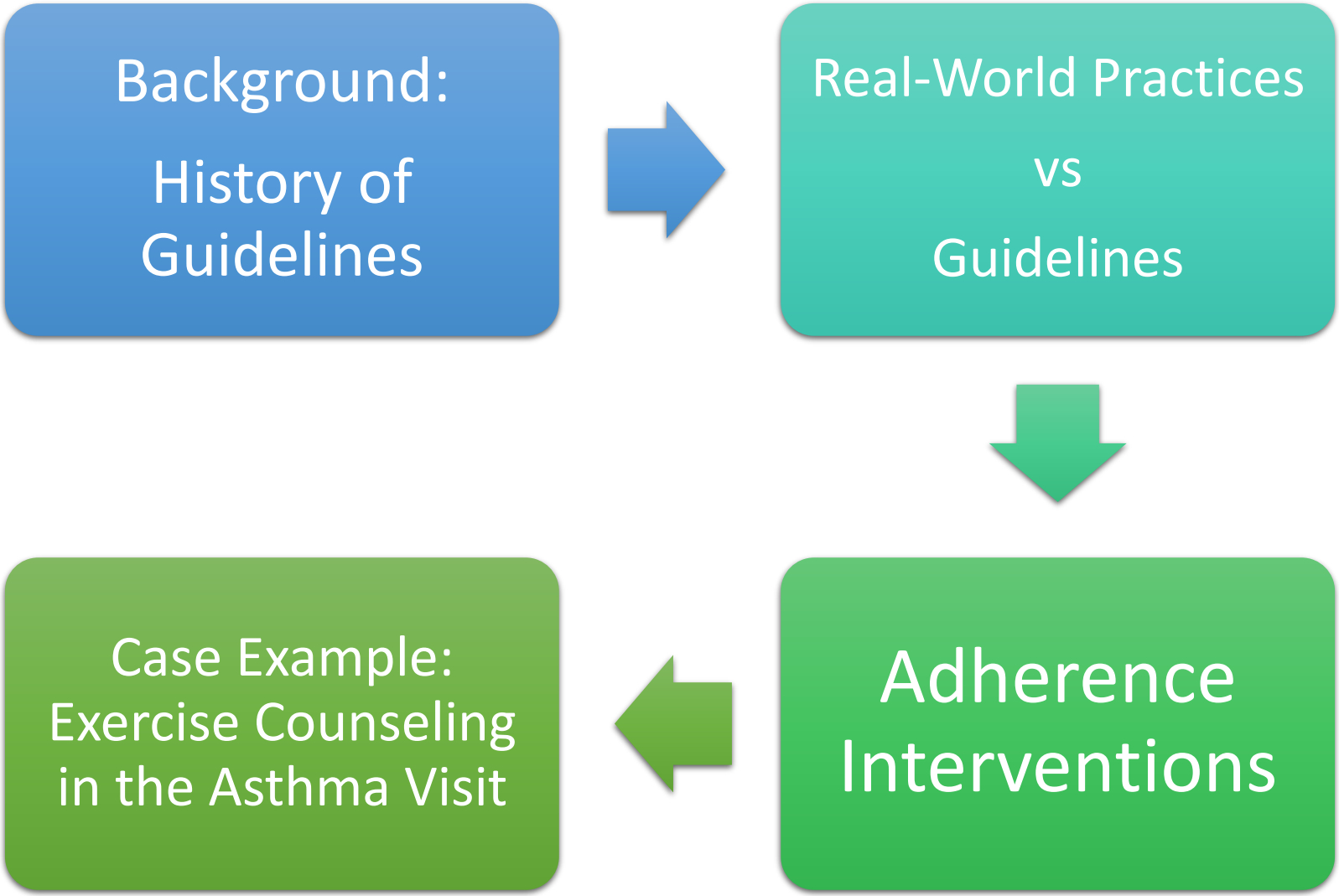
COI Disclosures

- Clinical Trials: GlaxoSmithKline
- Advisory Board: ChartBiopsy, LifeOmic
- Equity: Doximity, Rezilient

Objectives

1. Be able to discuss non-pharmacologic aspects of long-term asthma management
2. Recognize the most common gaps between asthma management guidelines and “real-world” implementation by asthma specialists
3. Discuss evidence for interventions to improve guideline adherence
4. Understand the attitudes of asthma specialists toward exercise and asthma, and their exercise counseling practices


Background:
History of Guidelines
Real-World Practices
vs
Guidelines
Adherence Interventions
Case Example:
Exercise Counseling in the Asthma Visit

Asthma: Background

Epidemiology

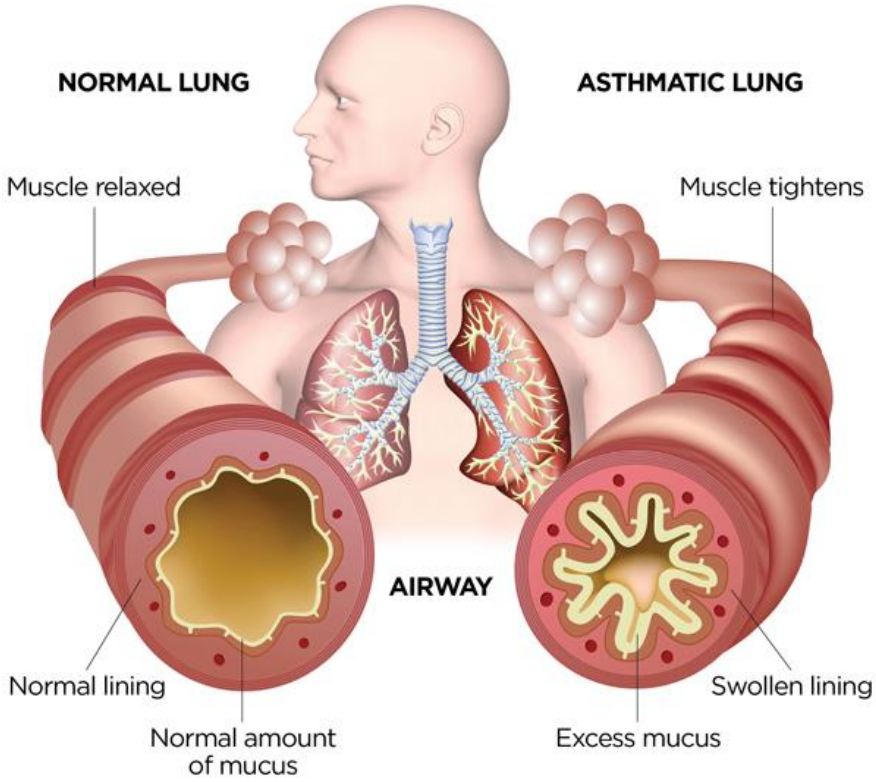
- Asthma is the most prevalent chronic respiratory disease in the world (~ 340 million global cases)
- Prevalence is increasing

Pathogenesis

- Characterized by reversible narrowing of the lower airways → shortness of breath, cough, and chest pain

Triggers

- Environmental insults (example: cigarette smoke)
- Respiratory infections (example: upper respiratory viruses)



Long-Term Asthma Management

Goals:

1. <u>Minimize</u> symptom frequency/intensity
2. <u>Maximize</u> activity level + quality of life

↓ need for reliever med

(≤ 2 days **<u>per week</u>**)

↓ nocturnal awakenings

(≤ 2 nights **<u>per month</u>** in adults or 1 night in children)

Full ability to attend work/school and exercise

Getting to the Goal: EPR Guidelines

- Produced by National Asthma Education and Prevention Program Coordinating Committee (NAEPPCC) Expert Panel
  - Part of National Heart, Lung, and Blood Institute (NHLBI)
- "Four essential components of asthma care: **assessment and monitoring**, **patient education**, **control of factors contributing to asthma severity**, and **pharmacologic treatment**"

Getting to the Goal: EPR Guidelines

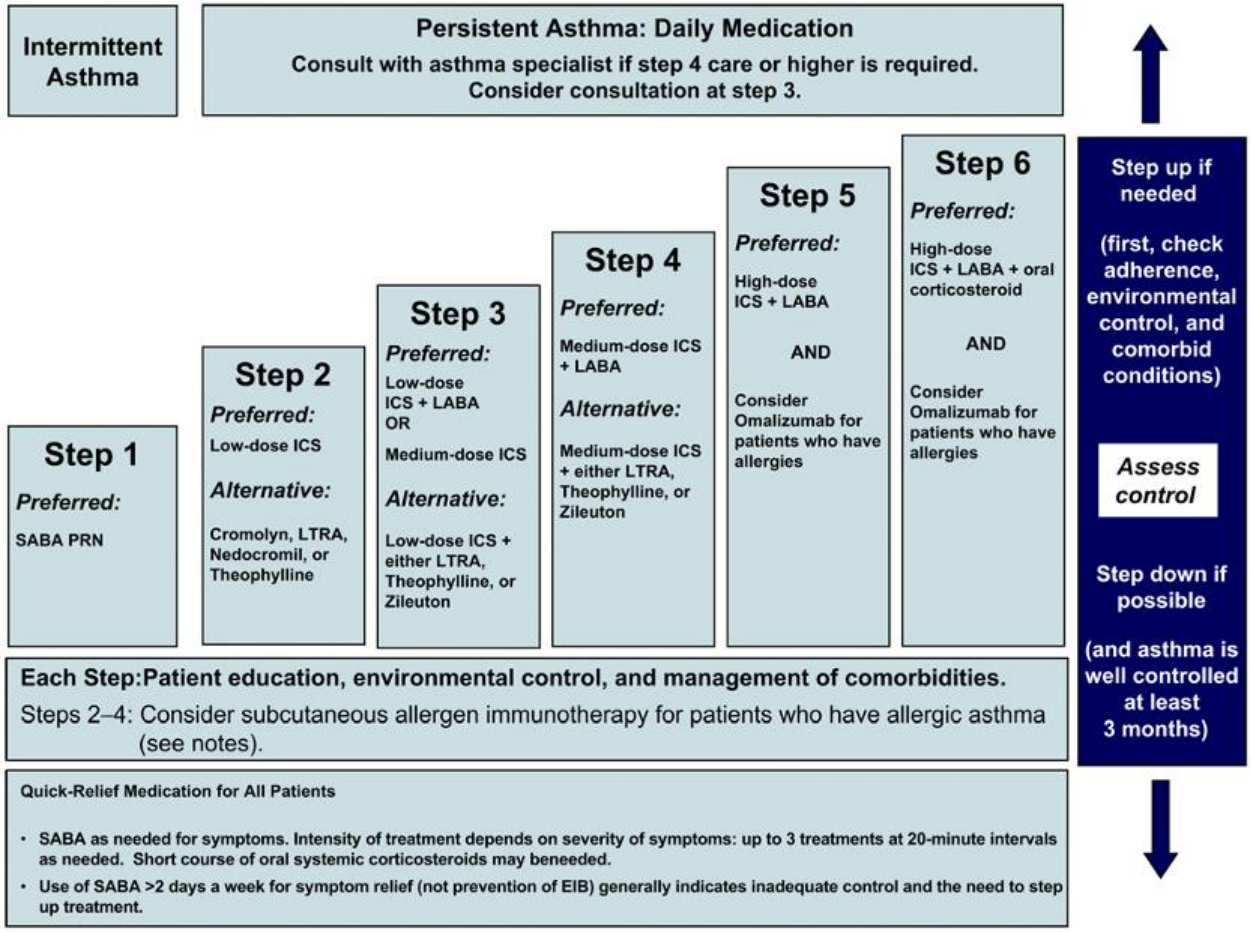
Introd. 1991

First Revision (EPR-2) 1997

2nd Revision (EPR-3) 2007

EPR-4 Panel convened 2018, “focused updates” 2020

Getting to the Goal: EPR Guidelines



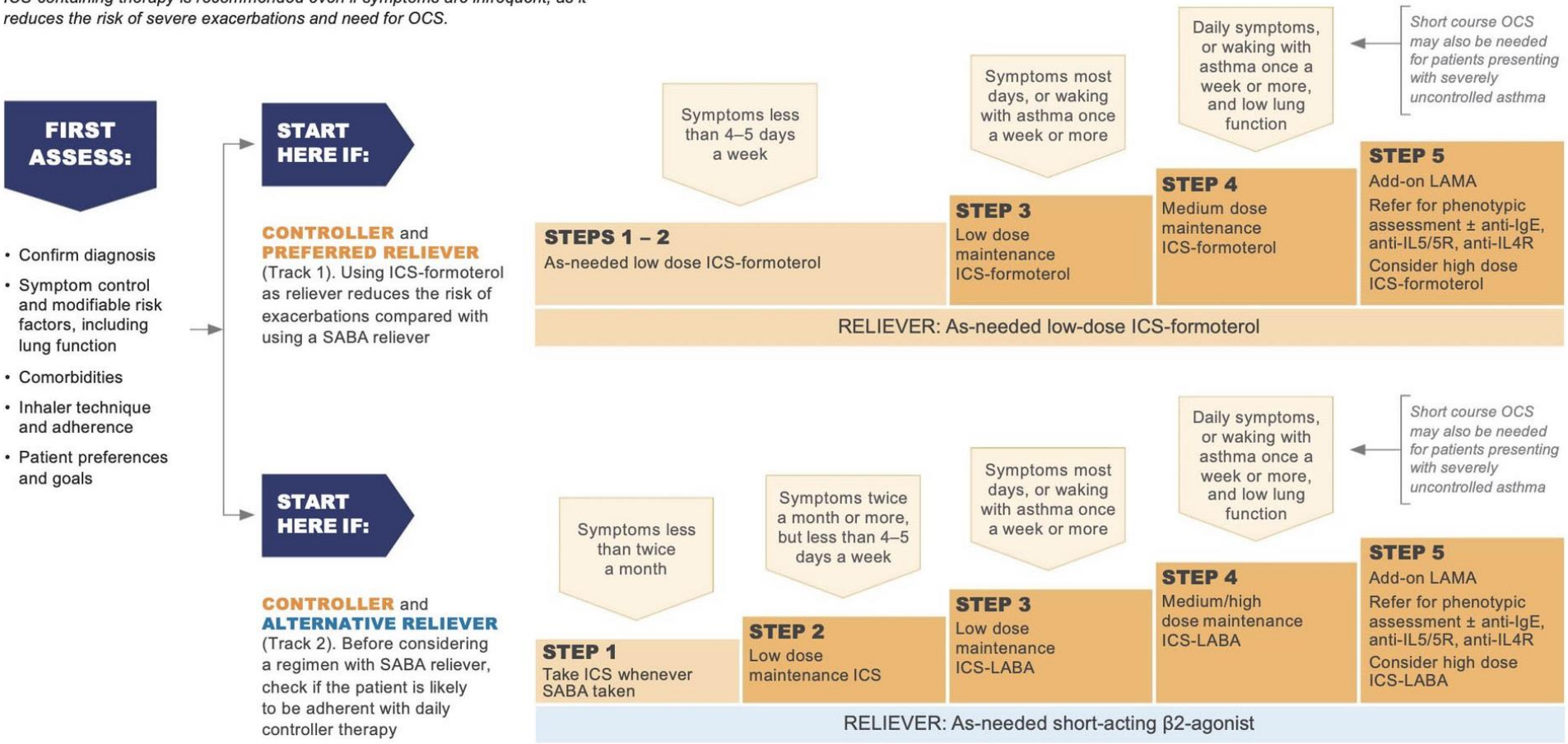
Getting to the Goal: GINA Guidelines

- The Global Initiative for Asthma (GINA), launched in 1993
- Collaboration between NHLBI and the World Health Organization (WHO)
- GINA Scientific Committee → yearly “global strategy for asthma management and prevention”
  - First released in 1995

STARTING TREATMENT

in adults and adolescents with a diagnosis of asthma

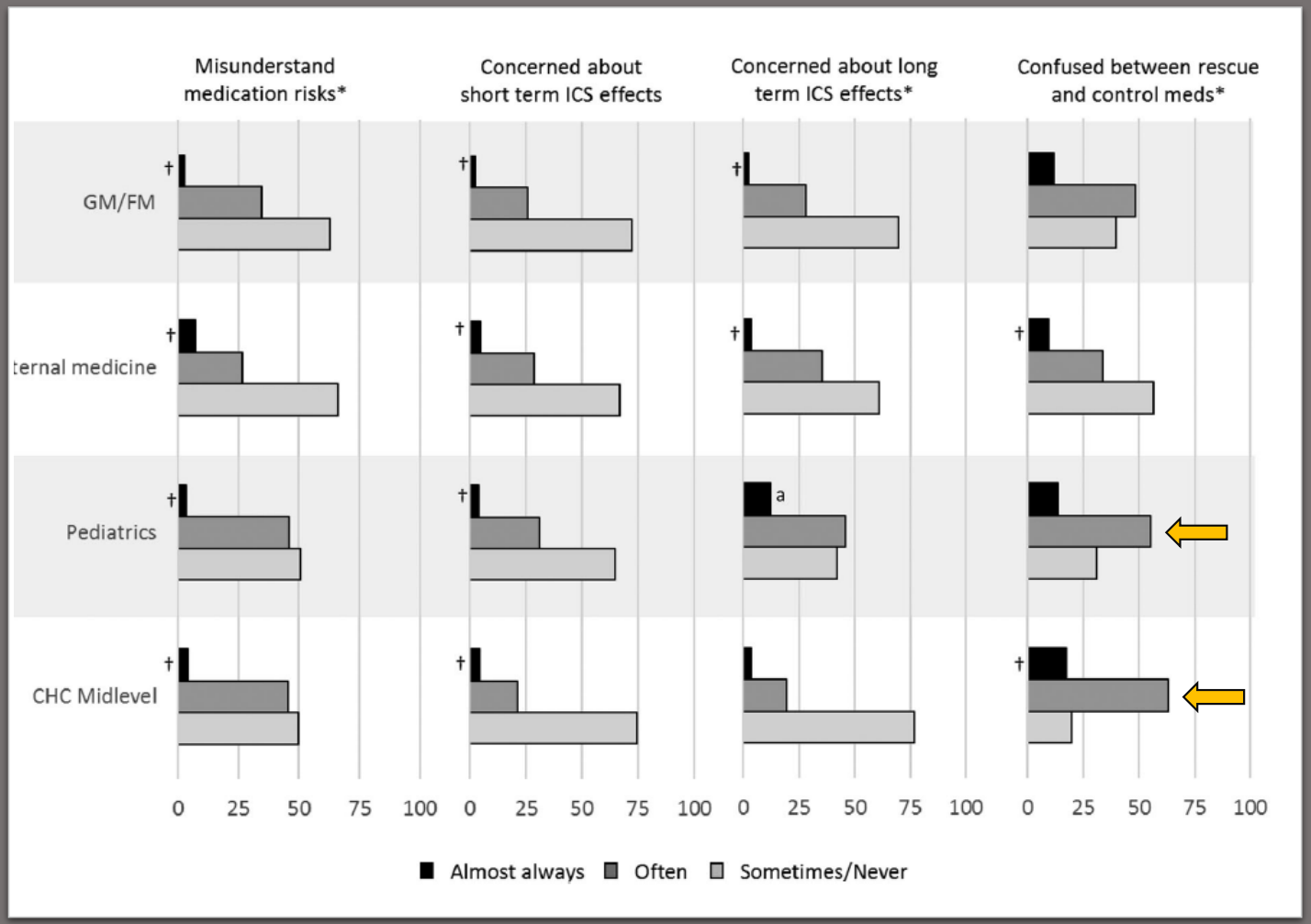
Track 1 is preferred if the patient is likely to be poorly adherent with daily controller ICS-containing therapy is recommended even if symptoms are infrequent, as it reduces the risk of severe exacerbations and need for OCS.



Primary care clinician adherence with asthma guidelines: the National Asthma Survey of Physicians

- PCPs provide >60% of medical care in the United States
- Among PCPs: **low rates of allergy test referral** → lack of familiarity with asthma
- PCPs = more likely to adhere to guidelines when they referred to specialists frequently
- Pediatricians = most likely group to adhere to guidelines + use asthma action plans

Akinbami et al, J Asthma 1999



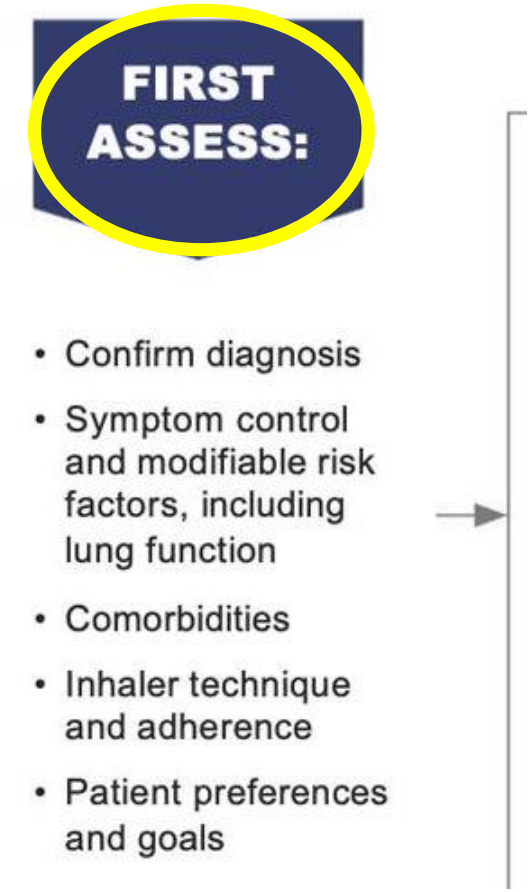
Asthma Patients of PCPs

EPR

Four essential components of asthma care:

1. assessment and monitoring
2. patient education
3. control of factors contributing to asthma severity
4. pharmacologic treatment

GINA



Health Literacy, Adherence, and Asthma

- Overall adherence to provider recommendations is **poor**
  - Misunderstandings = very common
- Children of parents with low health literacy have more severe asthma symptoms
- In urban African-American/Hispanic teenagers, progress in health literacy → improved asthma self-care and fewer symptoms
- **Action plans** aimed at parents with low HL → improved disease understanding in urban clinics

Sources:

1. Dewalt 2007, *Ambul Pediatr*
2. Yin 2017, *J Asthma*
3. Egan 2019, *JACI Practice*

Ideal World vs Real World:
Guideline Recommendations vs Provider Behavior

Guidelines are:

- Synthesized from expert committee review of evidence
  - **Not** survey of common practices
- Often reflecting ideal conditions
  - Don't always factor in real-world pressures

CHEST Paper 1999: explored adherence of asthma specialists to guidelines

1st Survey of Asthma Specialist Practices (1999)

- Respondents = 113 Chicago-area allergist/immunologists and pulmonologists who self-identified as “asthma specialists”
- Results:
  - Safety of inhaled steroids was recognized: 99% prescribe ICS for asthma patients >5 years old and 85.5% prescribe ICS for patients <5 years old
  - Only 51% of total respondents used spirometry for monitoring asymptomatic patients
  - Only 71% used asthma action plans
    - 77% A/I vs 58% Pulm

Moy et al, CHEST 1999

First Survey of Asthma Specialists (1999)

"The inconsistencies in asthma care between the specialist groups… have the potential to deliver confusing messages to primary-care physicians and their patients."

Asthma Specialists in the 2020s

Cloutier et al, JACI:IP 2020

2020 Survey of 134 A/I + 99 Pulmonary Specialists in USA

Aim: "To assess similarities and differences between allergists and pulmonologists in adherence to cornerstone components of the National Asthma Education and Prevention Program's Third Expert Panel Report (EPR-3)"

Asthma Specialists in the 2020s

Cloutier et al, JACI:IP 2020

Major Findings:

Low adherence to:

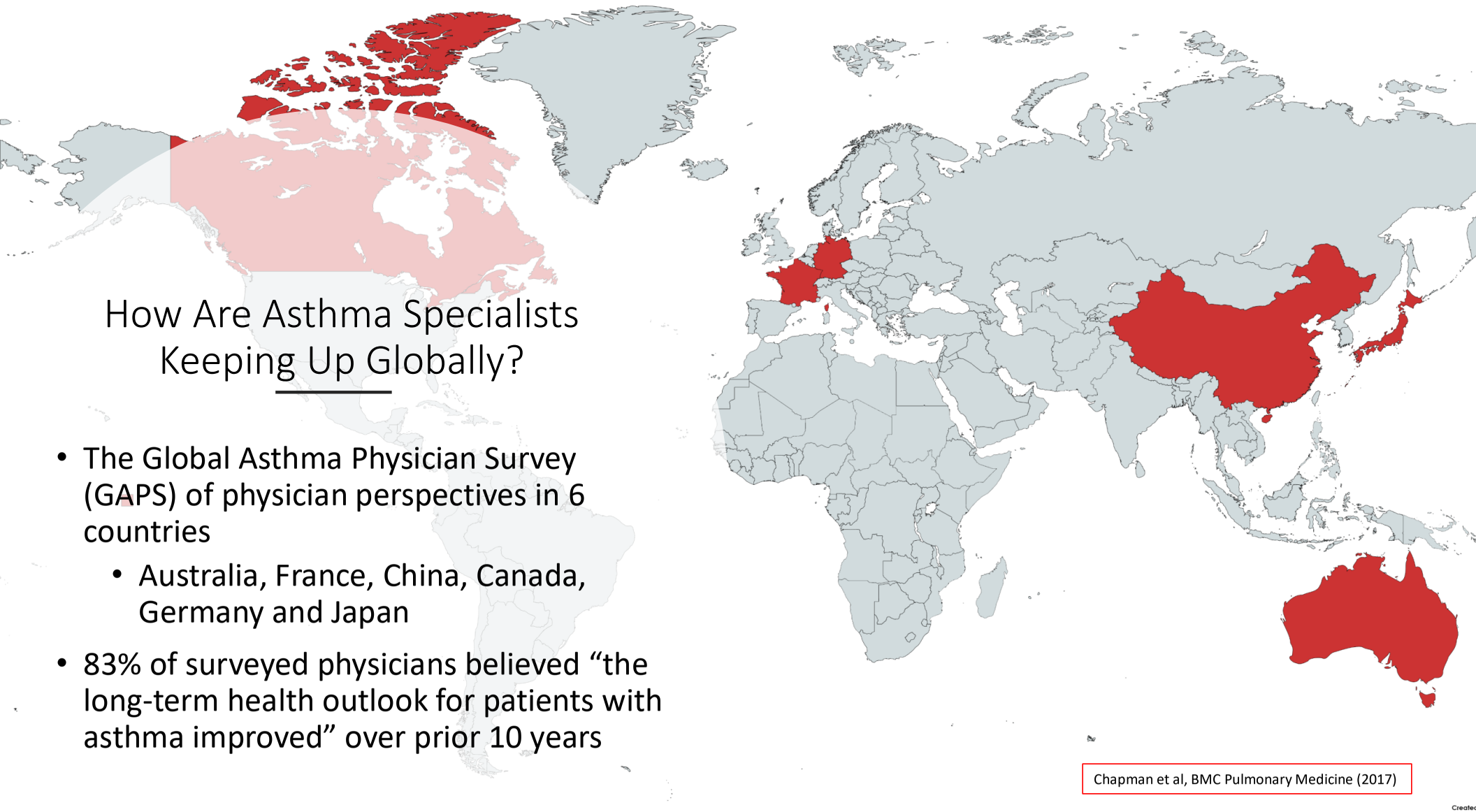
1. Use of asthma action plans (30.6%)
2. Assessment of inhaler technique (39.7%)

Guideline adherence by both A/I and Pulm specialists → higher than by generalists

- Compared to published data

How Are Asthma Specialists Keeping Up Globally?

- The Global Asthma Physician Survey (GAPS) of physician perspectives in 6 countries
  - Australia, France, China, Canada, Germany and Japan
- 83% of surveyed physicians believed “the long-term health outlook for patients with asthma improved” over prior 10 years



Chapman et al, BMC Pulmonary Medicine (2017)

How Well are Asthma Specialists Keeping Up Globally?

- Adoption of written action plans: 30% (China) to 50% (Japan)
- Asthma control assessment method varied by country:
  - Spirometry (France, Germany)
  - Symptom frequency (China)
  - Exacerbation frequency (Japan)

What About *Improving Adherence*?

Interventions grouped into 8 categories:

- Decision support
  - ex. Technology to facilitate provider decision-making
- Organizational change
  - ex. Assigning an “asthma champion”
- Feedback and audit
- Clinical pharmacy support
- Education (only)
- Quality improvement/pay for performance
- Information (only)
- Multicomponent

Interventions to Modify Health Care Provider Adherence to Asthma Guidelines: A Systematic Review

Outcomes measured:

- Asthma action plans
- Prescription of controller medications
- ED visits/hospitalizations

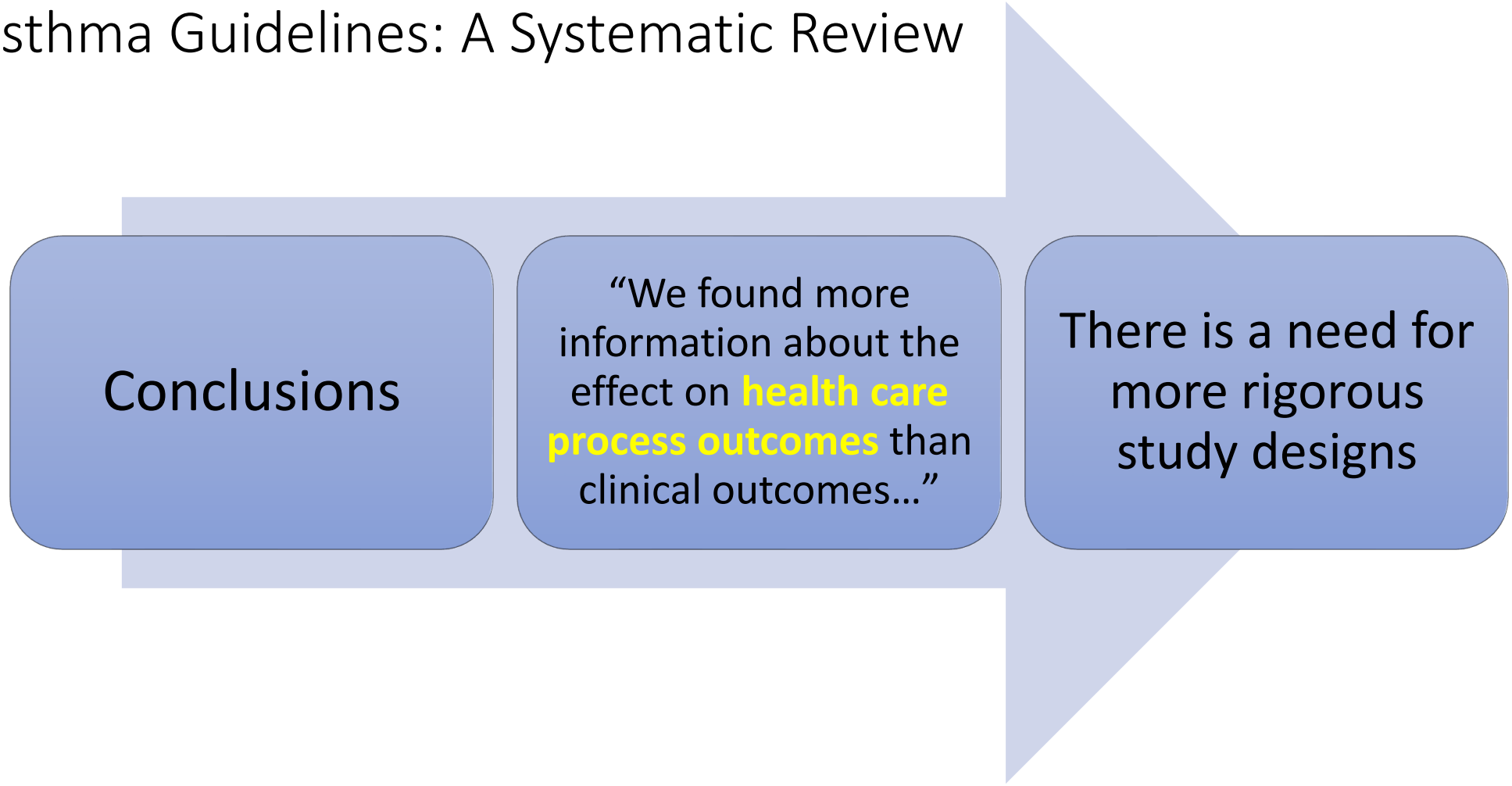
Results:

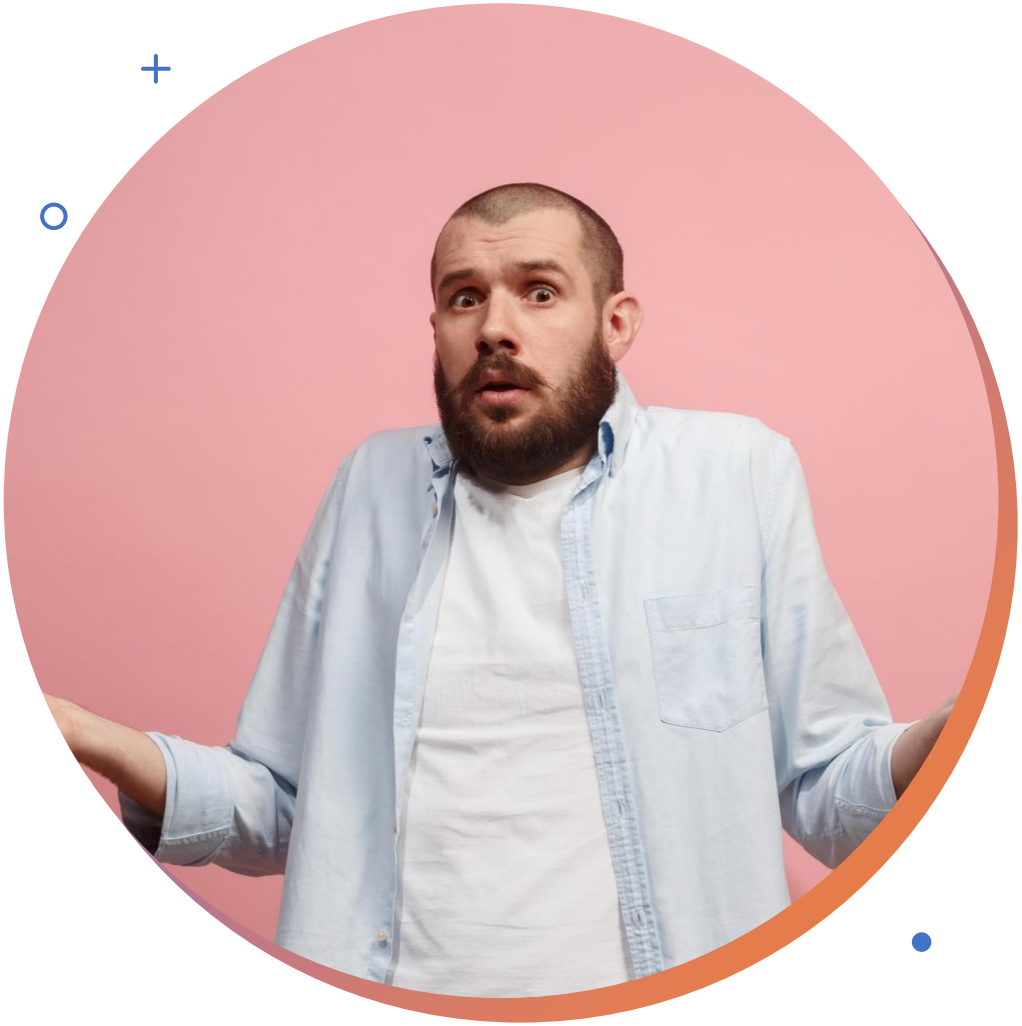
- **Decision support + clinical pharmacy support** → improvement in all 3
- **Education only, information only, pay-for-performance** → no significant improvement / insufficient evidence
- Rest had mixed record

Interventions grouped into 8 categories:

1. Decision support ✓
2. Organizational change
3. Feedback and audit
4. Clinical pharmacy support ✓
5. Education (only) ✗
6. Quality improvement/pay for performance ✗
7. Information (only) ✗
8. Multicomponent

Interventions to Modify Health Care Provider Adherence to Asthma Guidelines: A Systematic Review



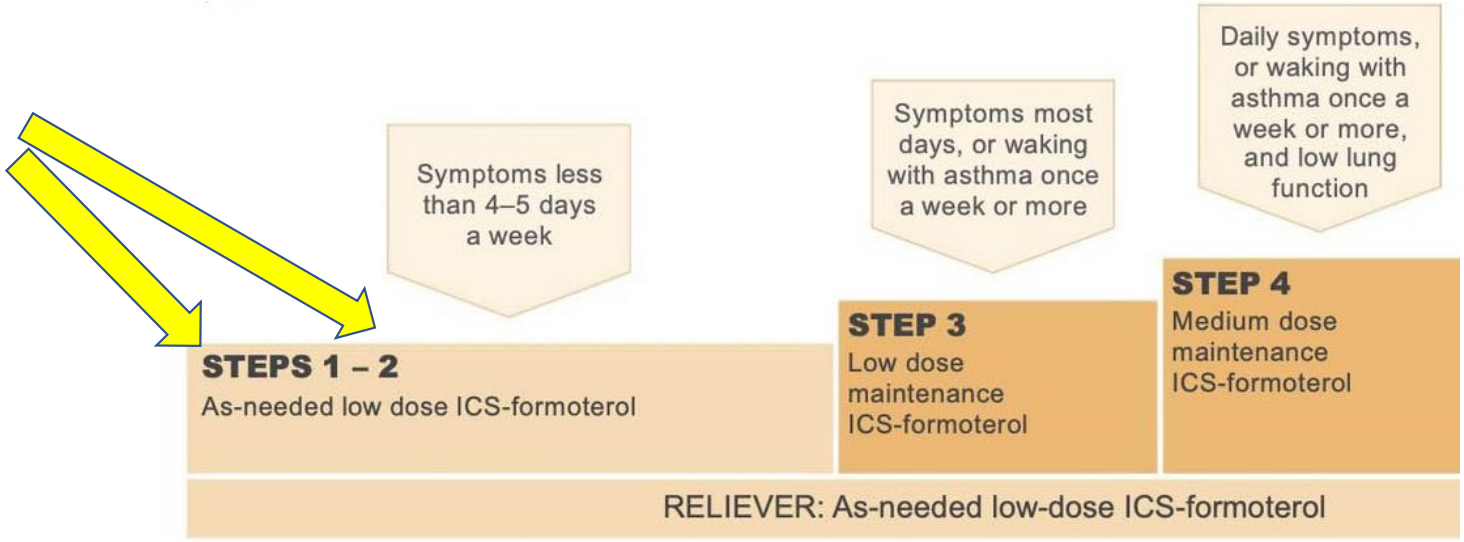


Inhaler Adherence: Still a Problem

- AAAAI “Attaining Optimal Asthma Control” Practice Parameter (2005) → address adherence in <u>every</u> patient with uncontrolled asthma

- Perception of illness can determine how a patient takes their inhaler
  - As can ***lack*** of perception

Enter: Single Maintenance/Reliever Therapy (SMART) Strategy



SMART = symptom-driven inhaler use for individuals who don't experience asthma symptoms daily

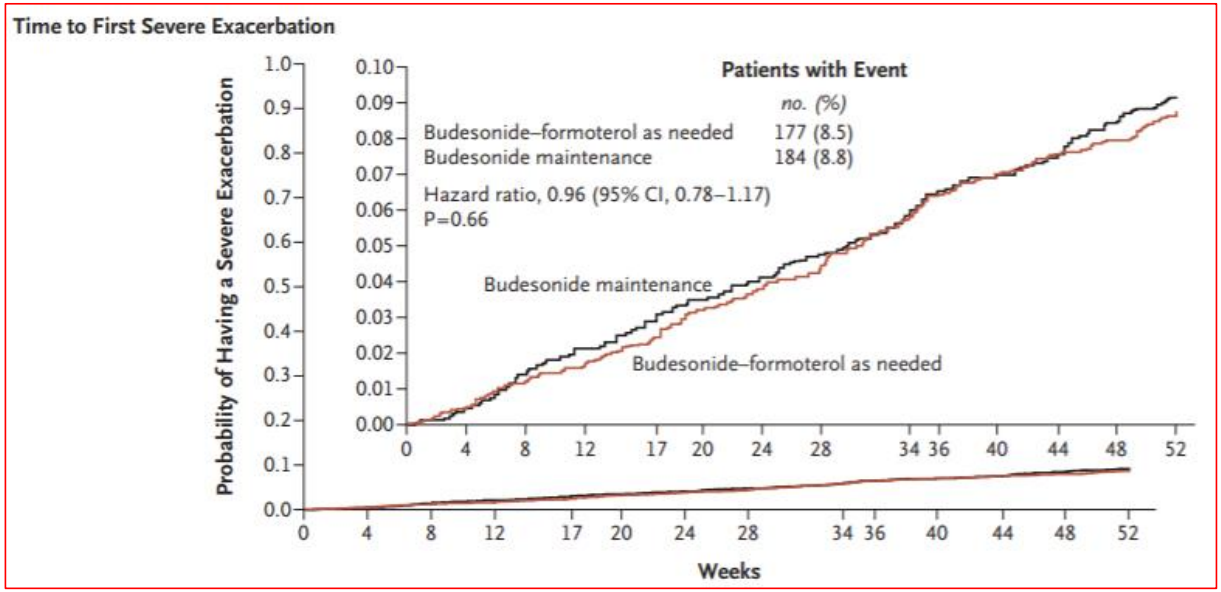
Single Maintenance and Reliever Therapy (SMART)

- 4215 patients randomized:
  1. BID budesonide + PRN SABA
  2. BID placebo + PRN budesonide-formoterol
- Results at 1 year →

  Daily inhaled steroid (median):

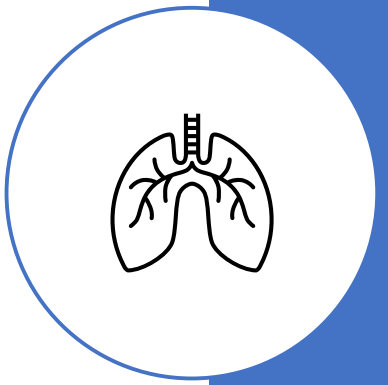
  66 mcg in ICS-LABA cohort

  267 mcg in ICS cohort



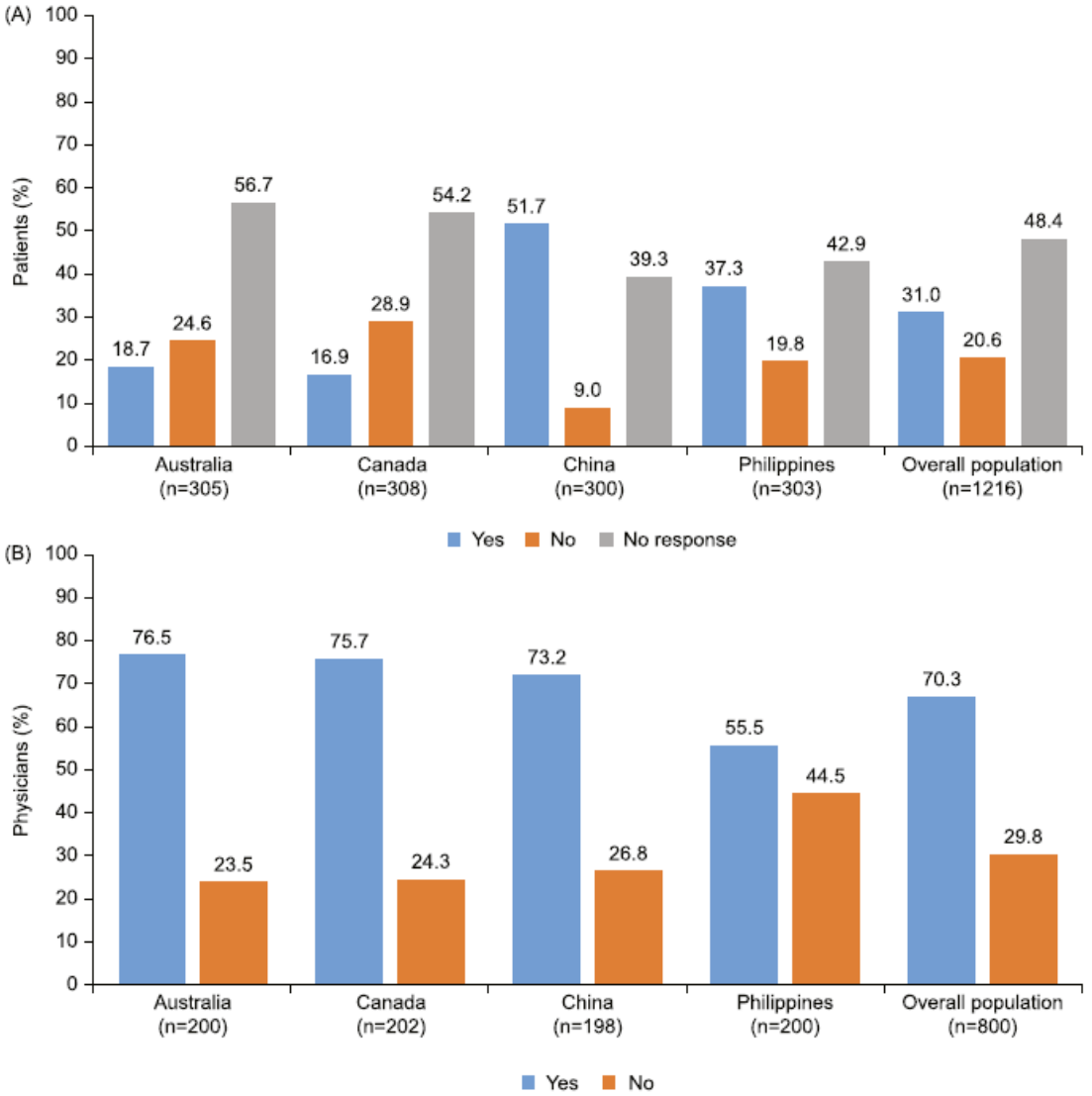
SMART Dosing Strategy: Worldwide Acceptance

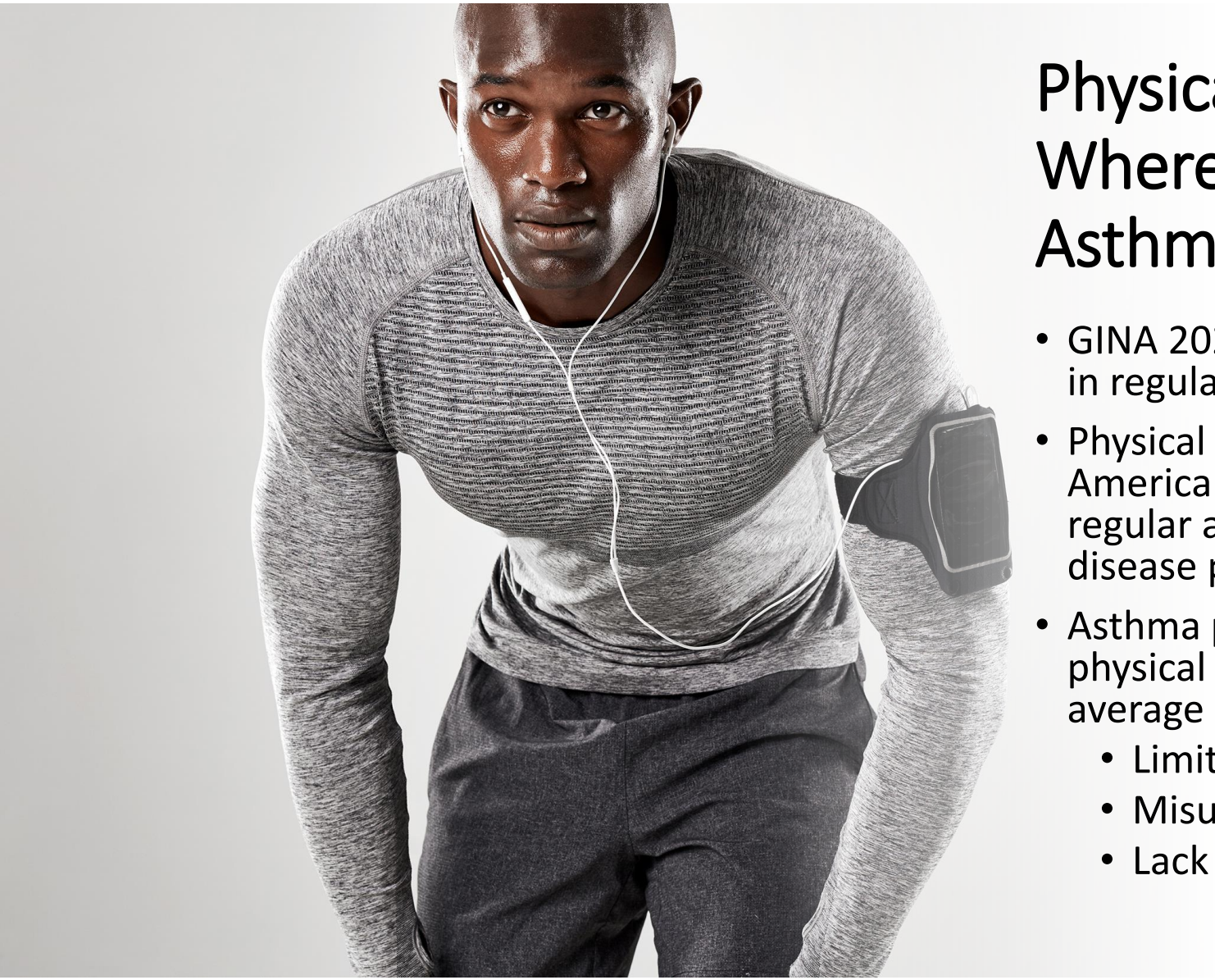
- Limited data so far to track implementation of SMART
- One survey of >1200 patients + 800 physicians in 4 countries (Australia, Canada, China, and Philippines) → relatively low awareness by patients
  - Range from 16.9% (Canada) to 51.7% (China)
- Despite only 45-60% of patients reporting well-controlled asthma



Chapman et al, Respir Med 2021

Are you aware of the [SMART dosing] approach for treating asthma?



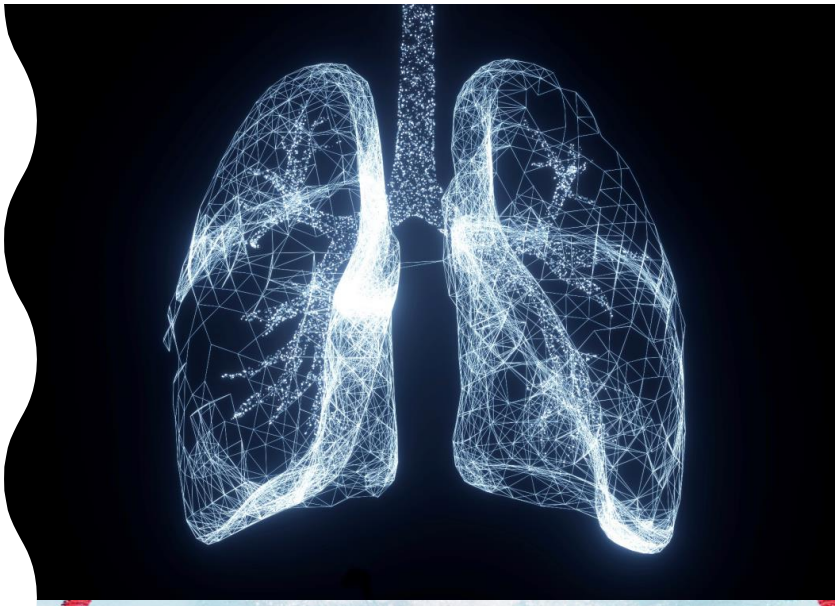


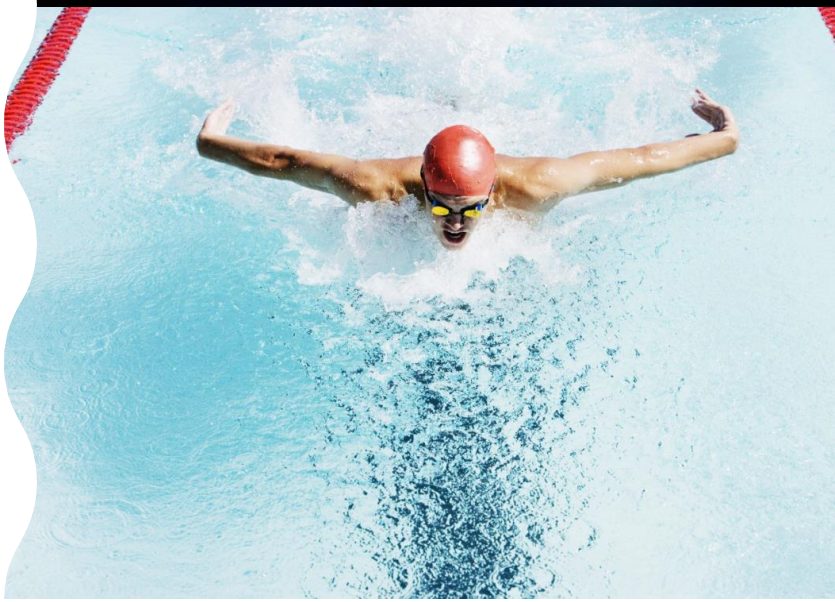
Physical Activity: Where Does it Fit with Asthma Guidelines?

- GINA 2021 recommends engaging in regular physical activity
- Physical Activity Guideline for Americans (JAMA 2018) encourages regular activity for all chronic disease patients
- Asthma patients engage in less physical activity than the national average
  - Limited by symptoms
  - Misunderstanding around safety
  - Lack of awareness of benefit

Exercise and Asthma

- **Benefits of physical activity in asthma are well-established**
  - **Children: exercise → reduced need for medications, ED visits, and school absenteeism**
  - **Adults: exercise → improved quality of life, fewer symptoms; mixed effect on lung function measurements**
- **Likely multiple mechanisms, and new discoveries still emerging:**
  - **Scott et al (*Annals of ATS* 2022) demonstrated that moderate exercise yields ↓ Th2 inflammation including sputum eosinophilia in asthmatic subjects**





AAAAI Work Group Report

Results From a National Survey of Asthma Provider Beliefs and Practices Regarding Exercise and Asthma: A Work Group Report of the AAAAI Committee on Sports, Exercise, and Fitness

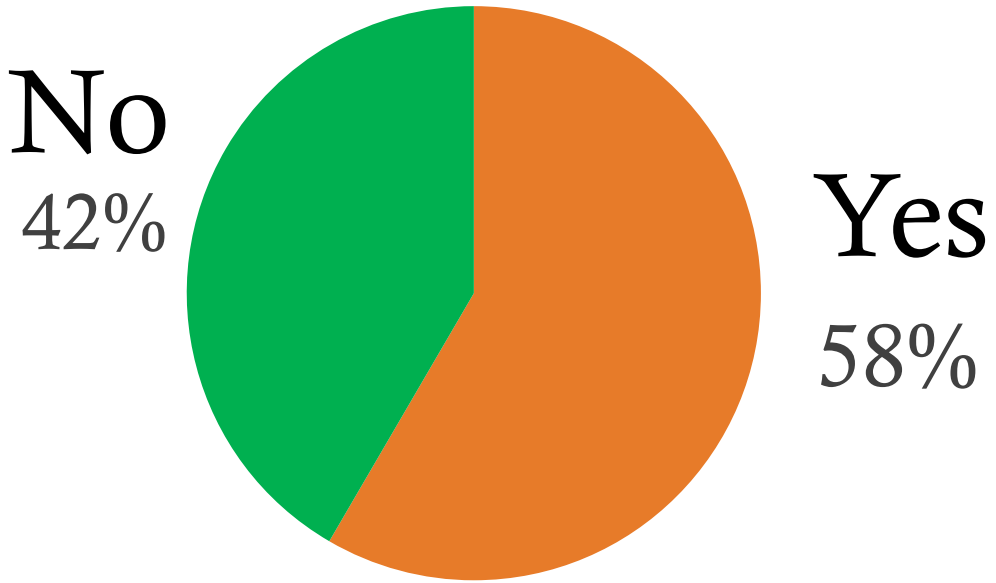
Basil M. Kahwash, MD[a], Karen L. Gregory, DNP, APRN[b,c], Lisa K. Sharp, PhD[d], and Sharmilee M. Nyenhuis, MD, FAAAAI[e] *Nashville, Tenn; Oklahoma City, Okla; Washington, DC; and Chicago, Ill*

- Two main aims of survey:
  1. Assess physical activity **counseling behaviors** in asthma specialists
  2. Understand **barriers/facilitators** to physical activity counseling
- 91 providers completed the survey
  - 87 from USA + 4 from Canada

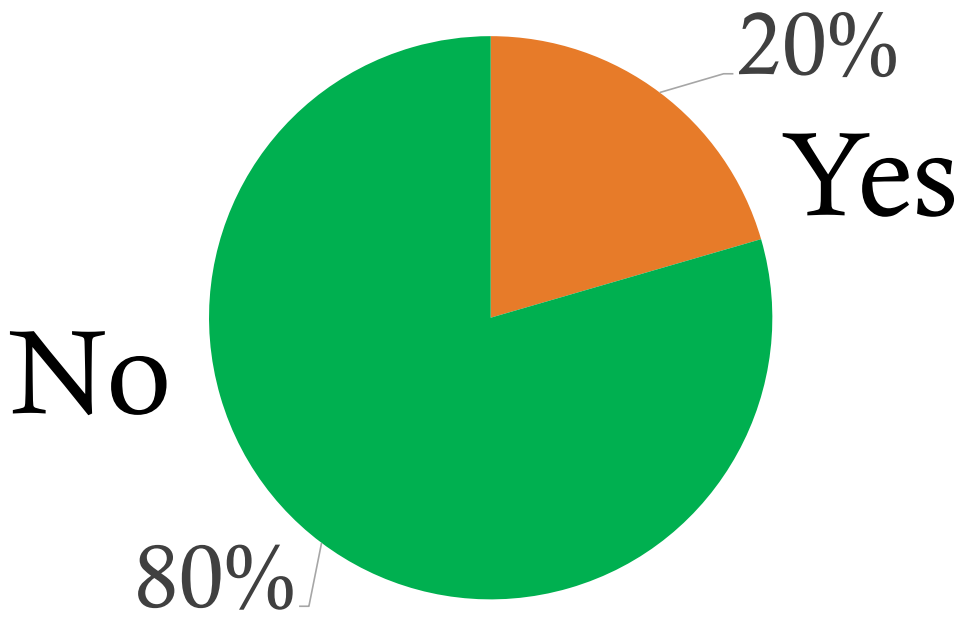
Demographic	Number of Respondents (%)
Gender	
Men	47 (51.6)
Women	44 (48.4)
Profession	
Attending Physician	91 (100)
Other (Resident/Fellow, NP, PA)	0 (0)
Age (Years)	
30 to 40	20 (22.5)
41 to 50	30 (33.7)
51 to 60	12 (13.5)
61 to 70	24 (27)
> 70	3 (3.4)

Demographic	Number of Respondents (%)
Sub-Specialty	
Allergy/Immunology (A/I)	87 (95.6)
Pulmonary Medicine	3 (3.3)
Both A/I and Pulmonary	1 (1.1)
Patient Population by Age	
Adult Only	13 (14.3)
Pediatric Only	7 (7.7)
Both Adult and Pediatric	71 (78)
Years in Practice	
5 or less	14 (15.4)
5 to 10	18 (19.8)
10 to 20	25 (27.5)
20 to 30	18 (19.8)
30+	16 (17.6)

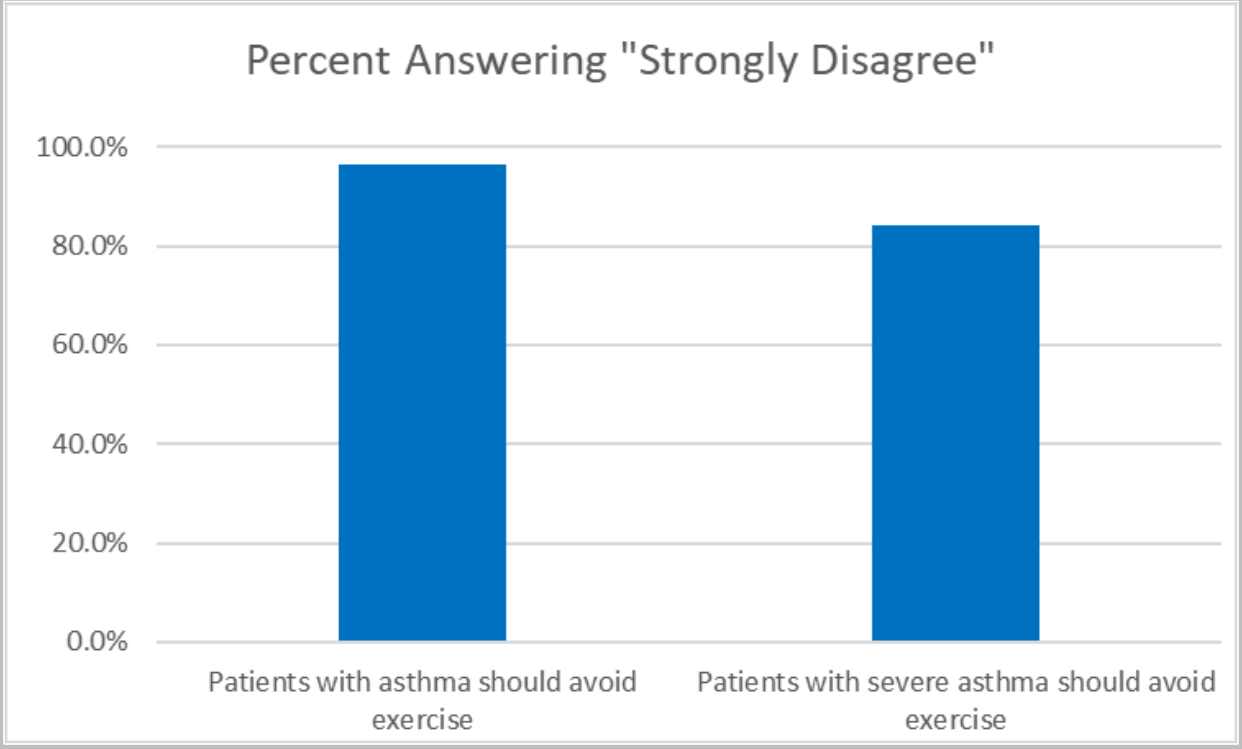
During a typical 7-day period, do YOU engage in at least 150 minutes of moderate-to-vigorous physical activity (brisk walking, jogging, running, bicycling, aerobics, swimming, hiking uphill)?



Are you aware of any specific guidelines for exercise/physical activity for patients with asthma?

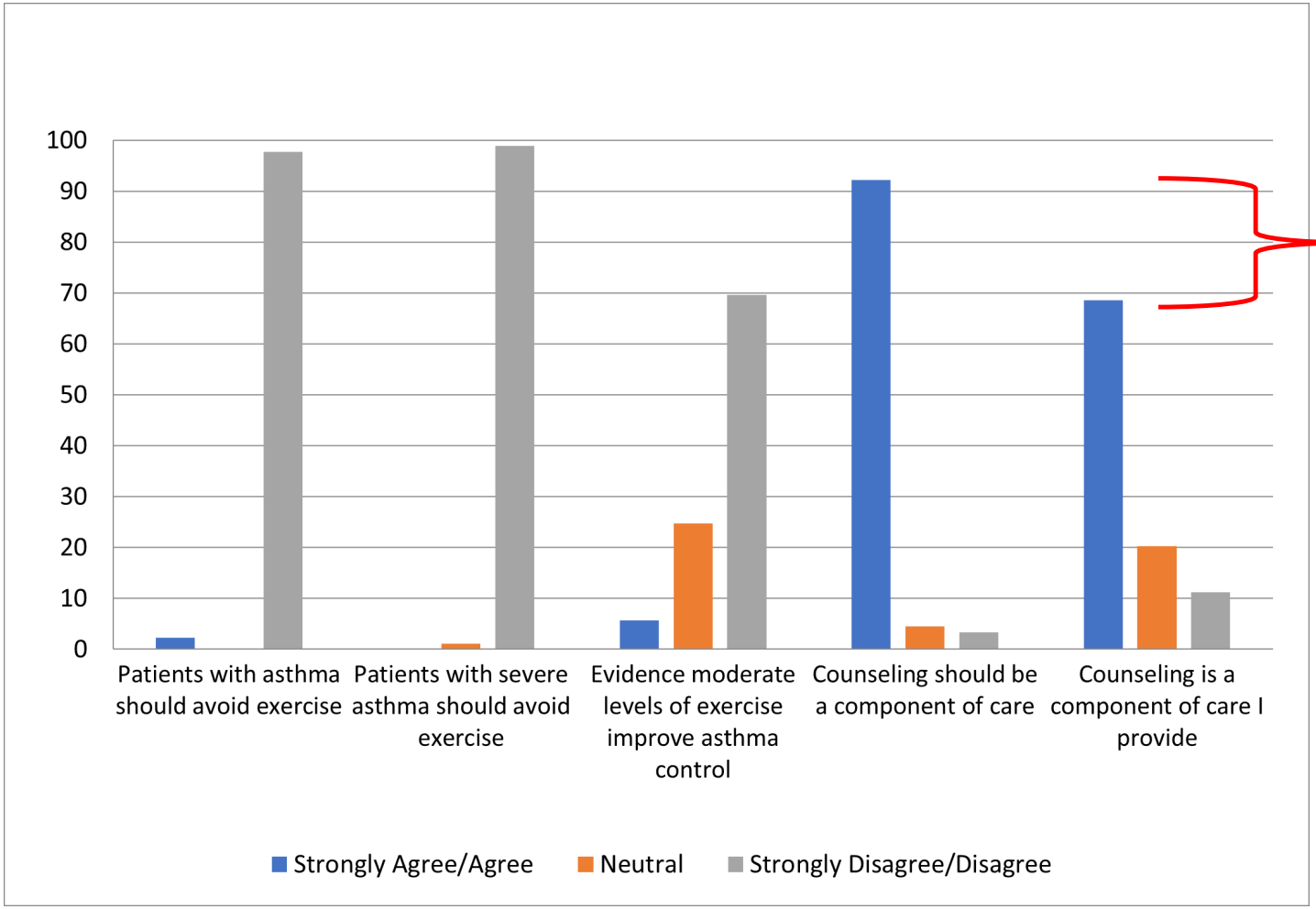


What percentage of asthma experts strongly support exercise?



(Percent who said they “strongly disagree” that asthmatics and severe asthmatics should not exercise)

Beliefs vs Practices: The Gap in Exercise Counseling

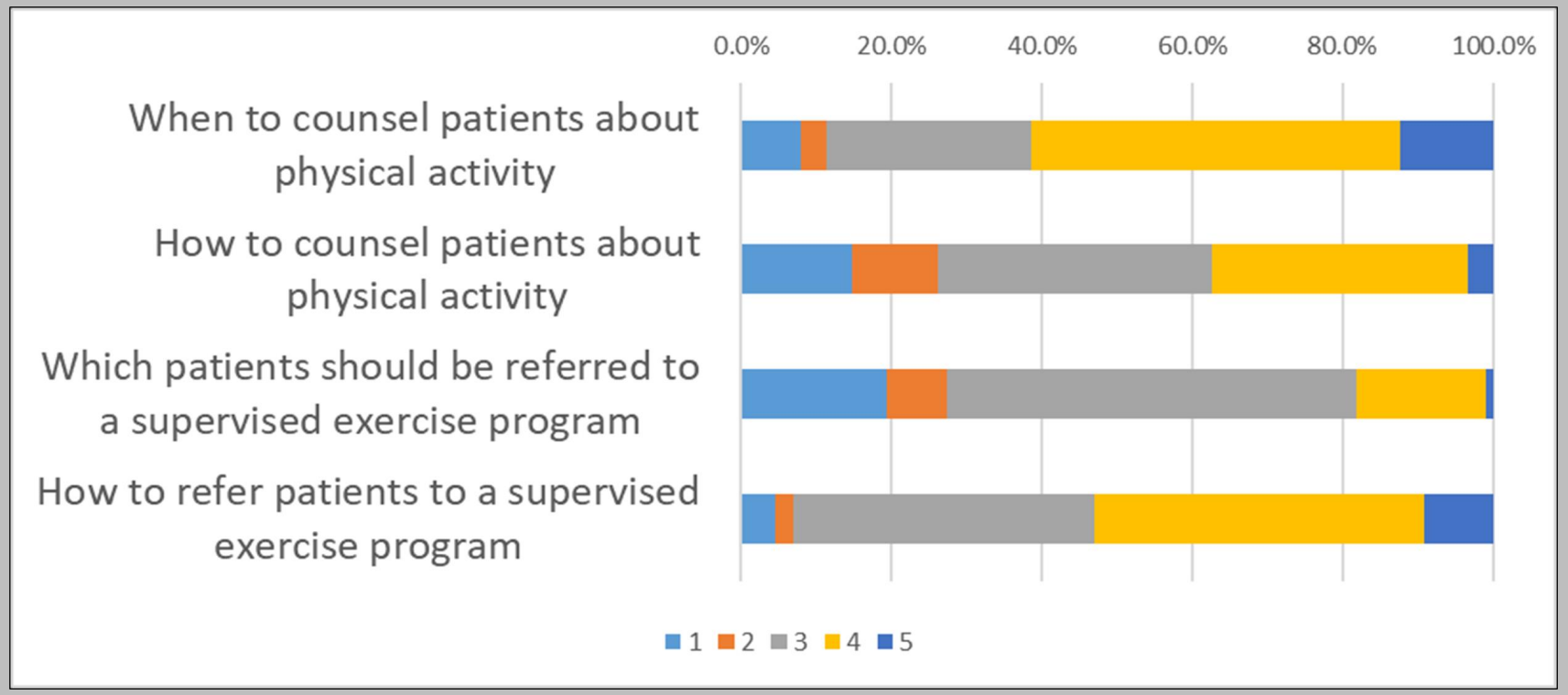


23%

Who is the most appropriate healthcare worker to address physical activity with asthma patients?

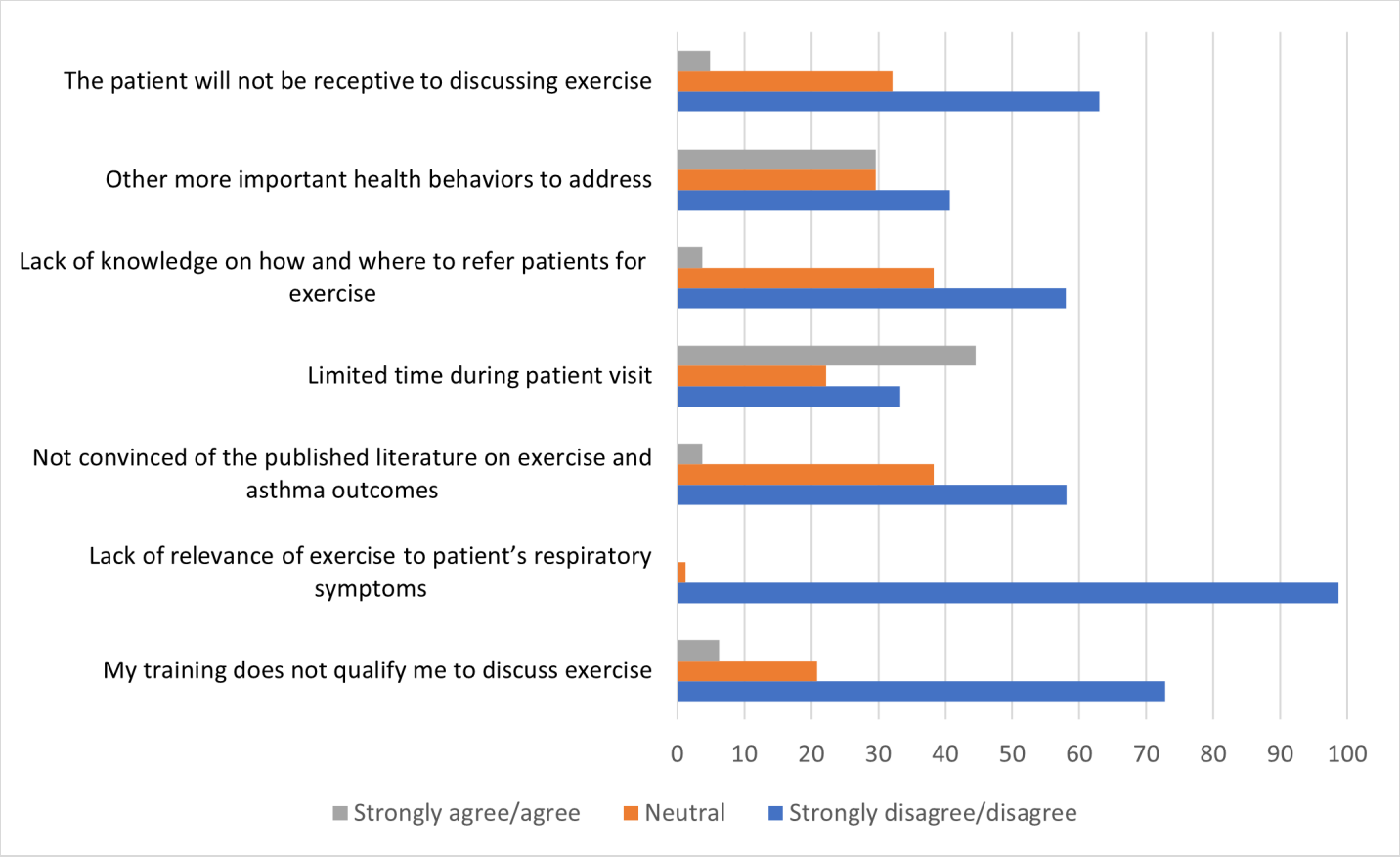
1. **Physician (90%)**
2. Nurse (65%)
3. Physiotherapist (57%)
4. All others (e.g. occupational therapist, social worker)

Asthma specialist self-rated competence in:

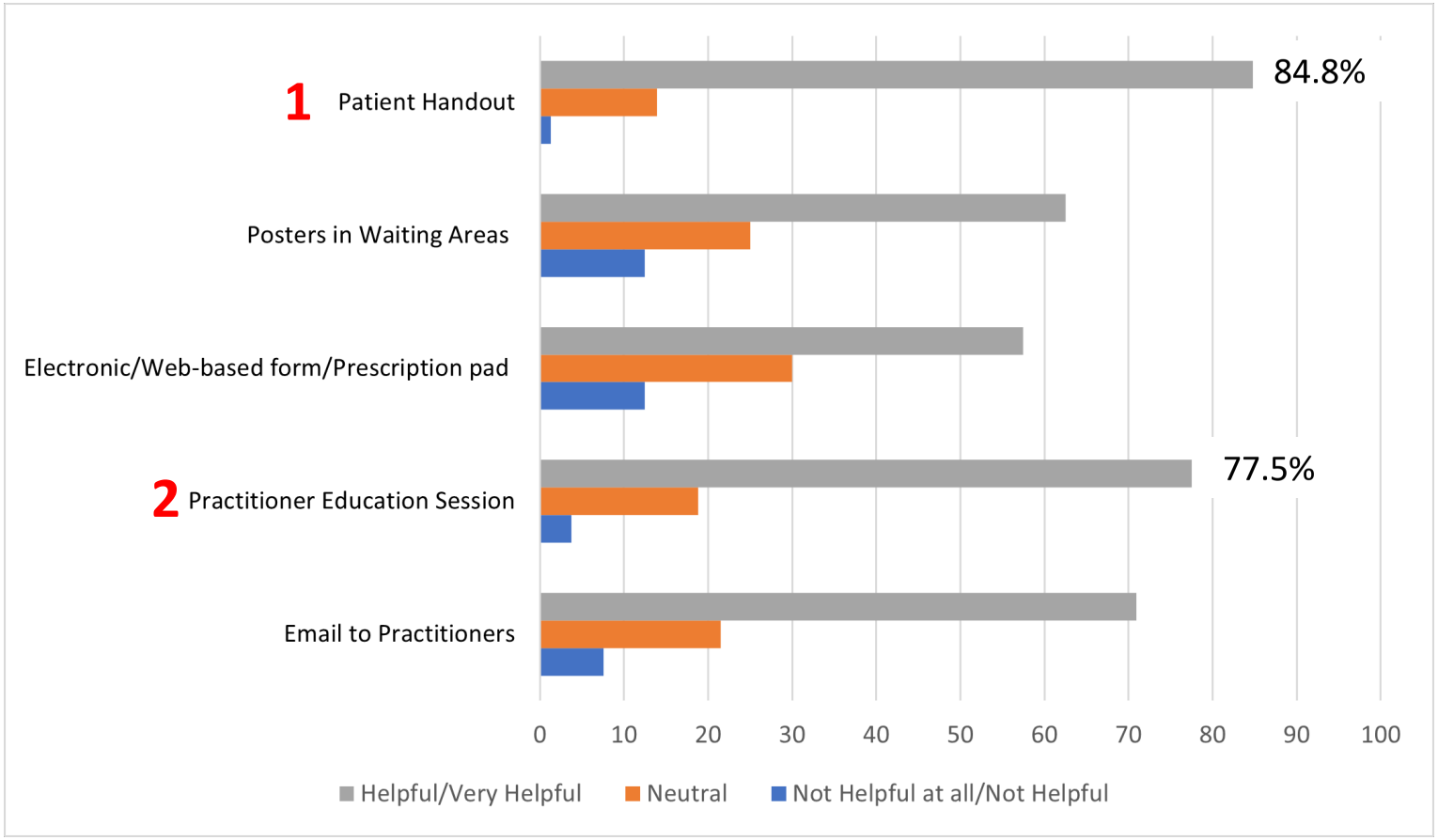


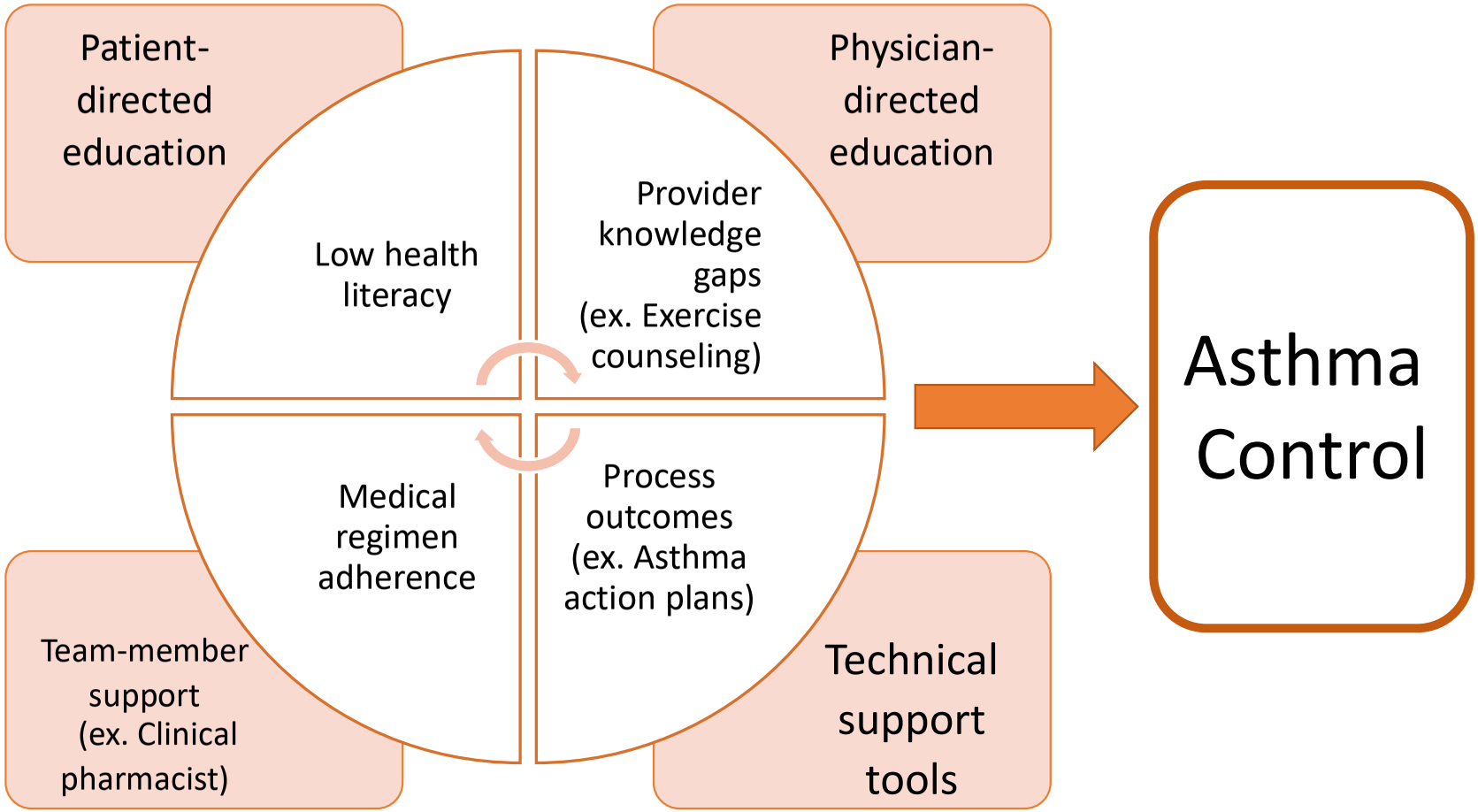
1 = no knowledge, 5 = very knowledgeable

Barriers to Asthma Provider Counseling



Potential Interventions to Promote Asthma Provider Counseling




Patient-directed education
Physician-directed education
Low health literacy
Provider knowledge gaps (ex. Exercise counseling)
Medical regimen adherence
Process outcomes (ex. Asthma action plans)
Team-member support (ex. Clinical pharmacist)
Technical support tools
Asthma Control

Summary

- Despite being a heterogeneous disease, almost all asthma patients can meet the treatment goals set by expert guidelines
- Management guidelines such as NAEPP EPR-3 and GINA 2022 have been published for >30 years but adherence to some parts of the guidelines is still low
- Asthma specialists recognize the need for physical activity counseling in patients, but fewer of them regularly counsel
- Problem-focused interventions appear to show the greatest promise to improving guideline adherence

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Q1

True or False: among attempted interventions to improve asthma specialist adherence to use of action plans, provider education alone appears to be the most effective.

Answer: False

Q2

True or False: a minority of patients with asthma will achieve a level of disease control that allows them to engage in regular physical activity.

Answer: False

Q3

All the following are obstacles to physical activity counseling that specialists cited, except:

a. Lack of time with patients

b. Lack of knowledge of specific guidelines

c. Belief that providers should not participate in counseling

d. Concerns about patient adherence

Questions?