Navigating Asthma Control:

A Severe Asthma Roadmap for Improved Diagnosis and Personalized Treatment

Final Outcomes Summary

This educational grant was supported by AstraZeneca Pharmaceuticals LP, GlaxoSmithKline, and Novartis

MOUNT SINAI - NATIONAL JEWISH HEALTH
Respiratory Institute

Icahn School of Medicine at Mount Sinai

National Jewish Health®

Navigating Asthma Control: A Severe Asthma Roadmap for Improved Diagnosis and Personalized Treatment

Executive Summary

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Program Design

Multimedia live (six two-hour evening symposium) and online case-based enduring activity following a guided workflow for diagnosis, assessment, and treatment selection of severe asthma designed to improve the knowledge and competence of allergists, pulmonologists, primary care physicians and pediatricians in the diagnosis, management, and treatment of severe asthma

Key Features

- ✓Whiteboard animation
- ✓Challenging cases
- ✓Infographic clinical aid
- ✓Intra-activity polling questions
- ✓Patient perspective video

Program Locations and Dates

(6) Live Evening Symposia:

1.) New York, NY (8/14/19); 2.) Denver, CO (9/4/19); 3.) Phoenix, AZ (9/5/19); 4.) Dallas, TX (11/12/19); 5.) Atlanta, GA (11/14/19); 6.) Miami, FL (12/5/19)

Online Enduring:

08/07/2019-08/07/2020 (**freeCME**)
01/10/2020-08/07/2020 (**myCME**)

Linda Rogers, MD
Director, Clinical Asthma Program
Icahn School of Medicine at Mount Sinai
Associate Professor of Medicine
Pulmonary, Critical Care and Sleep Medicine
Mount Sinai-National Jewish Health
Respiratory Institute, New York City, NY

Michael E. Wechsler, MD, MMSc
Professor of Medicine
Director of The Cohen Family Asthma Institute
Division of Pulmonary, Critical Care and Sleep Medicine
National Jewish Health, Denver, CO

Learning Objectives:

1. Apply current management guidelines to diagnose asthma correctly, optimize inhaled therapy, address comorbidities, and recognize when asthma is not well controlled.
2. Review evidence related to potential long-term effects of oral corticosteroids and assess their role in asthma management in the era of biologic therapies.
3. Identify key features of moderate to severe asthma that are targets for biologic therapies.
4. Individualize biologic and non-biologic therapies for patients based on their inflammatory phenotype, coexisting conditions, and other individual factors.

Defining the Patient Impact*

Learners were asked through a multiple choice question (MCQ) to identify the number of patients they treat per week with the condition of severe asthma. Four choices were provided ranging from ‘More than 15’ to ‘0 / Less than 5’. Totals were calculated based on conservative estimates within each category .

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Live Activity Outcomes Summary

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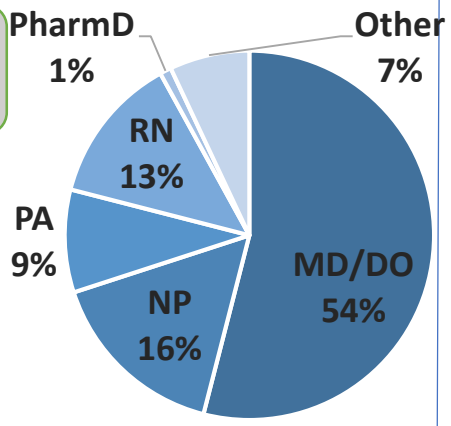
Participation

268 Learners

79% prescribers



Specialties:

Family/Internal Med/ Primary Care (50%)
Pulmonary (13%)
Pediatrics (15%)
Allergy (3%)
Other (19%)

Satisfaction

98% of respondents indicated the activity:
✓ Met their educational needs

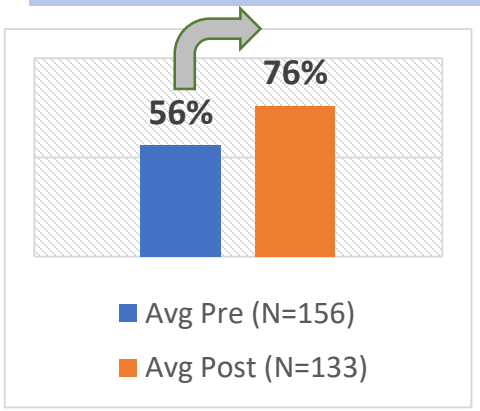
97% of respondents indicated the activity:
✓ Reinforced or improved current skills

96% of respondents indicated the activity:
✓ Met the learning objectives

N=133

95% of respondents indicated the activity:
✓ Improved ability to treat/manage patients

Educational Impact



36% overall relative knowledge gain

50,760 potential patients impacted annually*

Narrowing the Gaps (Knowledge Gain by LO)

Apply current management guidelines	**48%** relative gain
Review long-term OCS use and assess role in asthma management	**35%** relative gain
Identify key features that are targets for biologics	**38%** relative gain
Individualize biologic and non-biologic therapies	**21%** relative gain

Competence and Performance

99% of learners (N=132) report that they are somewhat to extremely likely to make changes to their practice

Top (3) intended changes to practice

(1) Incorporate different diagnostic strategies into patient evaluation (54%)
(2) Modify treatment plans (46%)
(3) Change screening/prevention practice (42%)

35% had already made changes to practice at 6 week follow up

Key Take-Aways

✓ Benefit of biologics for asthma
✓ Heterogeneity of asthma
✓ New therapies and treatment options
✓ Understanding endotypes and phenotypes

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Online Outcomes Summary

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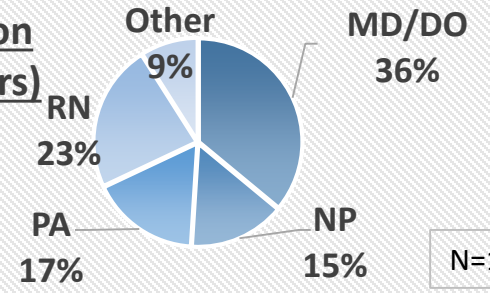
Participation

Completers (take post test) — **1,521**

Learners (engage with content) — **8,115**

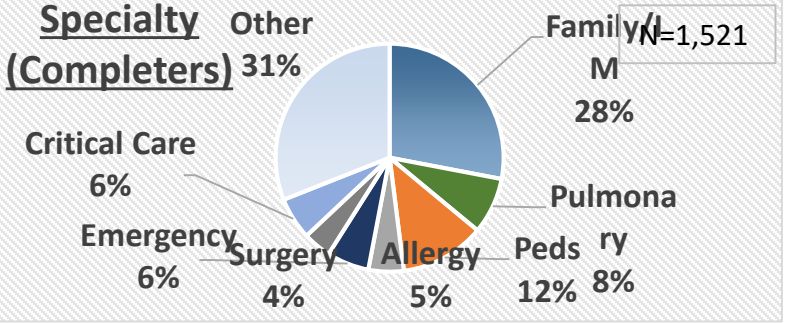
Certificates (complete evaluation) — **1,442**

Designation (Completers)



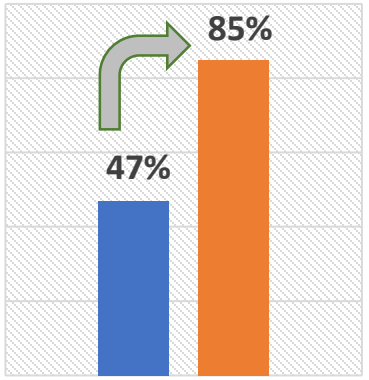
N=1,521

Specialty (Completers)



N=1,521

Educational Impact



N=1,521

81% relative knowledge gain for all data combined

38% absolute change for all data combined

Intent to Change: **94%** of all completers

Top (3) intended changes to practice

(1) Incorporate different diagnostic strategies into patient evaluation (98%)
(2) Modify treatment plans (91%)
(3) Change screening/prevention (88%)

N=1,442

Engagement and Effectiveness

209%

Rise in Mastery

Relative Increase in Learners who show **High Confidence** and **Correctness**

N=730

5.9

Engagement Score

Average number of actions taken by each learner [**59%** higher than ArcheMedx benchmark]

N=3,052

Projected Patient Impact

N=1,442

499,304*

Annual Patient Visits Impacted

9,602*

Weekly Patient Visits Impacted

Online Posting and Links Outcomes

ArcheMedX

freeCME.com® Always Current. Always Free.

Original program launched on August 8, 2019 where learners connect to the ArcheMedX platform via a single sign-on hosted on FreeCME

freeCME (8/7/2019-8/7/2020):
https://learning.freecme.com/a/32716PAAACT

Launched on myCME January 10, 2020 to supplement the reach of original program

myCME®

myCME (1/10/2020-8/7/2020):
https://www.mycme.com/navigating-asthma-control-a-severe-asthma-roadmap-for-improved-diagnosis-and-personalized-treatment/activity/6406/

Executive Summary: Online Activity Details

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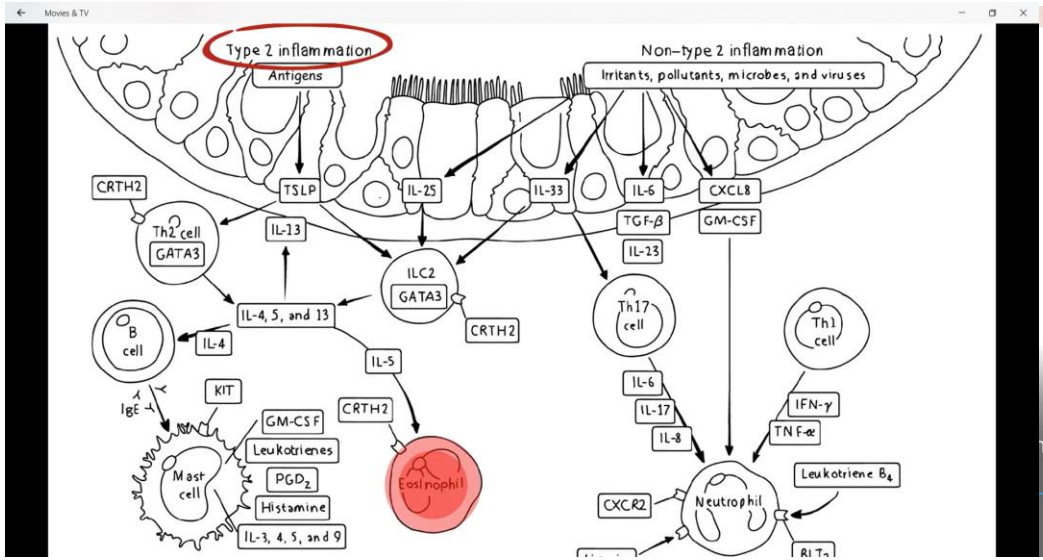
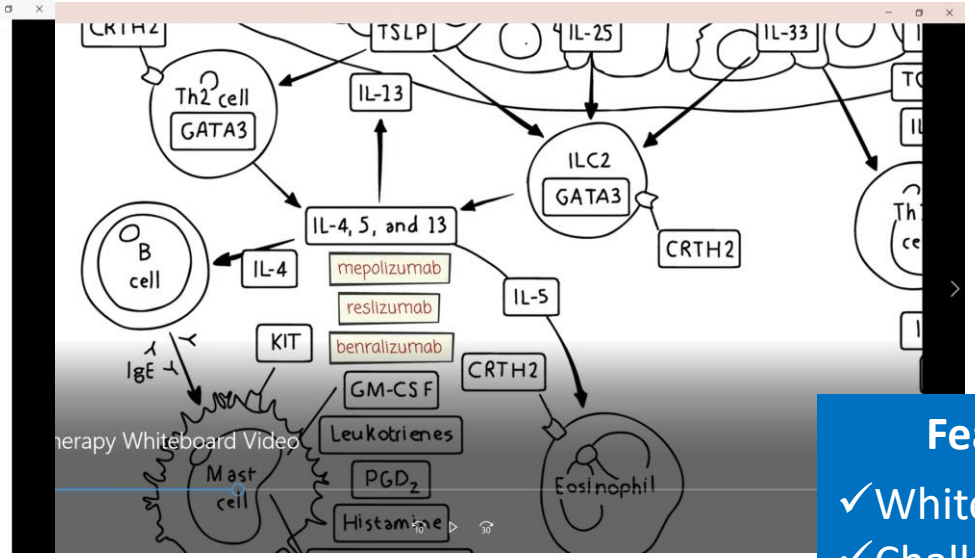
The online CME activity consisted of one 30-minute activity presented by our expert faculty, Dr. Michael Wechsler, from National Jewish Health. His presentation addressed his perspective on current and emerging treatments for severe asthma including diagnosis, current and emerging treatments, and the use of biologic therapies and oral corticosteroid reduction.

Patient Perspective Video





Screenshots of whiteboard animations

Features included:

- ✓Whiteboard animation
- ✓Challenging cases
- ✓Infographic clinical aid
- ✓Intra-activity polling questions

Level 1 Outcomes: Learner Participation

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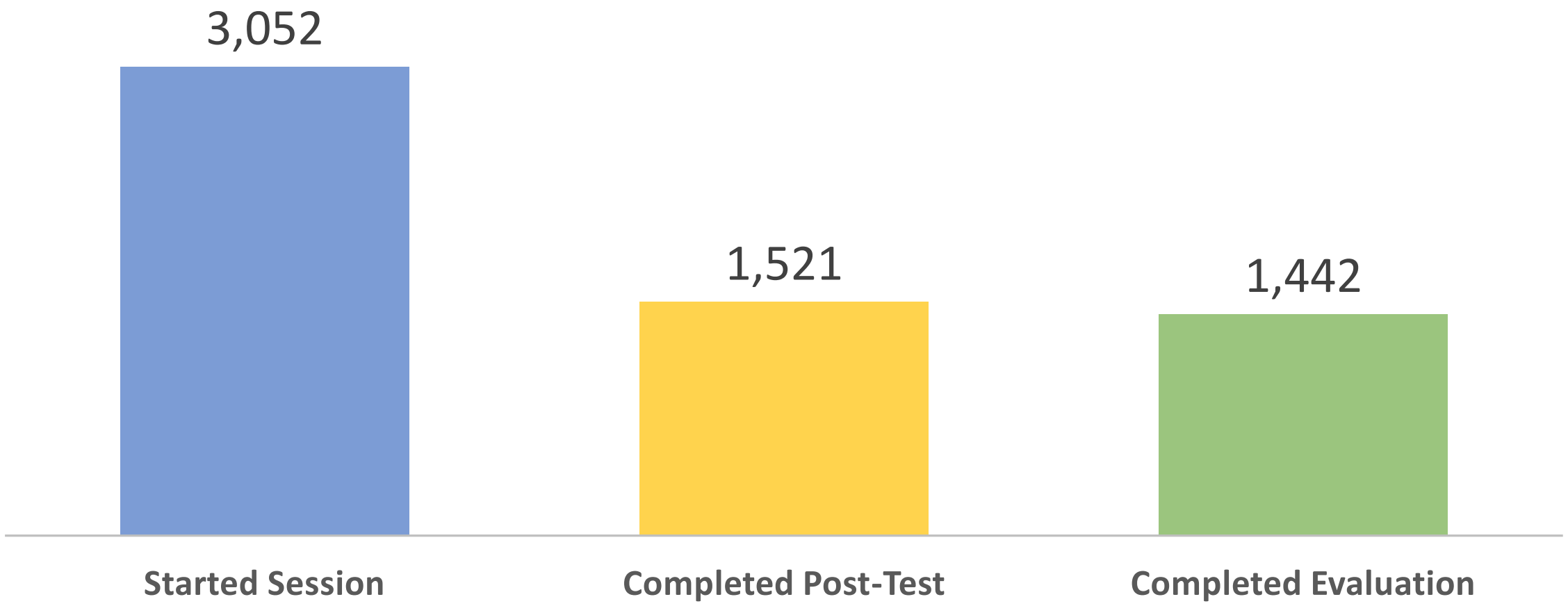

Level 1 Outcomes
Participation: Profession and Specialty

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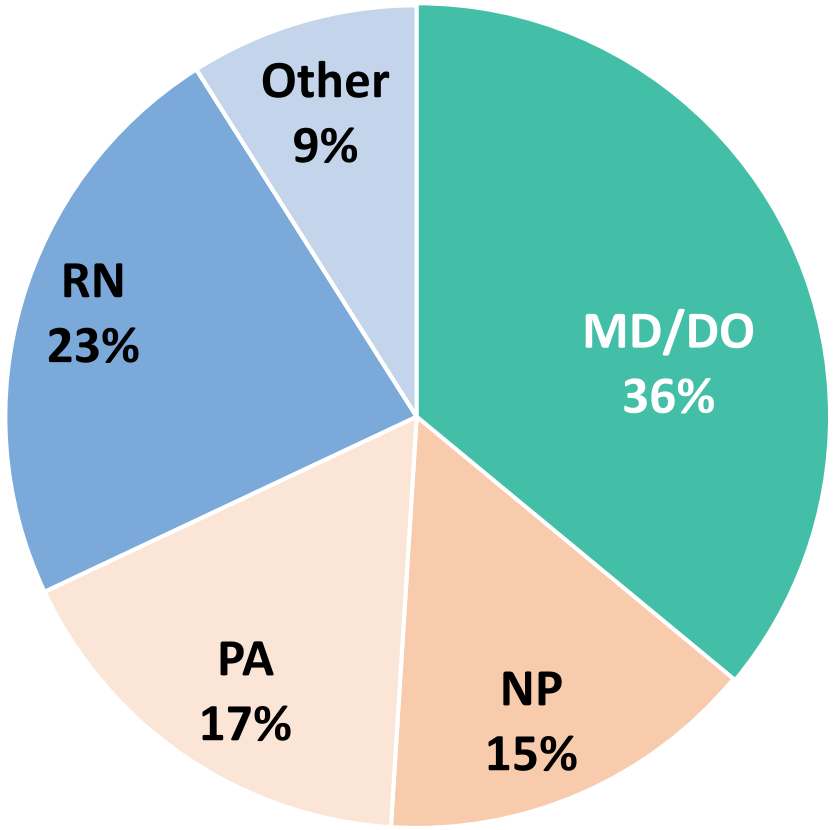
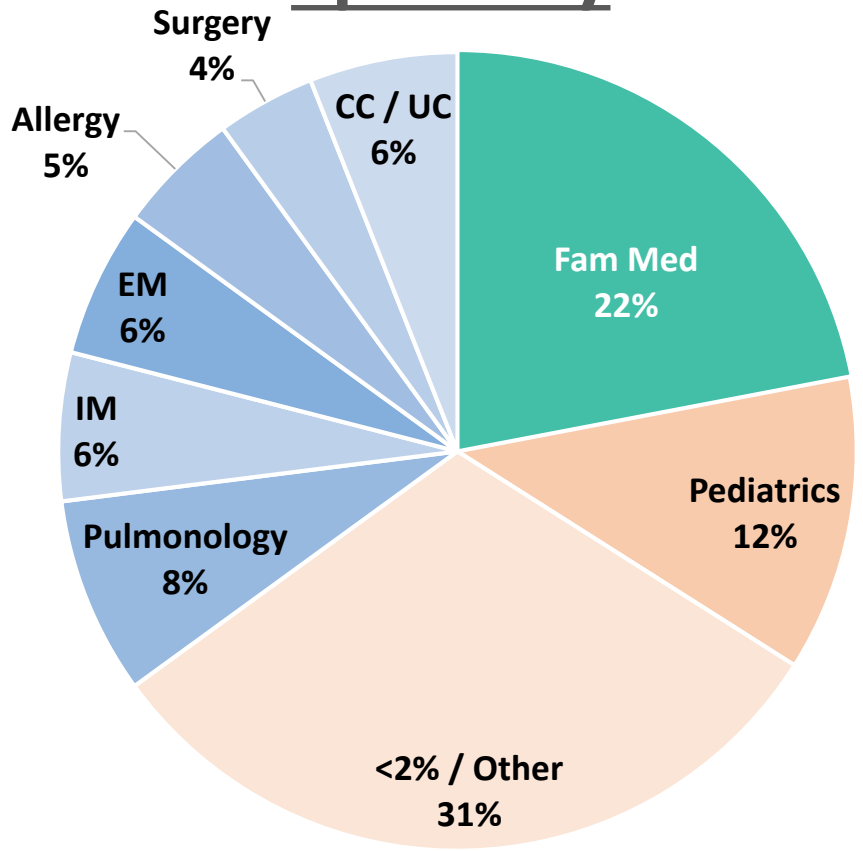
Profession



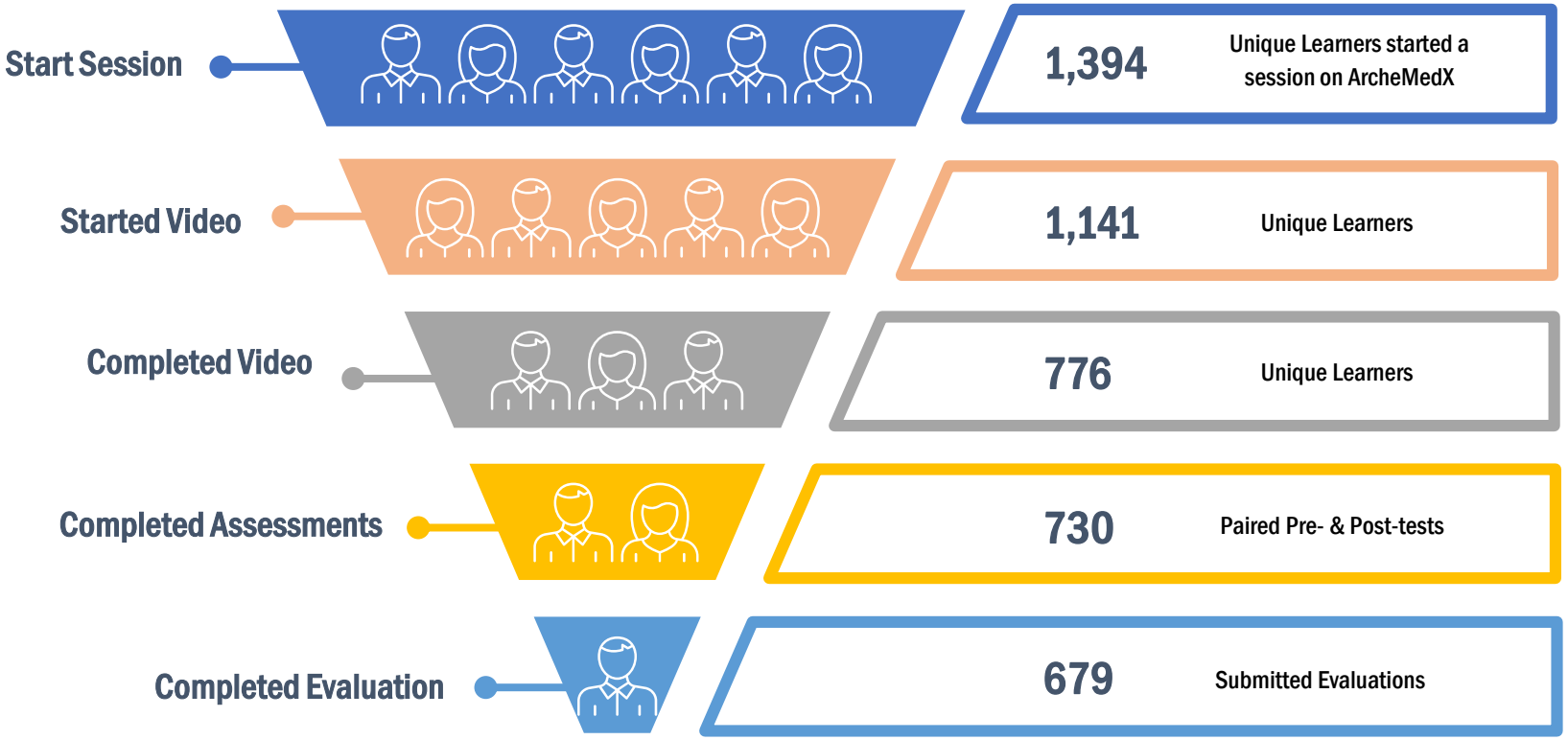
Specialty



N=1521 Post-tests Completed

ArcheMedX Insights: Participation Funnel

Final Report



34%
Of All Learners

Mobile Use

Learners who accessed the curriculum via a mobile device

4% utilized multiple devices across multiple sessions

61%
Of all Learners

Time Watching Video

Learners who watched a portion of every minute of the video

943
Per Week

Estimated Patient Visits Impacted

ArcheMedX Insights:
Learner Engagement

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5,135
Learning Actions*

Questions Answered
2,651

Resources Viewed
1,301

Notes Taken
66

Resources Downloaded
1,003

5.9

Engagement Score
Average number of actions taken by each learner

Engagement Score for this activity is
59%
higher than the ArcheMedX Benchmark

actions taken while watching the **educational videos. Includes all learners who started a session*

N=3,052

Level 2 Outcomes: Satisfaction
Learner Response to Educational Needs

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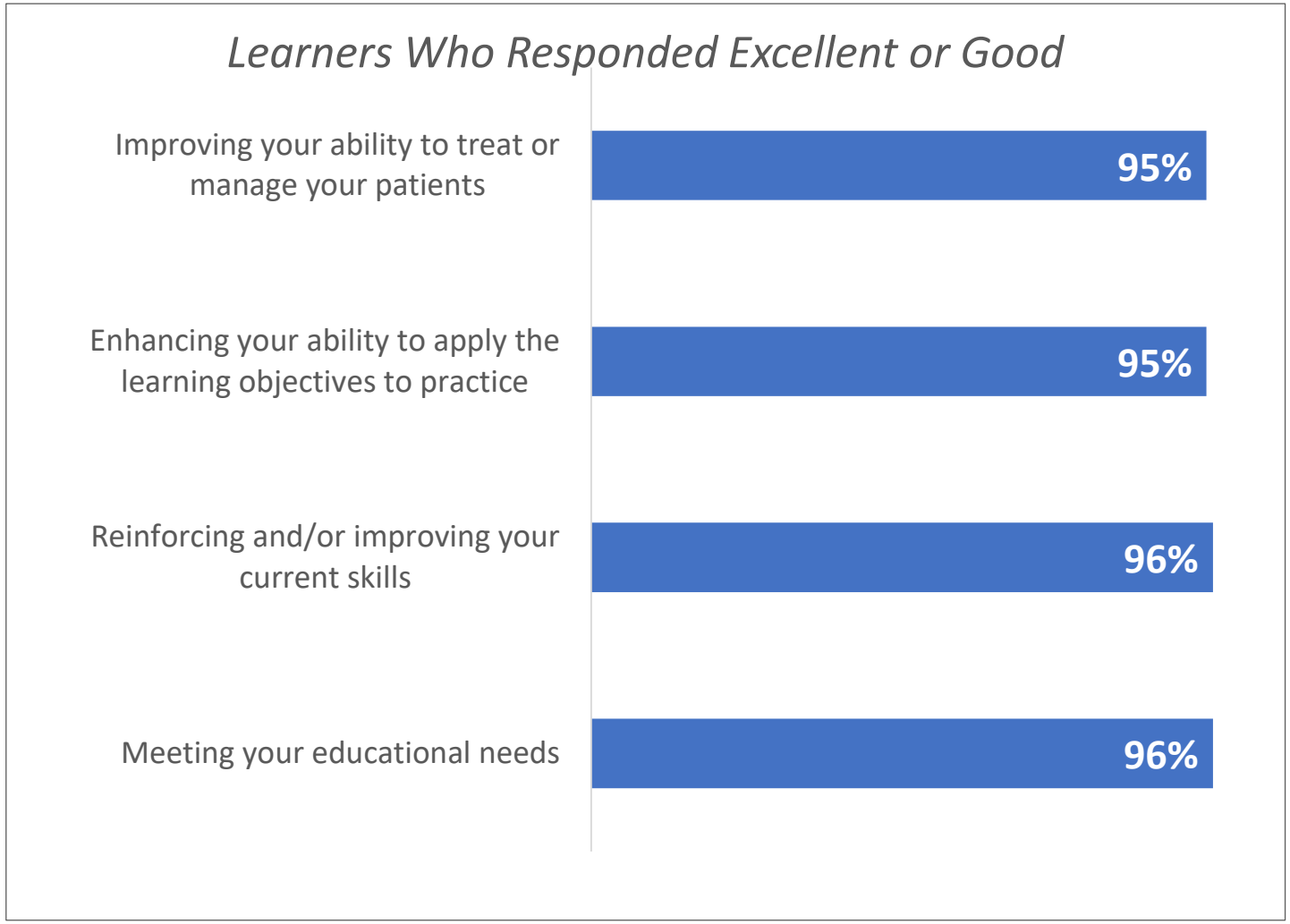
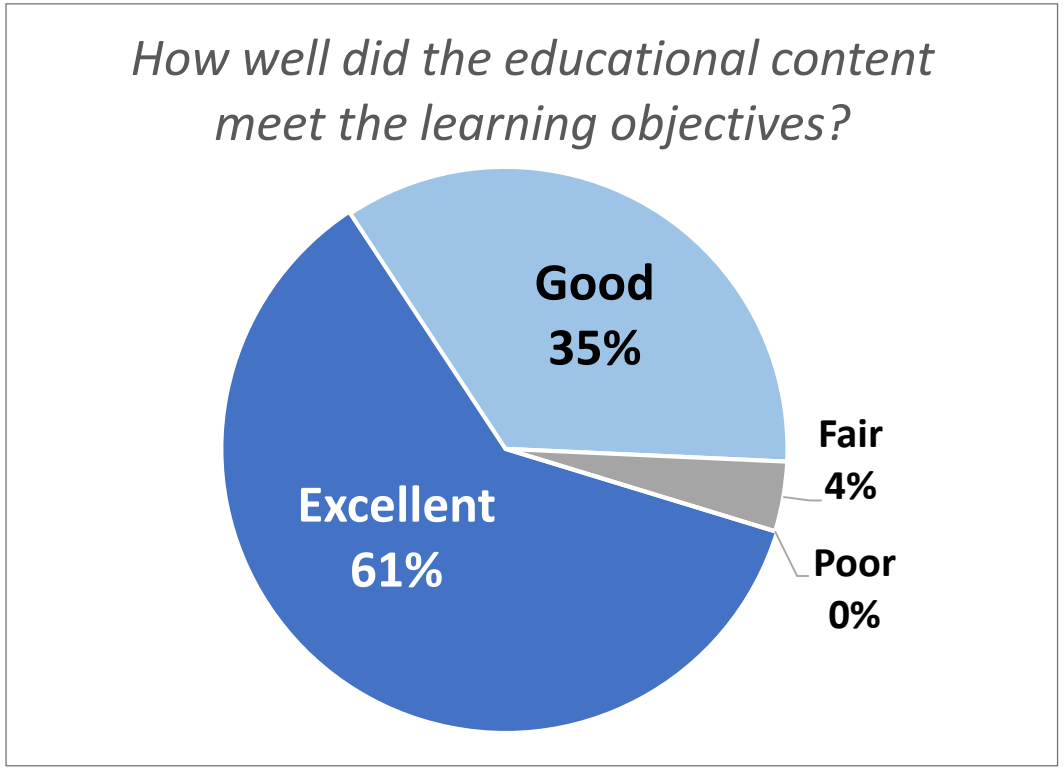


98% of Learners indicated the activity was **free** of any commercial bias



N=1442 Evaluations Completed

Levels 3&4:
Gains in Knowledge and Competence

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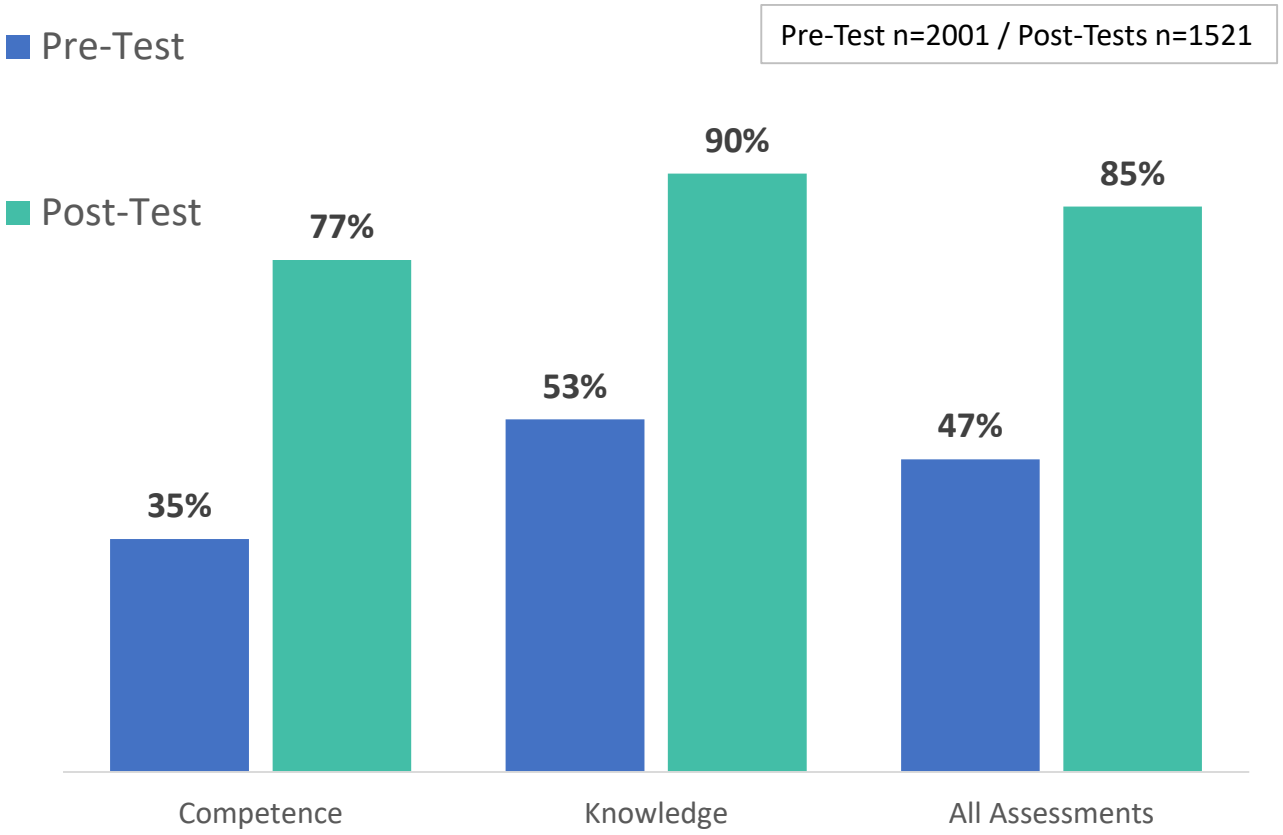
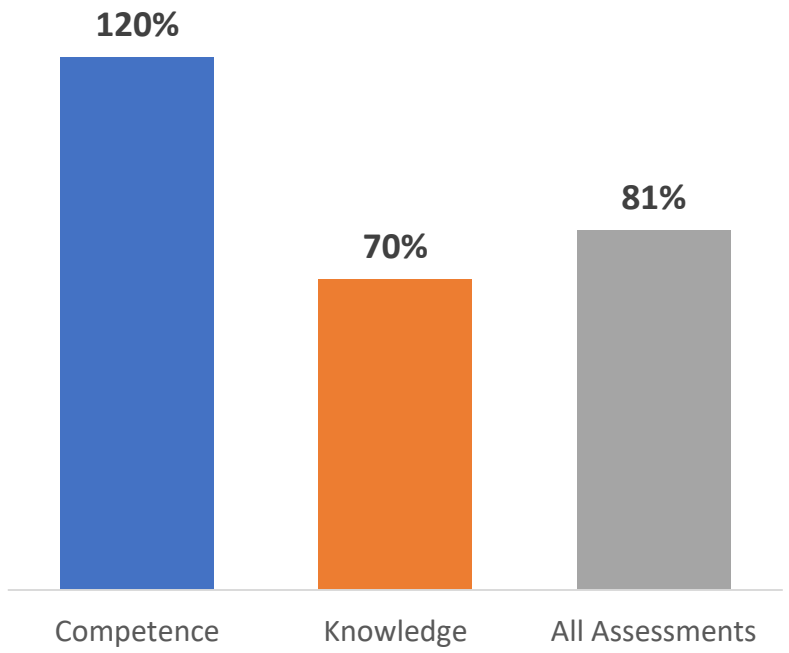
Pre- and Post-Test Assessment



Relative Change

Pre-Test to Post-Test



Level 3 & 4 Outcomes: Learning by Objective

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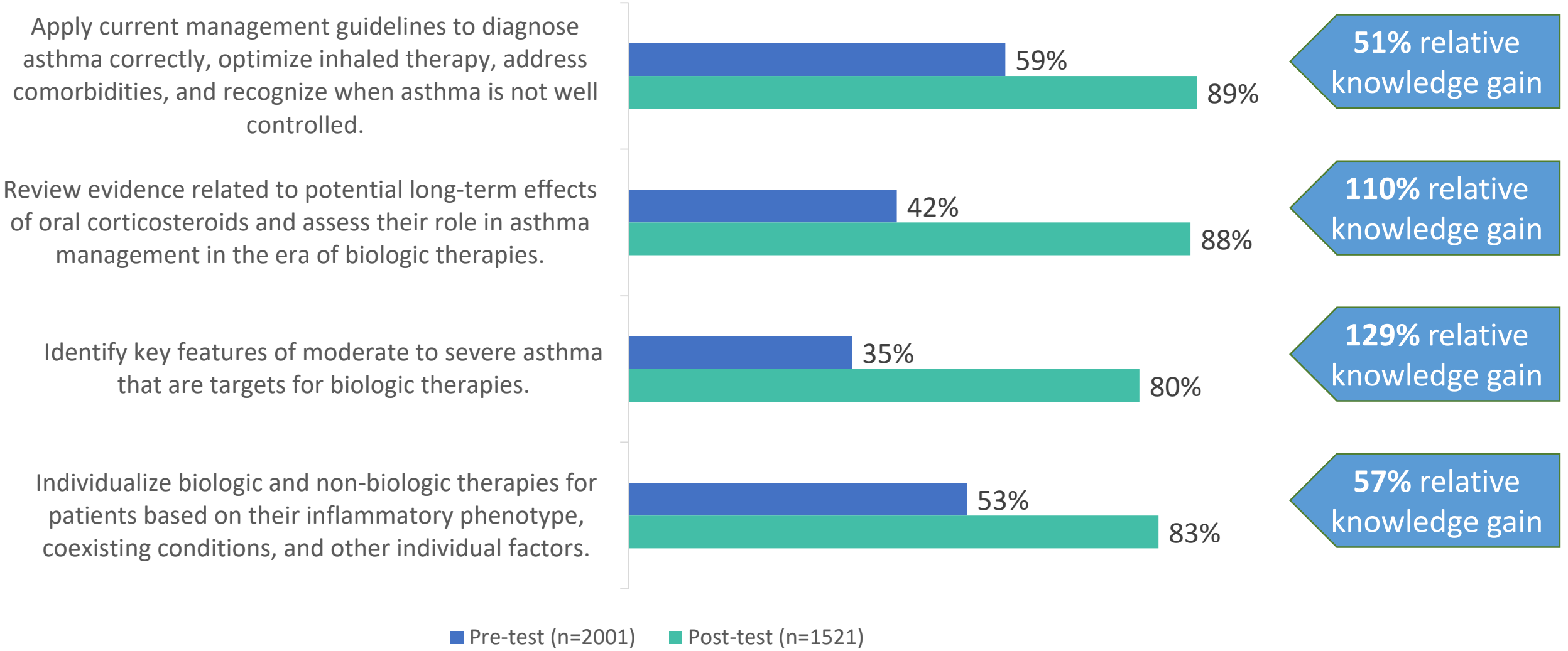

ArcheMedX Insights:
Confidence Based Assessment

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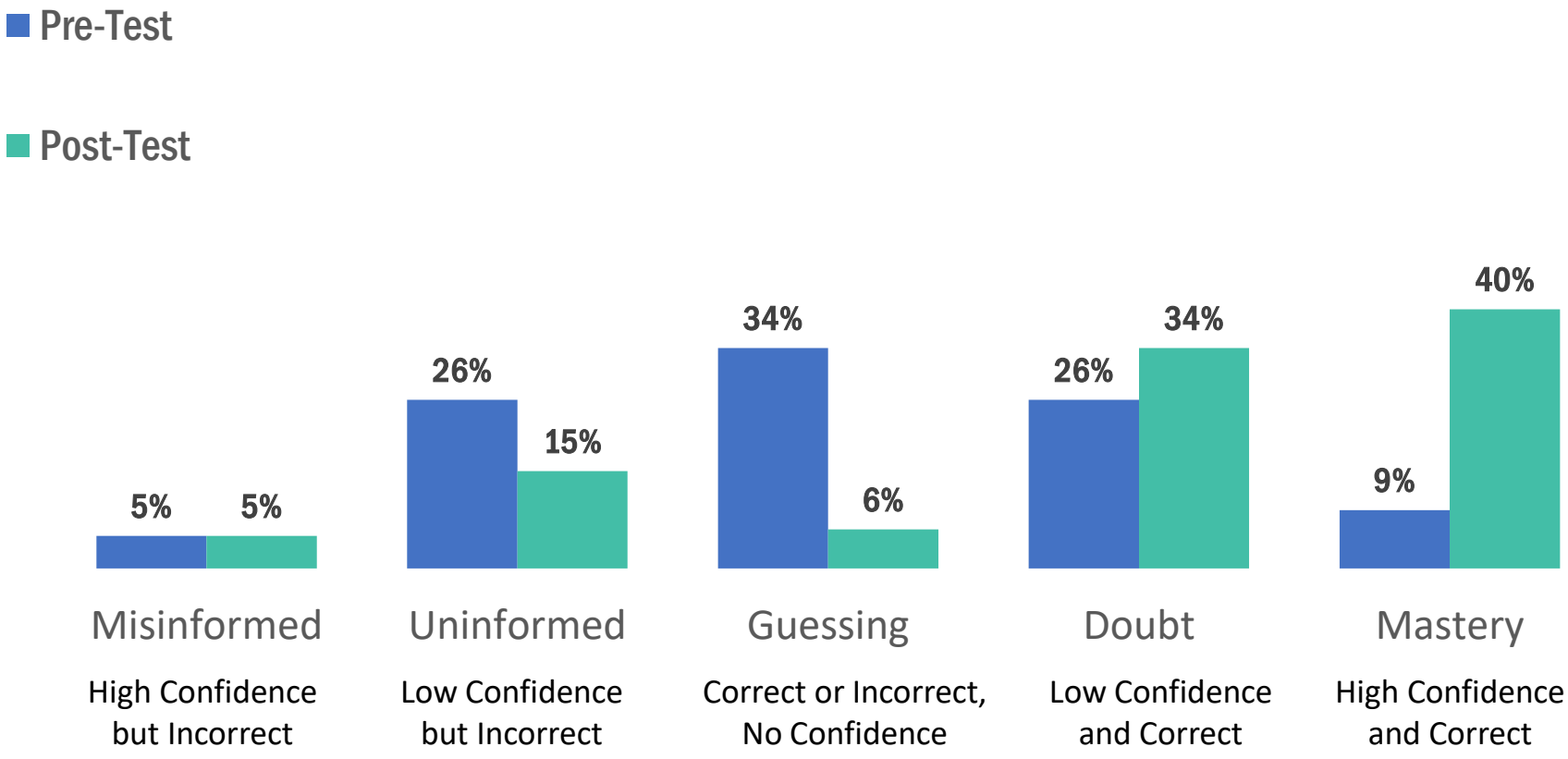
Confidence-based Assessment goes beyond measuring correctness and dives deep into understanding a learner's belief (confidence) in their knowledge and competence, specifically looking at each question and requiring the learner to indicate the confidence in their answers.



209%

Rise in Mastery

Relative Increase in Learners who show **High Confidence** and **Correctness**

34%

Still Have Doubt

Learners who are **Correct** but have **Low Confidence**

N=730

Assessment Questions
Question 1

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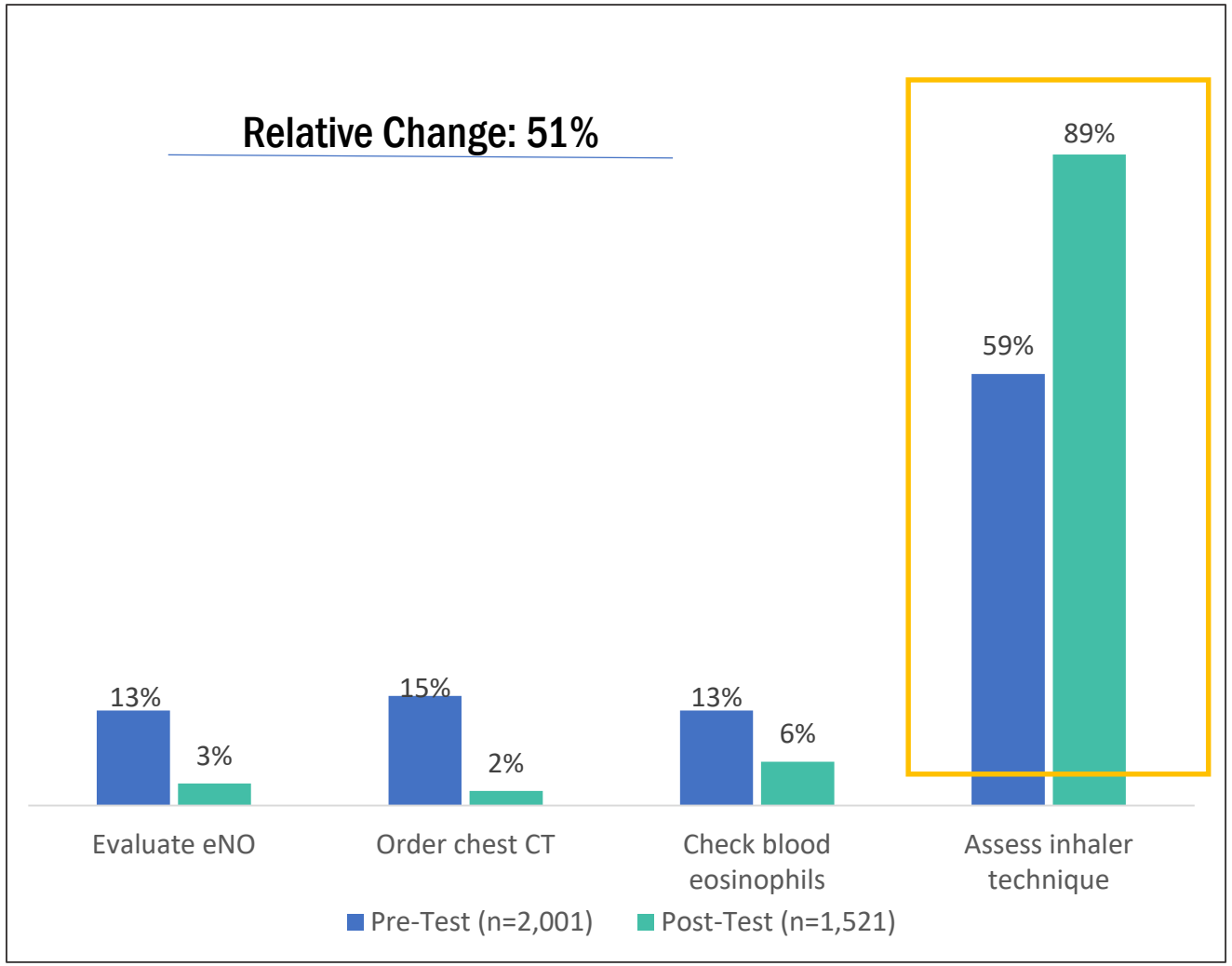
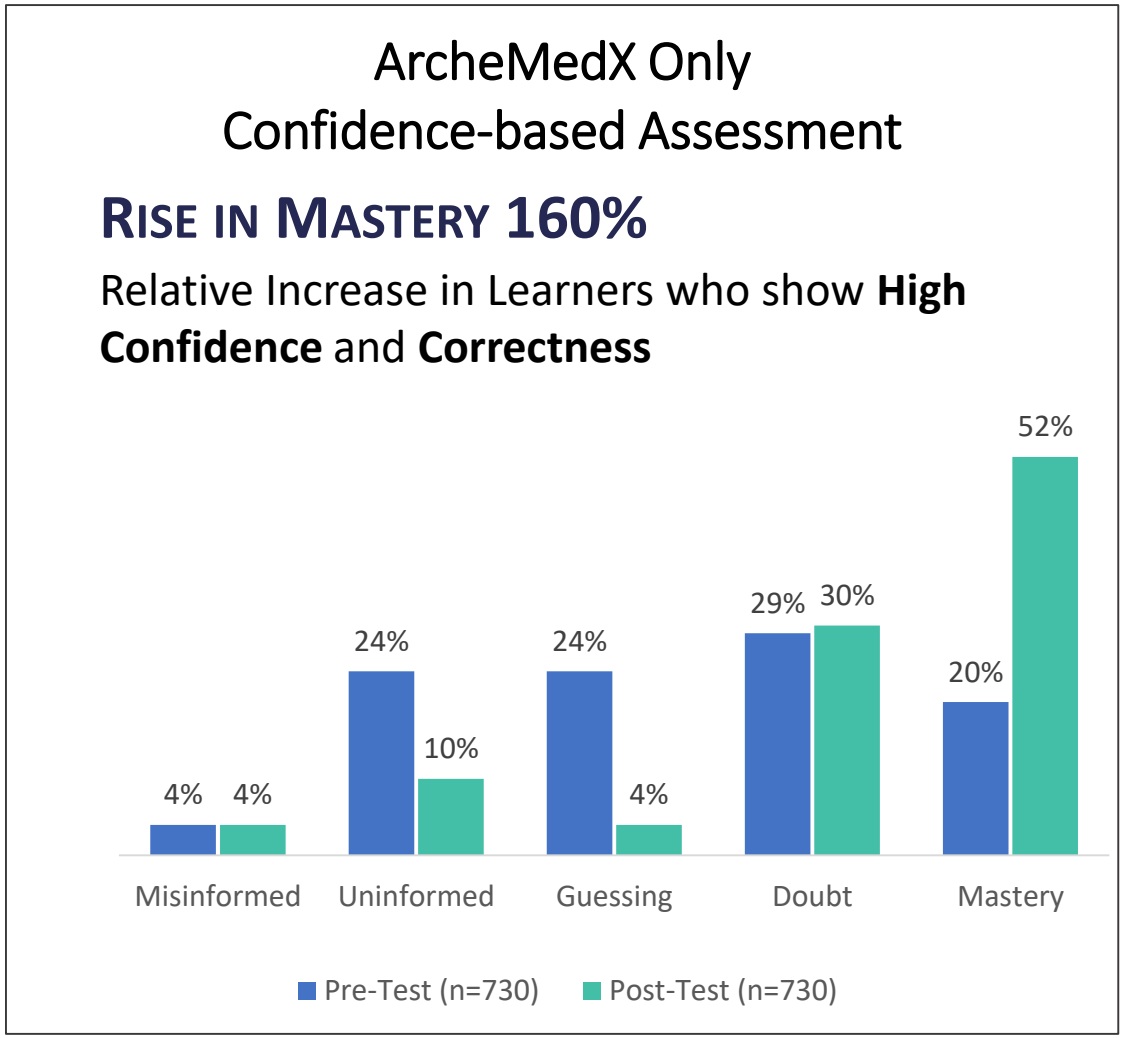
Q1: When a patient presents with uncontrolled asthma despite high intensity therapy, what is the most important initial assessment to consider?





Assessment Questions
Question 2

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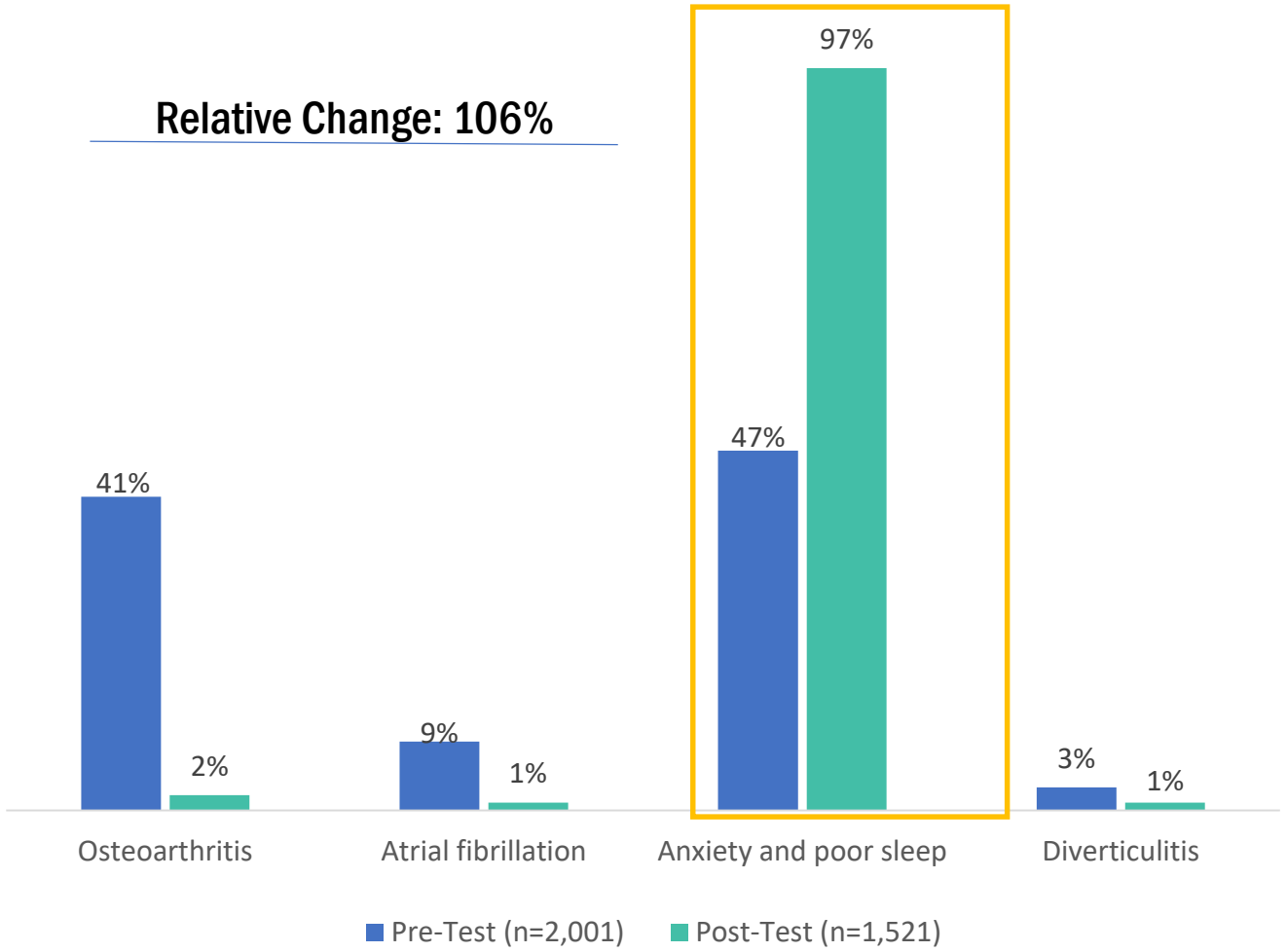
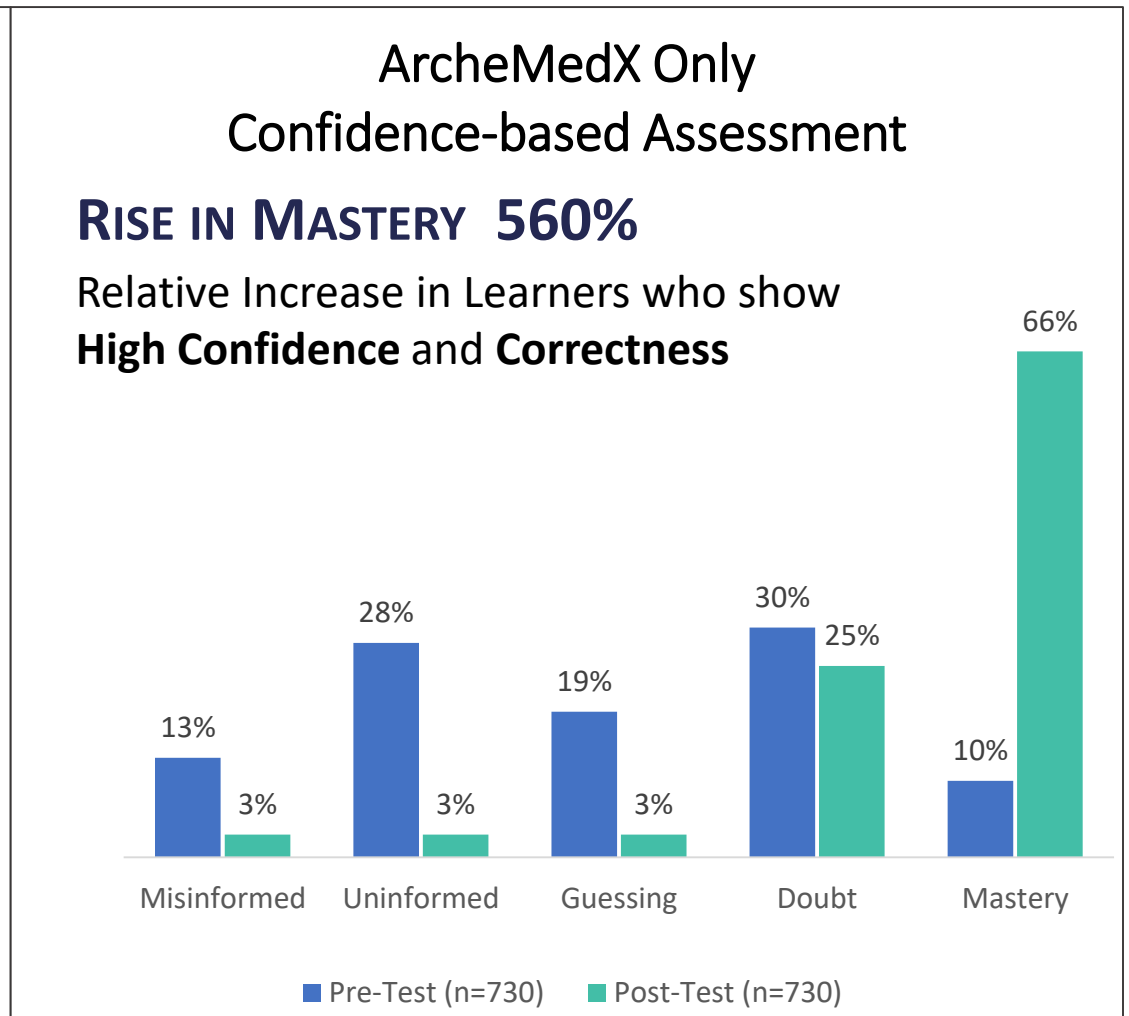
Q2: Chronic oral corticosteroid use has been associated with which of the following adverse effects?





Assessment Questions
Question 3

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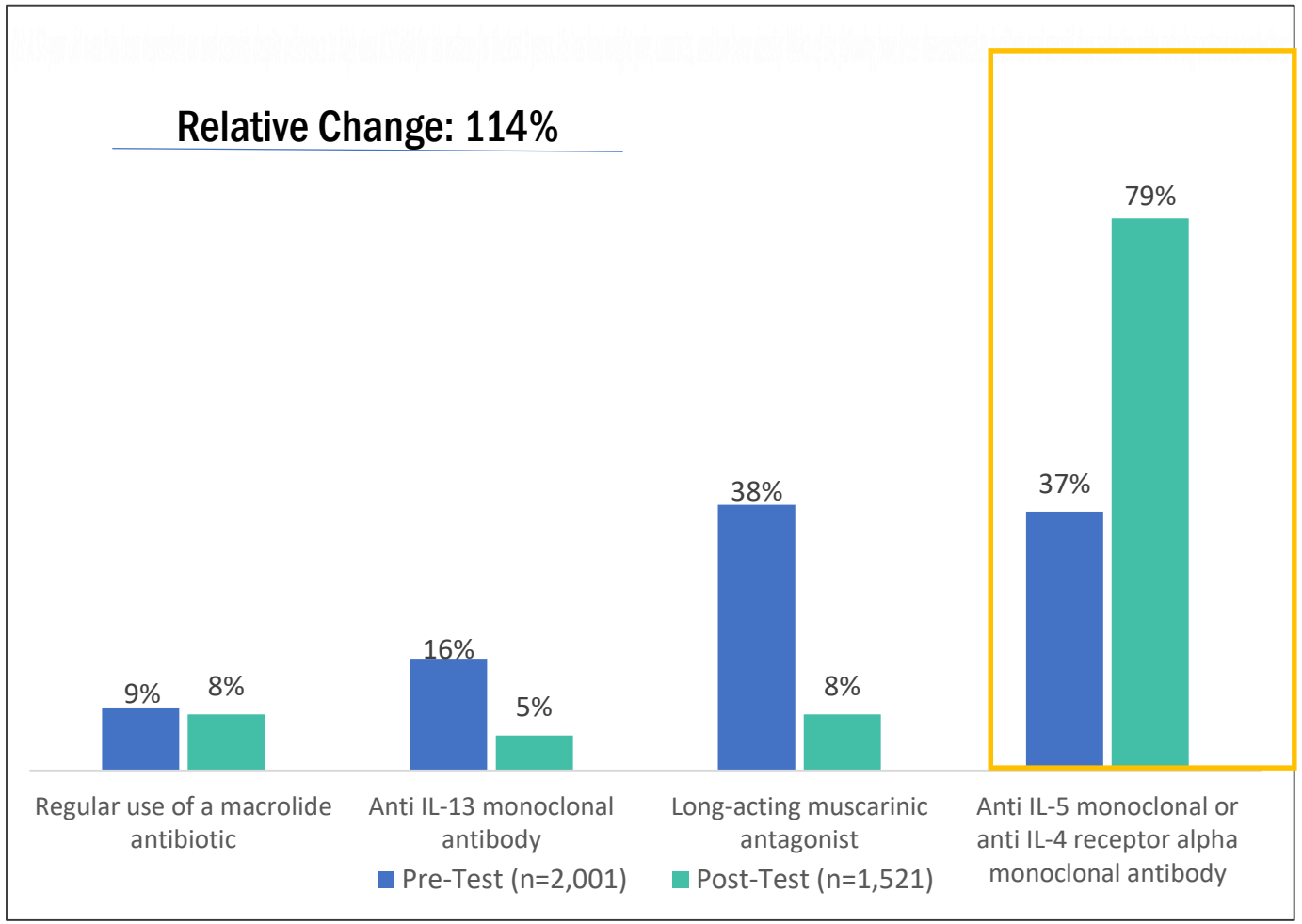
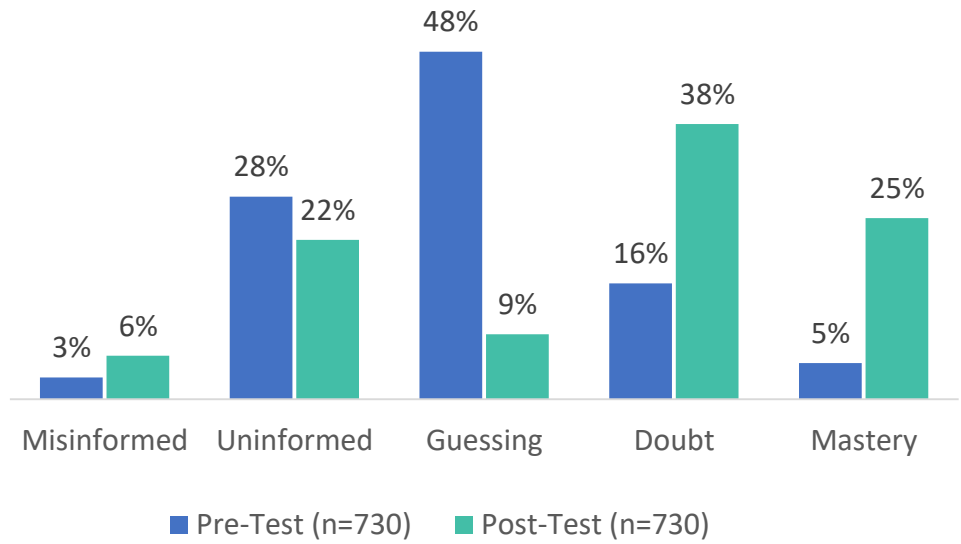
Q3: A 52-year old man has been dependent on oral steroids despite adherence to high dose ICS/LABA for his asthma for the last 3 years. He has had weight gain, cataracts, and low bone density. Which of the following have been demonstrated to facilitate oral steroid dose reduction while reducing asthma exacerbations:



ArcheMedX Only
Confidence-based Assessment

RISE IN MASTERY 400% Relative Increase in Learners who show **High Confidence** and **Correctness.**

Considerable decrease in guessing, yet doubt remains high. Potential persistent gap.



Assessment Questions
Question 4

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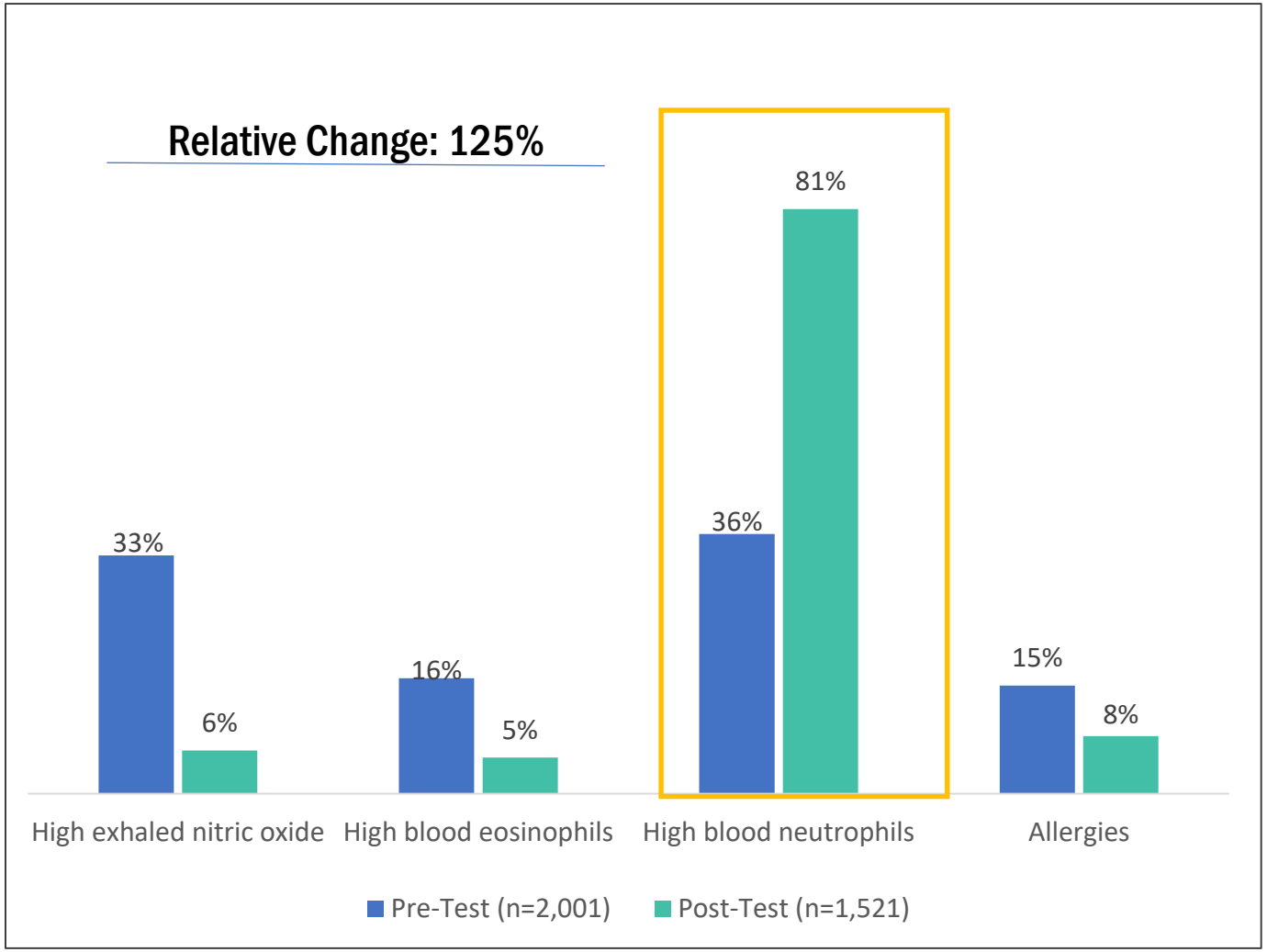
Q4: Type 2 inflammation is associated with all of the following except:

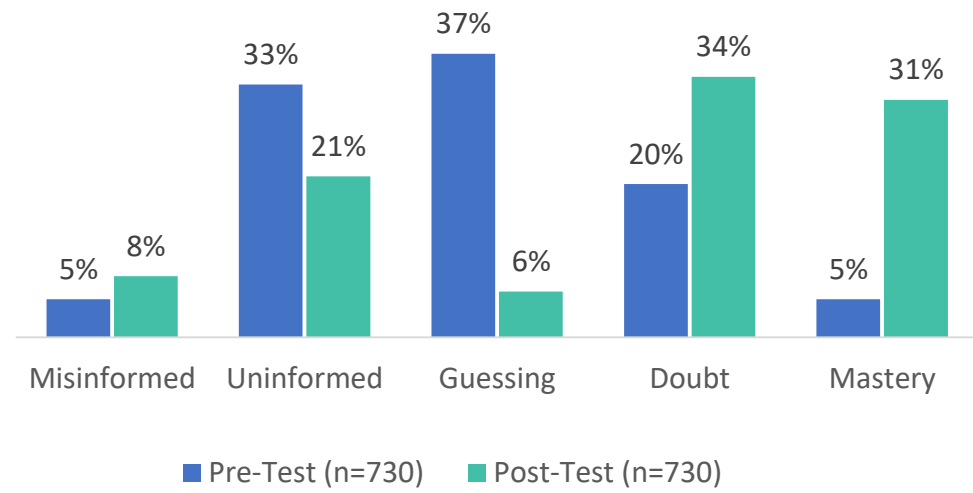


ArcheMedX Only
Confidence-based Assessment

RISE IN MASTERY 520%

Relative Increase in Learners who show **High Confidence** and **Correctness**

Considerable decrease in guessing, however doubt remains high. Potential persistent gap.



Assessment Questions
Question 5

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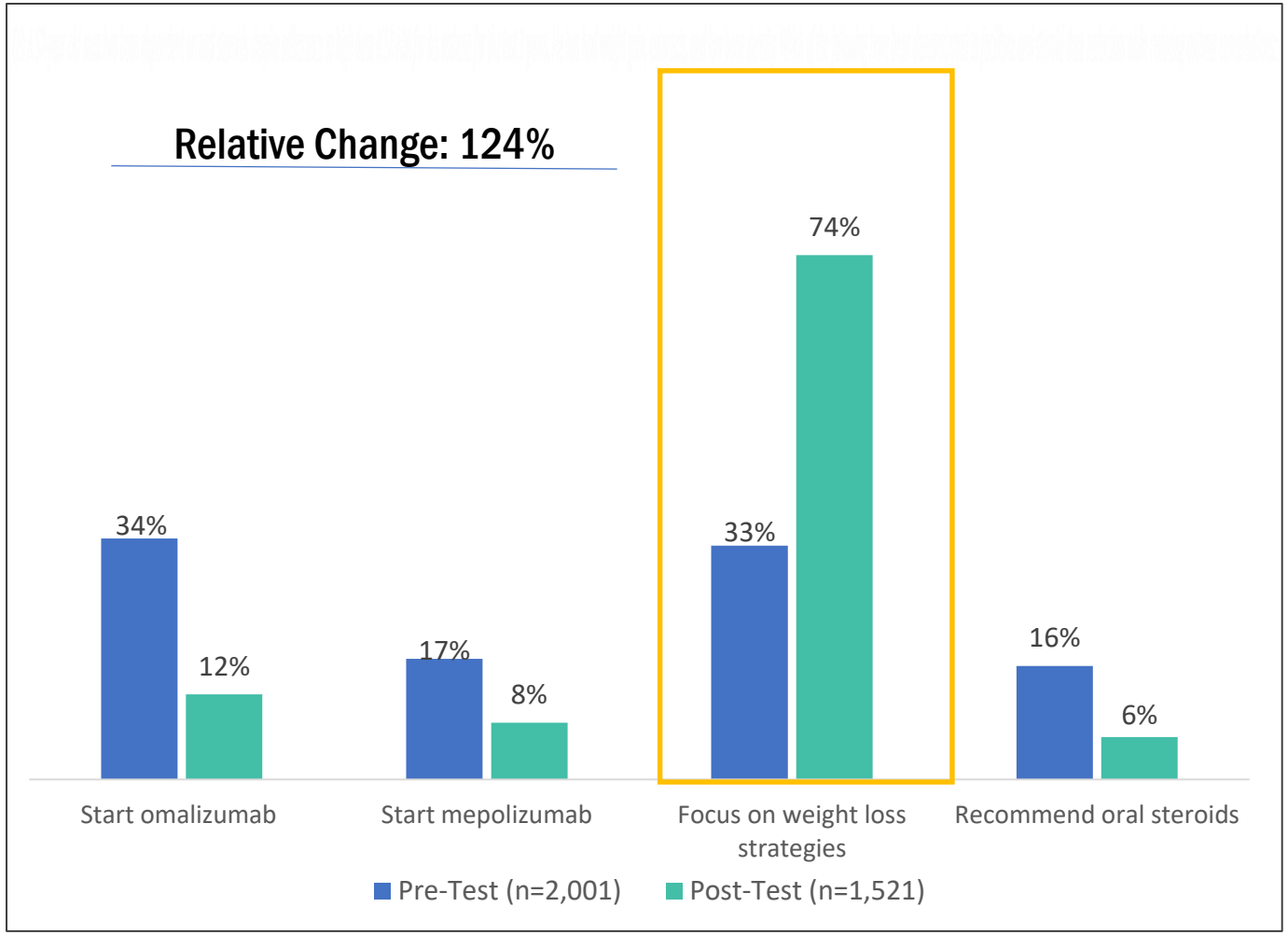
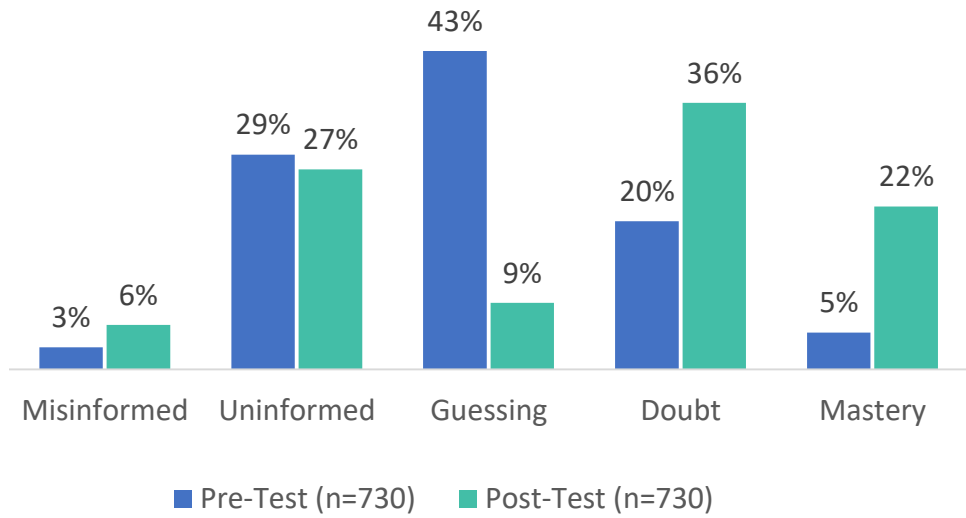
Q5: Your patient is a 55-year-old obese woman (BMI 35 mg/kg2) with severe persistent asthma (onset at age 39) with uncontrolled symptoms despite intensive therapy. Comorbidities include GERD and sleep apnea controlled with PPI and CPAP. Skin prick testing negative for common aeroallergens. IgE = 100 IU/L but allergy testing is negative. Absolute eosinophil count is 100/uL. FeNO = 10 ppb. Induced sputum shows neutrophilic inflammation. What would you do next?



ArcheMedX Only
Confidence-based Assessment

RISE IN MASTERY 340% Relative Increase in Learners who show **High Confidence** and **Correctness.**

Considerable decrease in guessing, yet doubt remains high. Potential persistent gap.



Assessment Questions
Question 6

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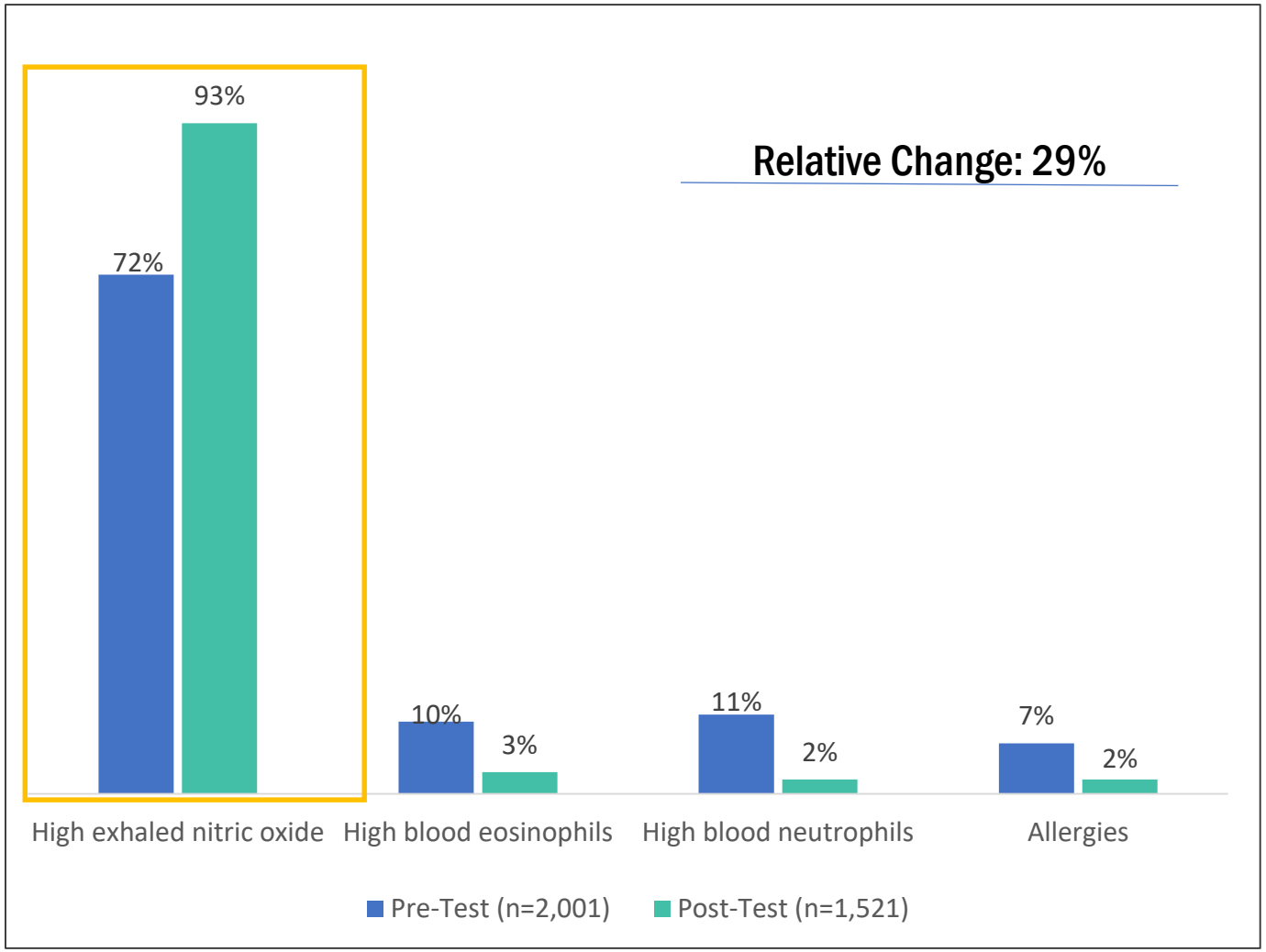
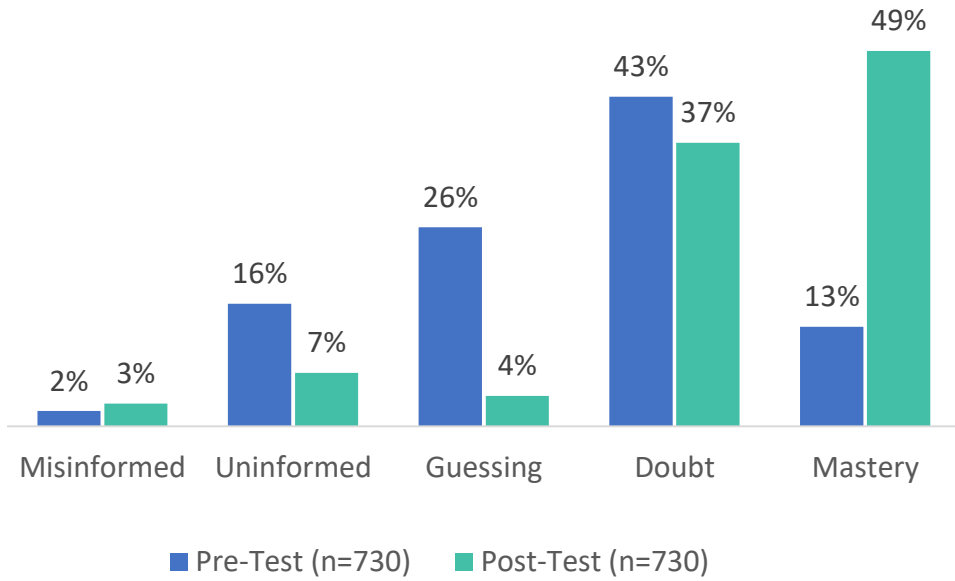
Q6: When a patient presents with uncontrolled asthma despite high intensity therapy, what is the most important initial assessment to consider?



ArcheMedX Only
Confidence-based Assessment

RISE IN MASTERY 277% Relative Increase in Learners who show **High Confidence** and **Correctness.**

Considerable decrease in guessing, yet doubt remains high. Potential persistent gap.



ArcheMedX Insights:
Learning Moments Questions

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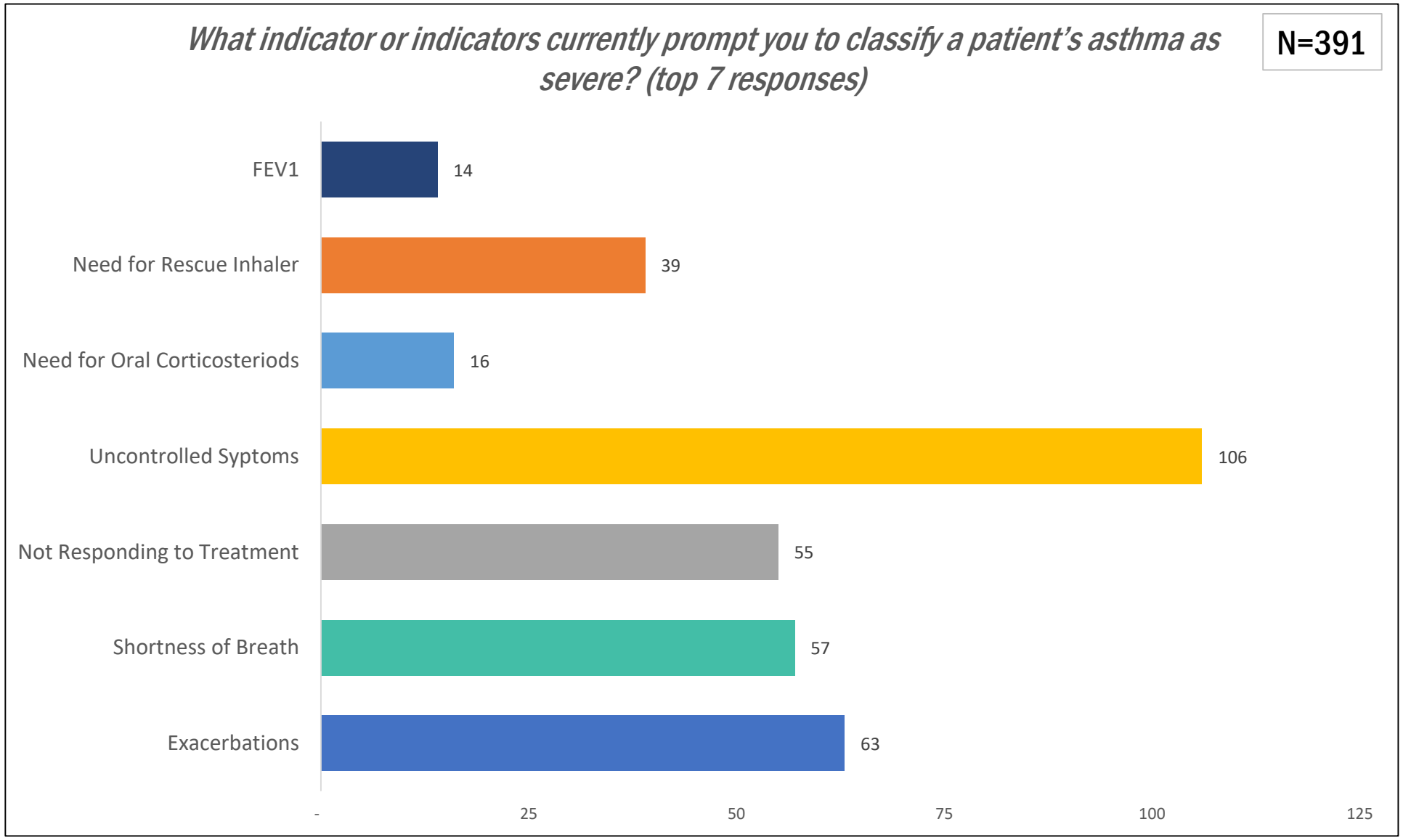

Learning moments are actions built into the activity to encourage uptake of resources, provide nudges or assess knowledge through questions

ArcheMedX Insights:
Learning Moments Questions

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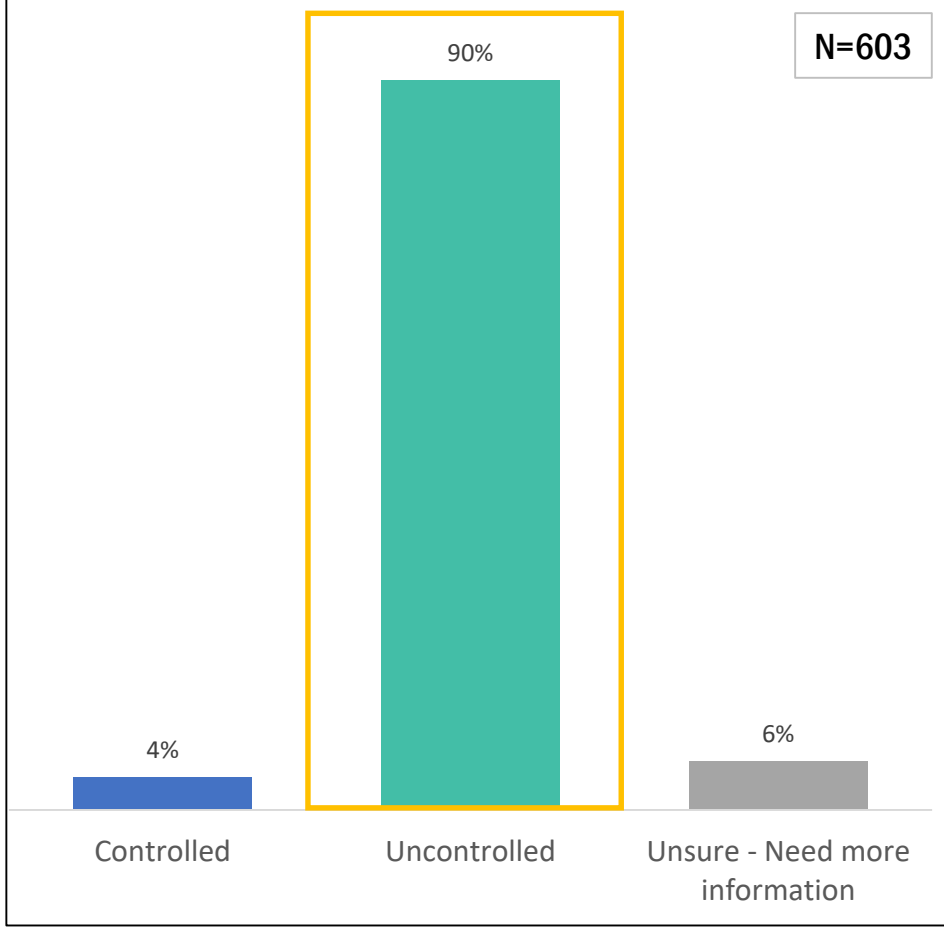
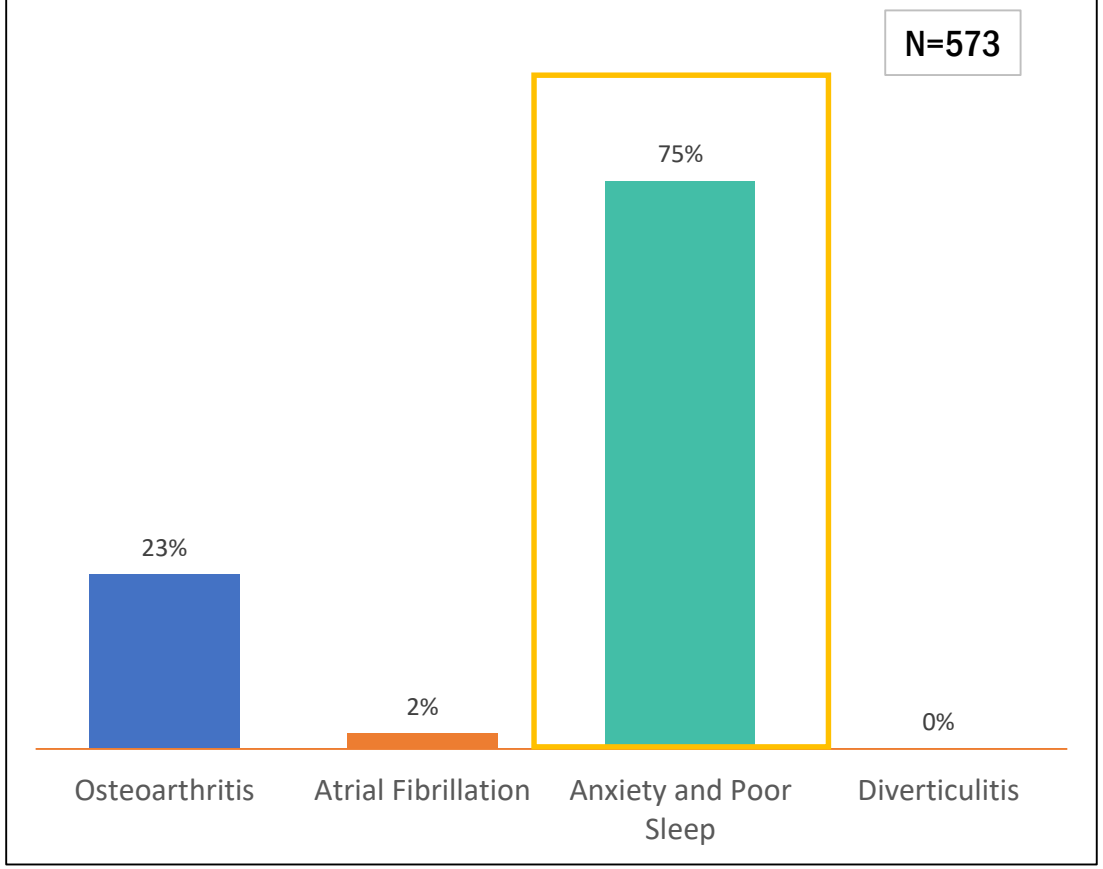
Based on the information you have so far, how would you characterize Greg's asthma?



Chronic oral corticosteroid use has been associated with which of the following adverse effects?



Learning moments are actions built into the activity to encourage uptake of resources, provide nudges or assess knowledge through questions

ArcheMedX Insights:
Learning Moments Questions

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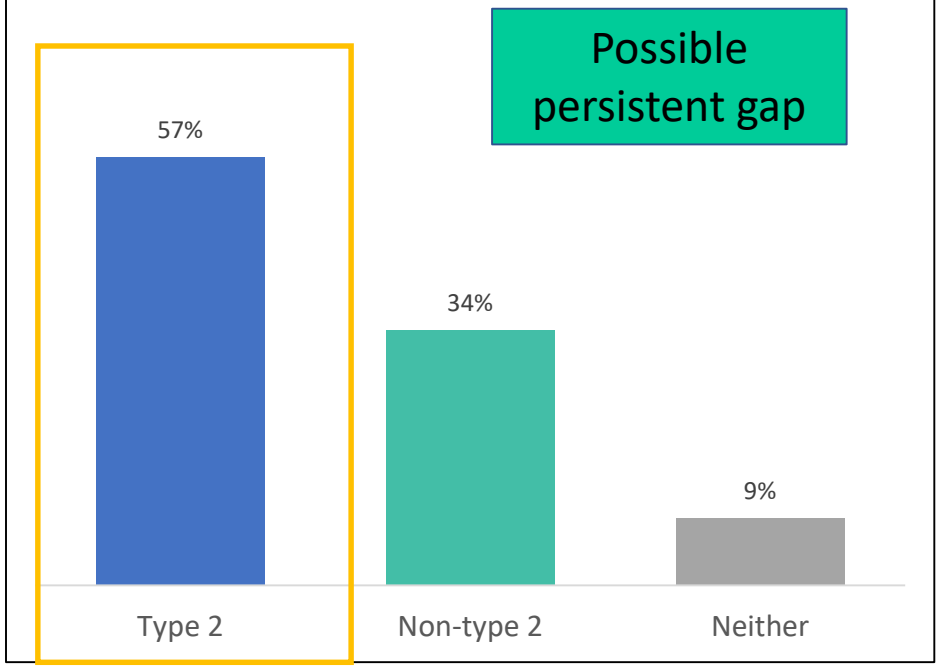
Learning moments are actions built into the activity to encourage uptake of resources, provide nudges or assess knowledge through questions

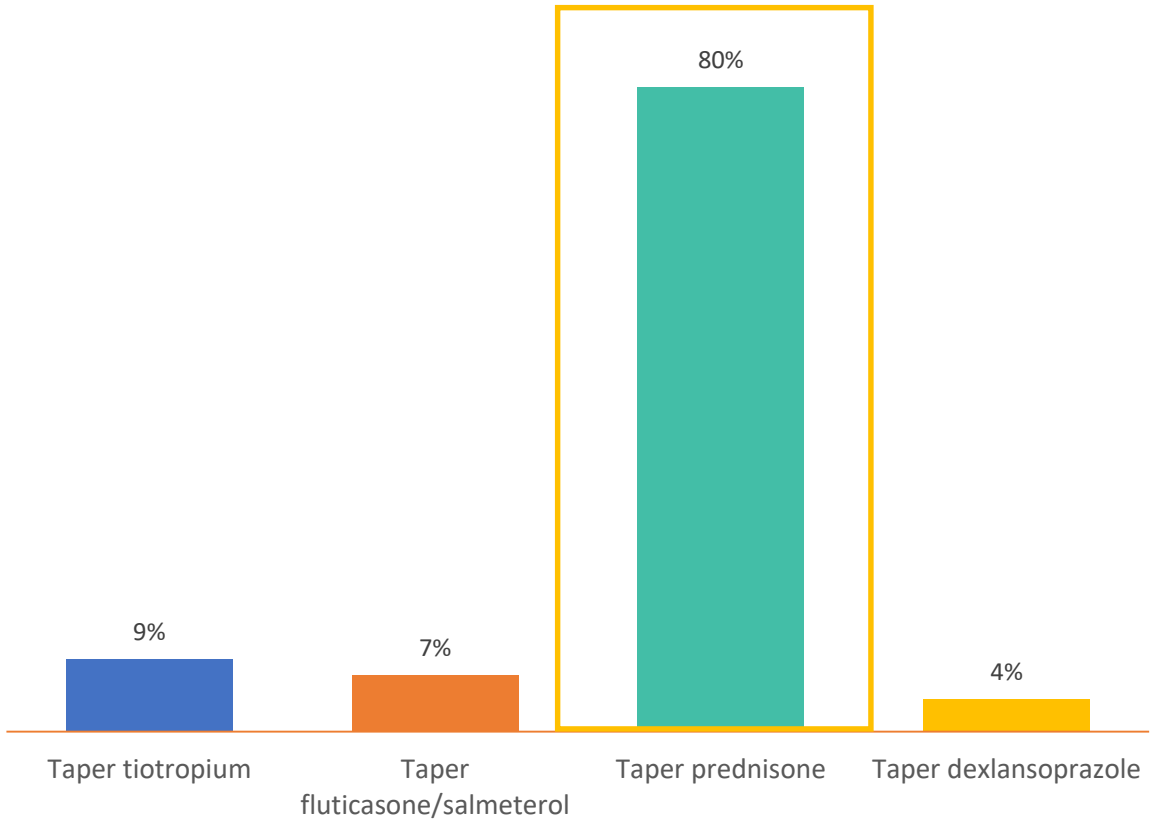
Theresa's CBC and differential indicate that her blood eosinophil count is 60/µL with 4% sputum eosinophils, how would you classify her asthma endotype?

N=543



What would you do next with Theresa's asthma regimen?

N=541



Level 4 Outcomes: Intent to Change

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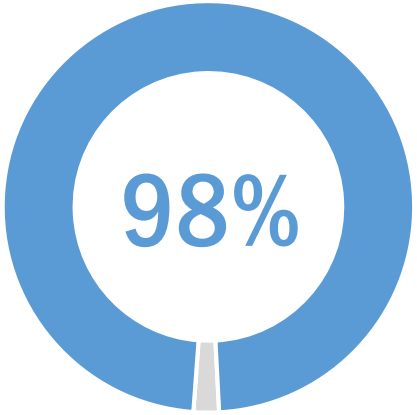
94% of respondents indicated that they are **extremely likely (50%)** or **somewhat likely (44%)** to make changes to their practice after participating in the education

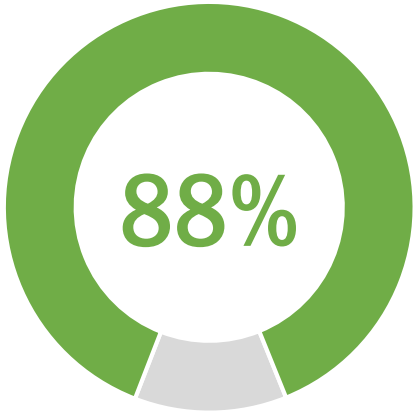
Potential Practice Changes Include

Diagnostic Strategies



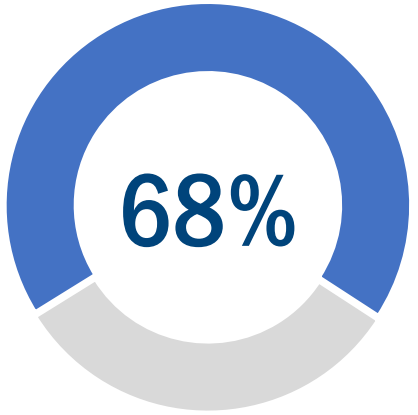
Incorporate different diagnostic strategies into patient evaluations

Screening/Prevention



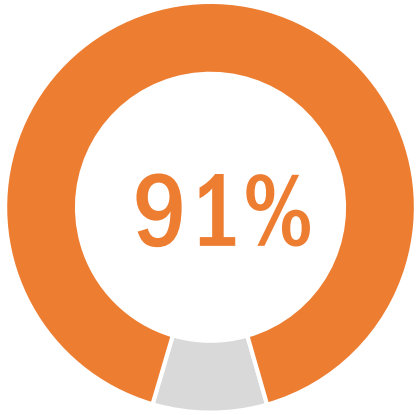
Change my screening/prevention practice

Communication Methodologies



Use alternative communication methodologies with patients and families

Treatment Plans



Modify treatment plans

N=1442 Evaluations Completed

ArcheMedX Insights:
Top Resources Viewed, Downloaded

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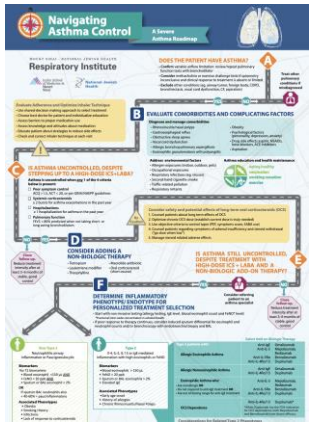
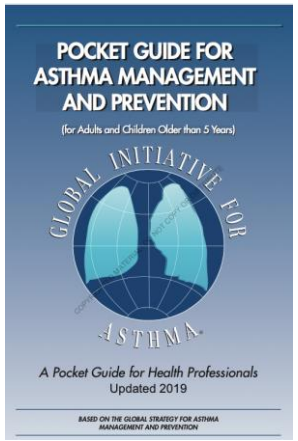
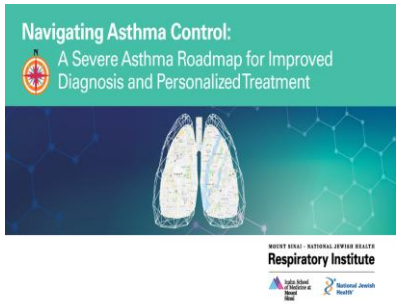
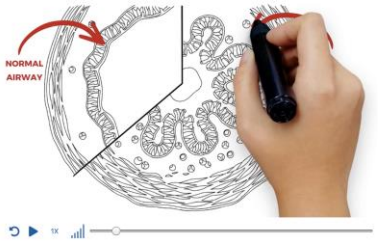
	SEVERE ASTHMA ROADMAP	GUIDELINES	SLIDE DECK	PATHOBIOLOGY	MEDFACTS (4)
Description	Navigating Asthma Control: A Severe Asthma Roadmap	2019 GINA Guidelines	Navigating Asthma Control Slide Deck	Video: Pathobiology of Asthma	Respiclick, Aerochamber, Using a Diskus, Respimat
Views	417	103	55	65	135
Downloads	201	129	47	25	316
Thumbnail					

Infographic Clinical Reference Aid

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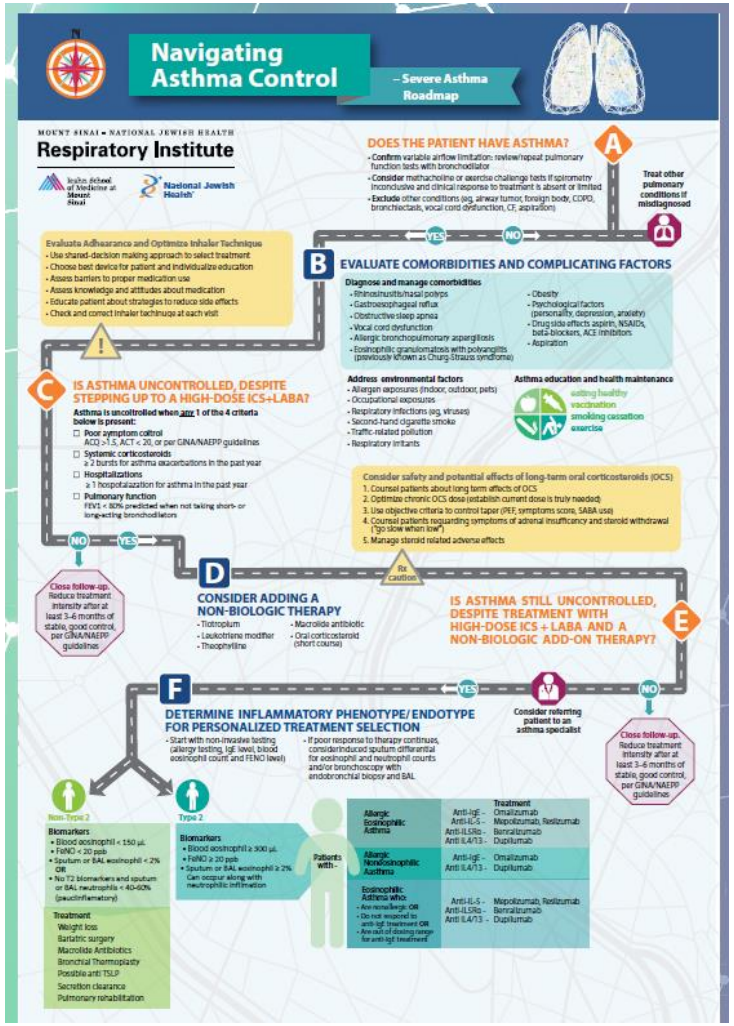
93% of completers indicated that they were likely to use the infographic clinical reference aid in practice.

> "Excellent program. Great educational aids. I like the road map."
> **– online participant**

n=1,442



Learner Take Aways

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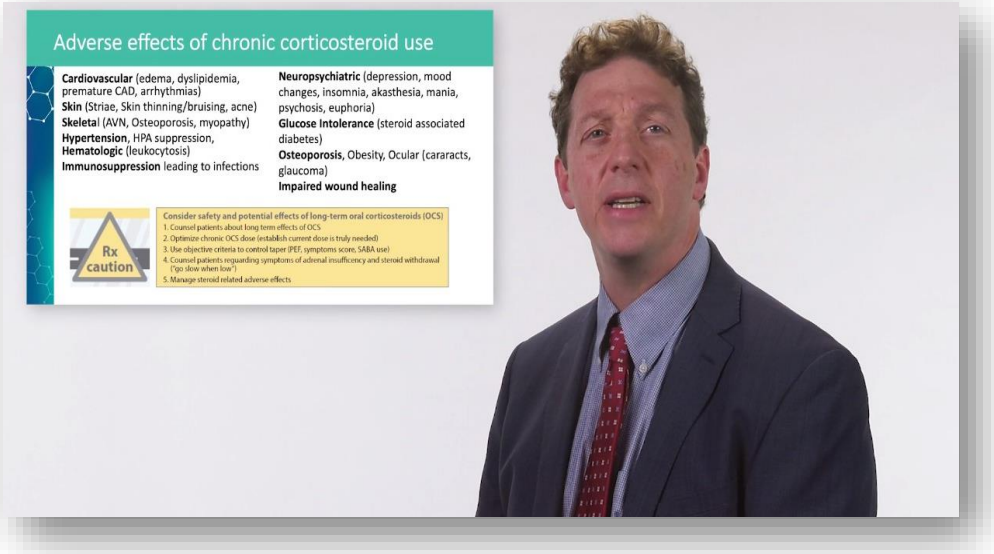
- Classification of asthma type 2 versus non-type 2 and the different treatment avenues for reducing the use of OCS
- Improving history taking skill, evaluate comorbidities and complicating factors
- Indications for Biologic therapy of uncontrolled asthma
- How important it is to determine asthma endotype in poorly controlled asthma
- Identify features of moderate to severe asthma that are targets for biologic therapy
- Assessment evaluation of inflammatory markers for treatment of asthma
- The role of biologics in reducing use of OCS
- Effects of chronic use of corticosteroids, phenotype and FeNO relevance
- Importance of measuring Eosinophils and IGE in patients
- Refer sooner to determine best regimen for better outcomes
- Better understanding of the complexities of asthma
- Road map – great resource



Recommendations for Future Topics

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- COVID-19 management
- Atopic Dermatitis
- COPD management
- Pediatric asthma
- More asthma and COPD
- Asthma exacerbation during COVID treatment
- EoE
- Biologic therapy
- Hypertension
- Immunotherapy for Allergies/Asthma
- Asthma COPD/Overlap
- Pediatric COVID-19
- How to select biologics

Learner Feedback

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Examples of positive feedback:

- One of the best online CME programs I've participated in.
- Very clear and valuable information.
- The presentation format was effective, straightforward and held my attention. Specifically enjoyed the mix of video, slides, animation, and interactive questions. The case studies were excellent.
- Excellent program. Great educational aids. I like the road map.
- It was very thorough and up to date.
- Excellent presentations and resources right at hand with just one click instead of looking up on my own resources which I would never have time to look up. Clear presentations and concise to the point to keep the audience attentive even without caffeine load. I would take more courses if the quality is this good.

Constructive feedback and observations:

- Any use of combined anti-IL therapy in EGPA?
- I'm a dermatologist. I took it for the atopic dermatitis patients.
- It is not always possible to implement suggested management protocols in resource poor countries because of unavailability of equipment, laboratory facilities and newer and more expensive drugs.
- This needs to be a 60 min activity.

Root Cause Analysis

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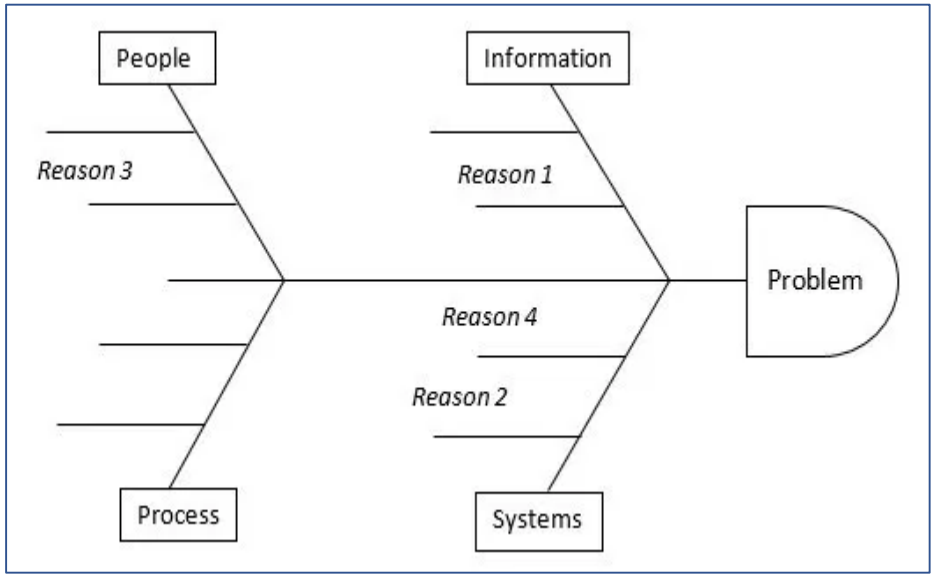
Significant learning gains were noted across all learning objectives and across all questions; however, data from confidence-based assessment demonstrate that gaps persist in the following areas:

Persistent Gap (1): Stepping up therapy to a biologic (Question 3)
While 79% of learners got the answer right upon post-test (an overall relative increase of 116%), 38% of learners reported low confidence in their post-test answer, demonstrating they haven't quite mastered that gap (N=730)

Persistent Gap (2): Pathophysiology and Type 2 Inflammation (Question 4)
While 81% of learners got the answer right regarding pathophysiology and type 2 inflammation upon post-test (an overall relative increase of 127%), 34% of learners reported low confidence in their post-test answer, demonstrating they haven't quite mastered that gap (N=730)

Fishbone Diagram



Root Cause Analysis

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In order to attempt to understand the root cause of these persistent gaps, NJH conducted an analysis upon completion of the online enduring activity to include a summary of focused interviews and key insights from program faculty.

- *The consequences of physicians not understanding the importance of identifying and classifying phenotypes/endotypes and associated biomarker is that patients are not getting the treatment they need. If physicians don't know biologic options they may keep patients on steroids with serious long-term effects. Steroid burden is high.*
- *Physicians are uncomfortable selecting biologic treatments without hands-on experience. This educational program provides important guidance, but confidence requires experience. You can close the knowledge gaps with education, but you can't necessarily resolve barriers within logistics or comfort/confidence with selecting treatments.*
- *Further, if physicians don't have the infrastructure to support prescribing biologics, that is a barrier. That infrastructure and practice burden includes: the ability to manage prior authorizations, communicating with patients, providing resources for payor or other coverage.*
- *Physicians seem to be fairly comfortable with ordering and interpreting tests to support identifying and classifying phenotypes/endotypes and associated biomarkers. What they are not comfortable with is identifying Type 2 Low (Non-eosinophilic) asthma, the nuances of selecting biologics for severe asthma, and coverage eligibility of biologics for patients.*
- *Regarding the target audience: It is important for primary care to learn about the process of diagnosing and treating Type 2 asthma so that they can make effective referrals to allergists and pulmonologists. This education should be most effective for the Specialty audience (allergists and pulmonologists).*
- *Future education should be focused on when to step up therapy and what biologic treatments to select for patients.*

Live Outcomes

Navigating Asthma Control: A Severe Asthma Roadmap for Improved Diagnosis and Personalized Treatment

Live Activity Outcomes Summary

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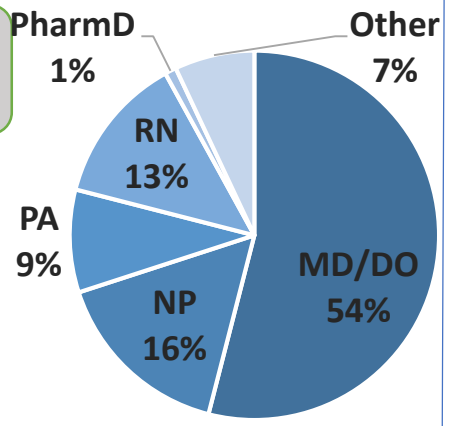
Participation

268 Learners

79% prescribers



Specialties:

Family/Internal Med/ Primary Care (50%)
Pulmonary (13%)
Pediatrics (15%)
Allergy (3%)
Other (19%)

Satisfaction

98% of respondents indicated the activity:
✓ Met their educational needs

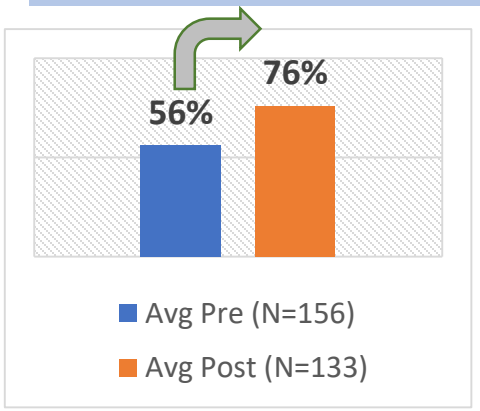
97% of respondents indicated the activity:
✓ Reinforced or improved current skills

96% of respondents indicated the activity:
✓ Met the learning objectives

N=133

95% of respondents indicated the activity:
✓ Improved ability to treat/manage patients

Educational Impact



36% overall relative knowledge gain

50,760 potential patients impacted annually*

Narrowing the Gaps (Knowledge Gain by LO)

Apply current management guidelines	**48%** relative gain
Review long-term OCS use and assess role in asthma management	**35%** relative gain
Identify key features that are targets for biologics	**38%** relative gain
Individualize biologic and non-biologic therapies	**21%** relative gain

Competence and Performance

99% of learners (N=132) report that they are somewhat to extremely likely to make changes to their practice

Top (3) intended changes to practice

(1) Incorporate different diagnostic strategies into patient evaluation (54%)
(2) Modify treatment plans (46%)
(3) Change screening/prevention practice (42%)

35% had already made changes to practice at 6 week follow up

Key Take-Aways

✓ Benefit of biologics for asthma
✓ Heterogeneity of asthma
✓ New therapies and treatment options
✓ Understanding endotypes and phenotypes

Executive Summary: Activity Details

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The CME evening symposium consisted of six two-hour dinner meetings presented by one of two expert faculty from National Jewish Health and Mt. Sinai. They provided their perspective on current and emerging treatments for severe asthma. The experts lead discussion on diagnosis, current and emerging treatments, and the use biologic therapies and oral corticosteroid reduction.

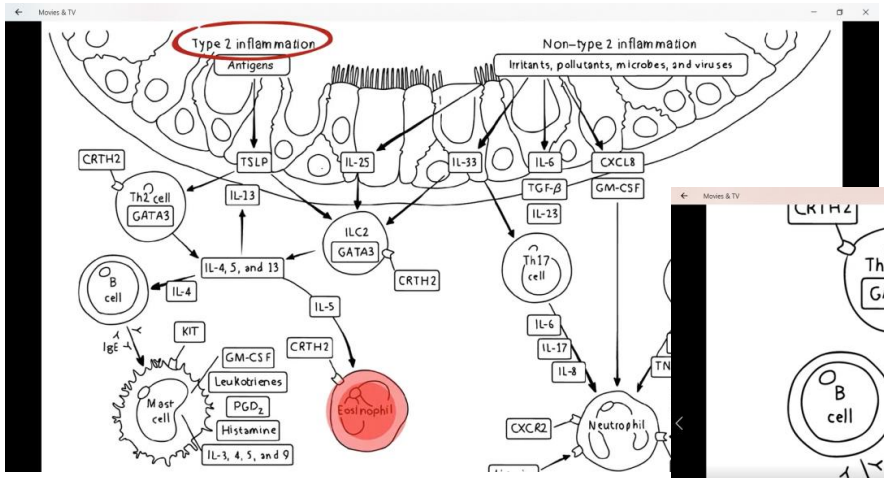
Features included:

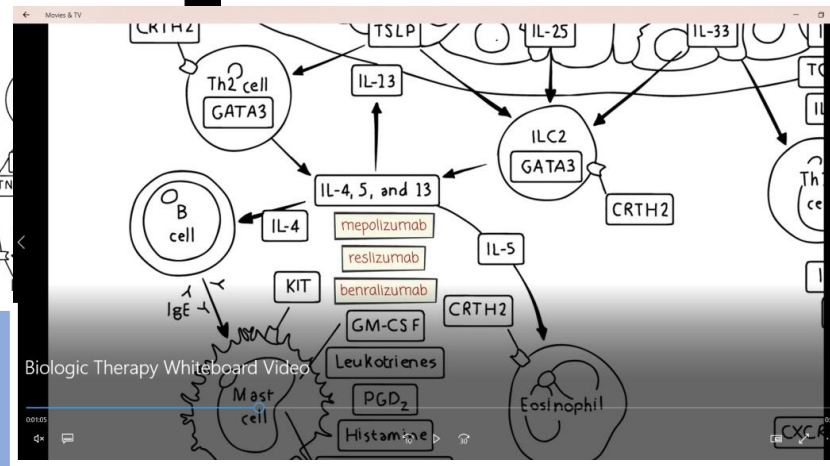
- ✓Whiteboard animation
- ✓Challenging cases
- ✓Infographic clinical aid
- ✓Audience Response System

Patient Perspective Video

Live Meetings

New York, NY (8/14/2019): 78 Learners
Denver, CO (9/4/2019): 53 Learners
Phoenix, AZ (9/5/2019): 47 Learners
Dallas, TX (11/12/2019): 23 Learners
Atlanta, GA (11/14/2019): 36 Learners
Miami, FL (12/5/2019): 31 Learners
Total: 268 Learners





Screenshots of whiteboard animations

Level 1 Outcomes: Participation

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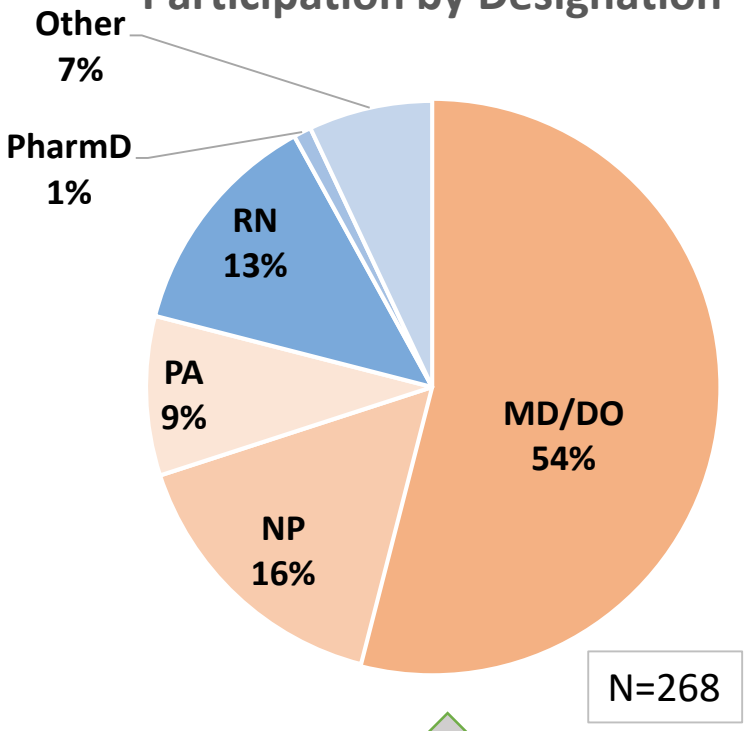
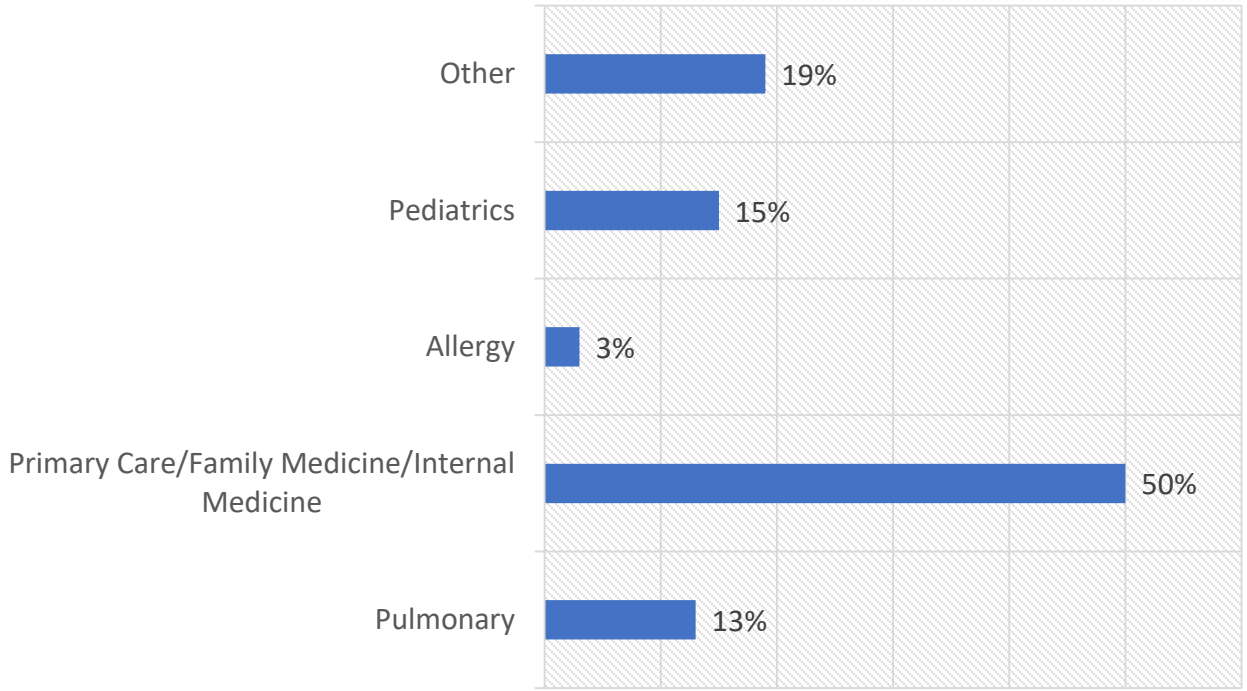
Participation by Designation



N=268

79% of attendees are prescribers

Participation by Specialty



Target Audience

Allergists, Pulmonologists, along with Primary Care Physicians, Pediatricians, Nurse Practitioners, Physician Assistants and Registered Nurses who treat patients with asthma.

Level 2 Outcomes: Satisfaction

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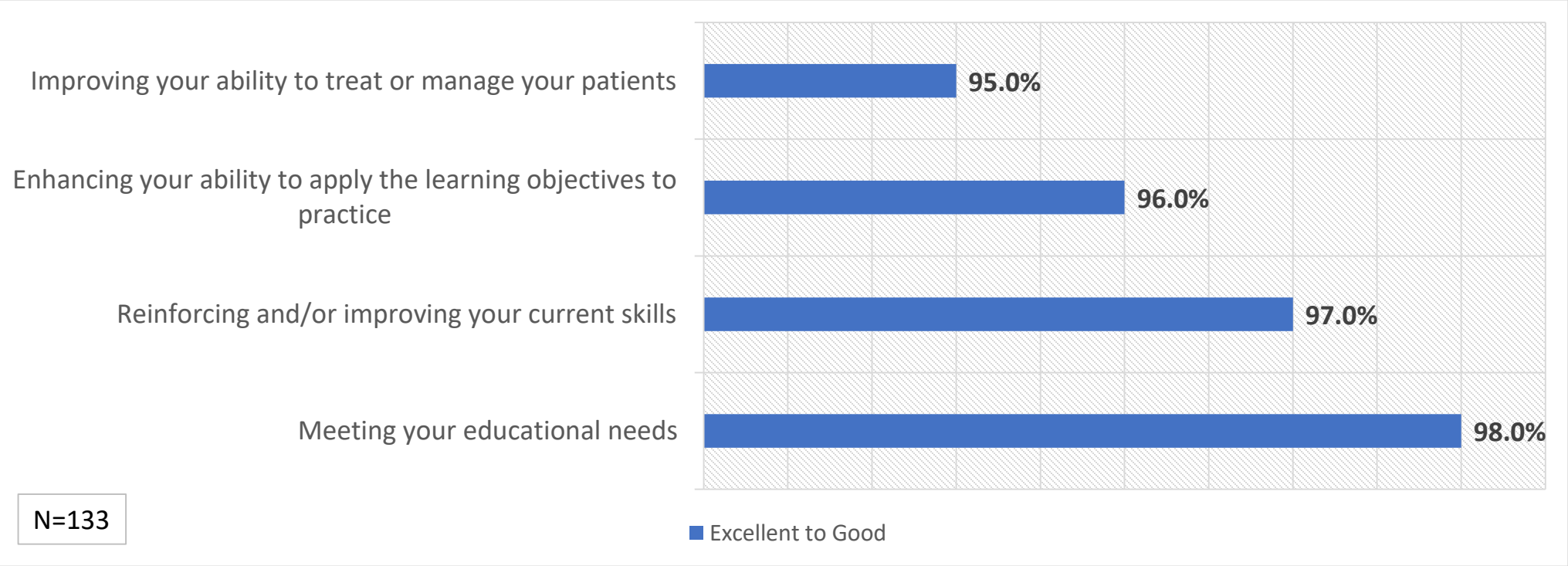
Analysis of participants responses related to educational needs

Participants reported the activity was "Excellent" to "Good" at:



Level 3&4 Outcomes: Overall Live Course

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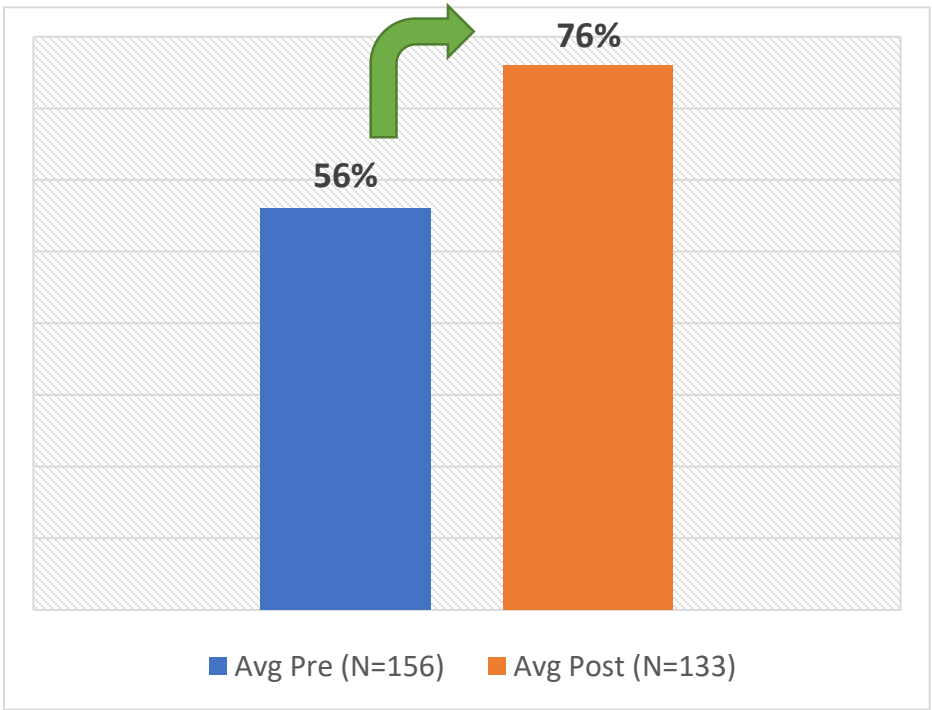

Level 3 and 4 outcomes were measured by comparing participants' pre- and post-test answers. The attendees' responses to these questions demonstrated that **participants gained knowledge as a result of the activity.**

36% Overall relative knowledge gain from pre to post-activity.

Greater than 75% of the questions posed for this activity represented a medium to large effect size*

*Cohen (1988) .2=small, .5=medium, .8=large
*Wolf (1966) 0.25=educationally significant

Level 3&4 Outcomes: Learning Assessment
Question 1

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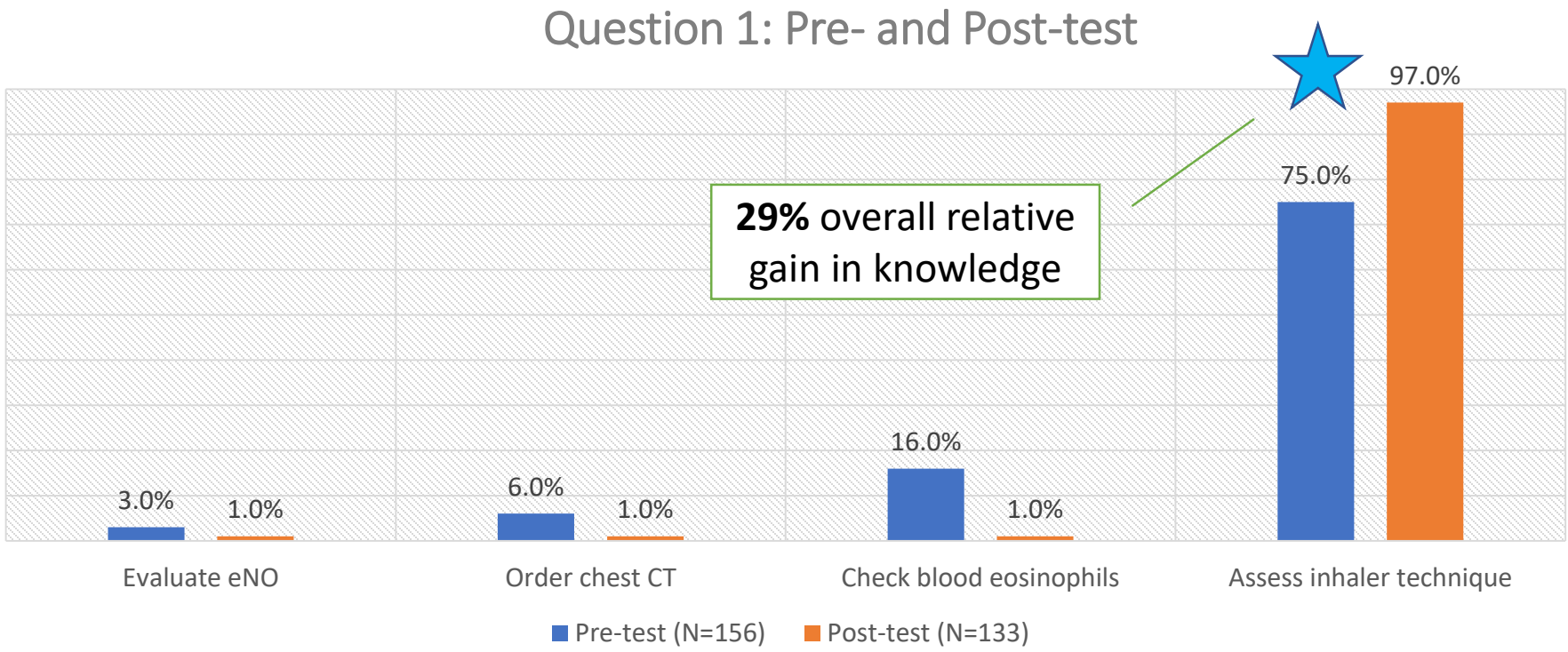
Learning Objective: *Apply current management guidelines to diagnose asthma correctly, optimize inhaled therapy, address comorbidities, and recognize when asthma is not well controlled.*

Q1: When a patient presents with uncontrolled asthma despite high intensity therapy, what is the most important initial assessment to consider?



P value < .0001
Cohens d = 0.72
Medium Effect Size

Level 3&4 Outcomes: Learning Assessment
Question 2

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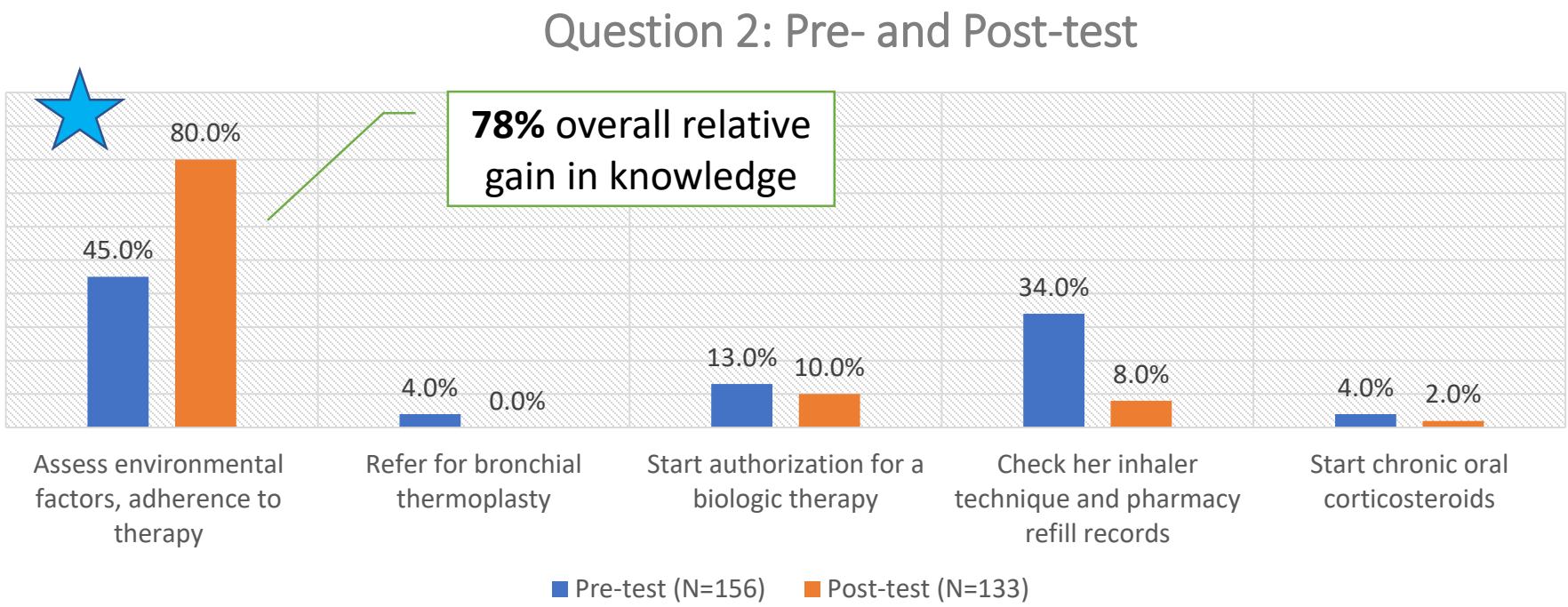
Learning Objective: *Apply current management guidelines to diagnose asthma correctly, optimize inhaled therapy, address comorbidities, and recognize when asthma is not well controlled.*

Q2: 40 y.o. man with life-long severe asthma has persistent symptoms and exacerbations every 3 months despite prescribed controller medicines include high dose ICS + LABA, LAMA and a LTM. What intervention should be considered next?



P value < .0001
Cohens d = 0.98
Large Effect Size

Level 3&4 Outcomes: Learning Assessment
Question 3

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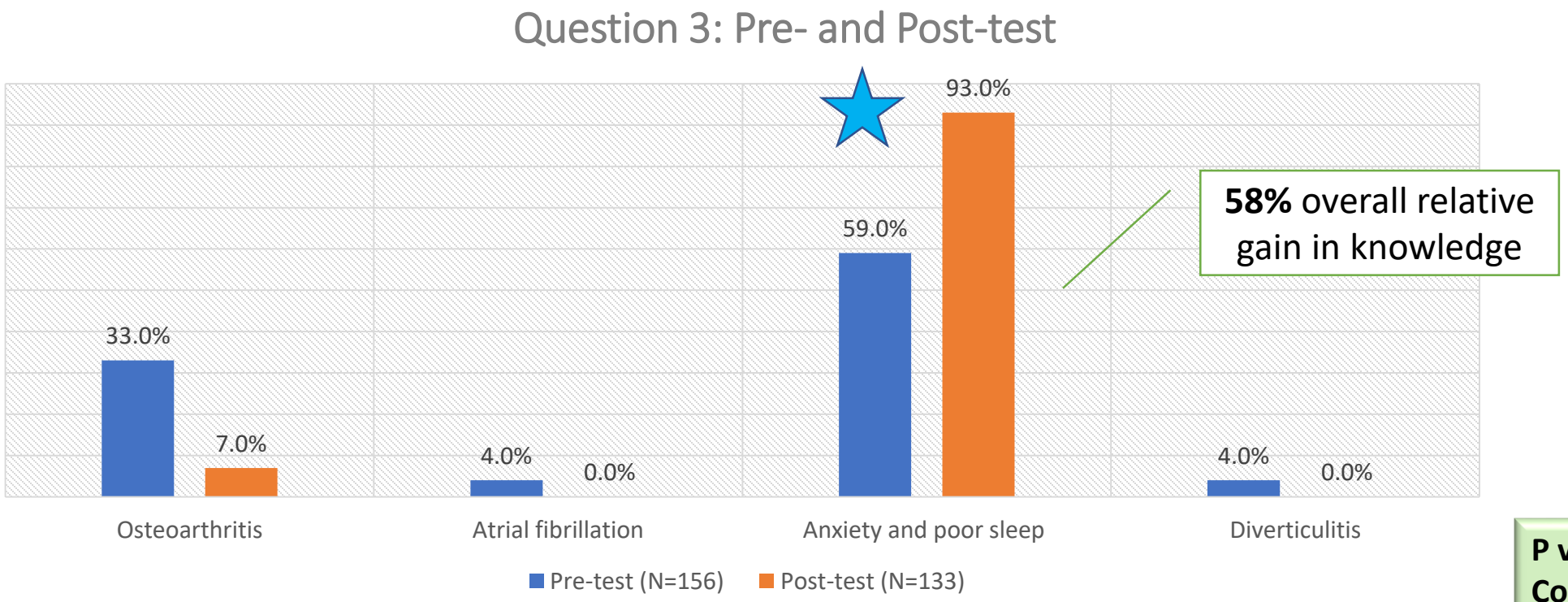
Learning Objective: *Review evidence related to potential long-term effects of oral corticosteroids and assess their role in asthma management in the era of biologic therapies.*

Q3: Chronic oral corticosteroid use has been associated with which of the following adverse effects?



P value <.0001
Cohens d = 0.90
Large Effect Size

Level 3&4 Outcomes: Learning Assessment
Question 4

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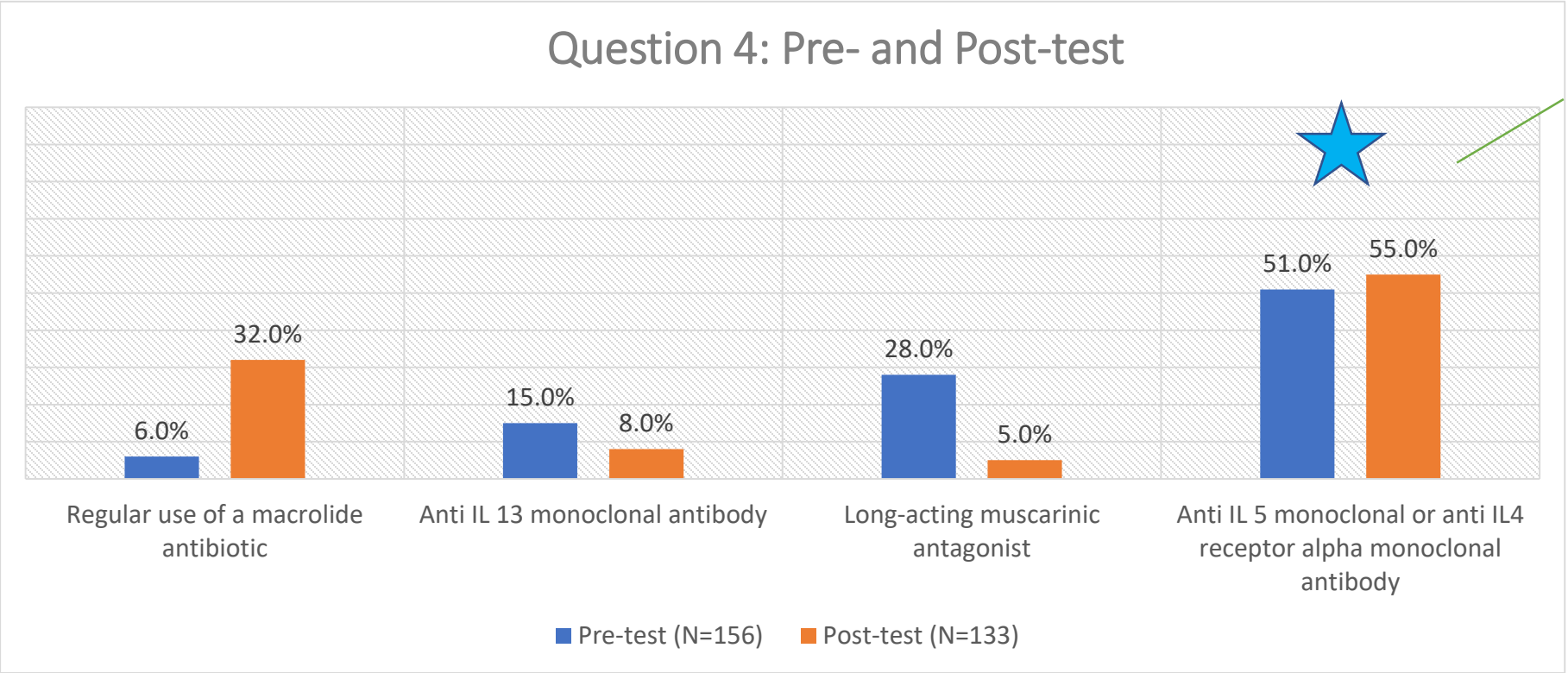
Learning Objective: *Review evidence related to potential long-term effects of oral corticosteroids and assess their role in asthma management in the era of biologic therapies.*

Q4: A 52 year-old man has been dependent on oral steroids despite adherence to high dose ICS/LABA for his asthma for the last 3 years. He has had weight gain, cataracts, and low bone density. Which of the following have been demonstrated to facilitate oral steroid dose reduction while reducing asthma exacerbations:



Represents a possible persistent gap in knowledge

P value = 0.3994
Cohens d = 0.10
Very Small Effect Size

Level 3&4 Outcomes: Learning Assessment
Question 5

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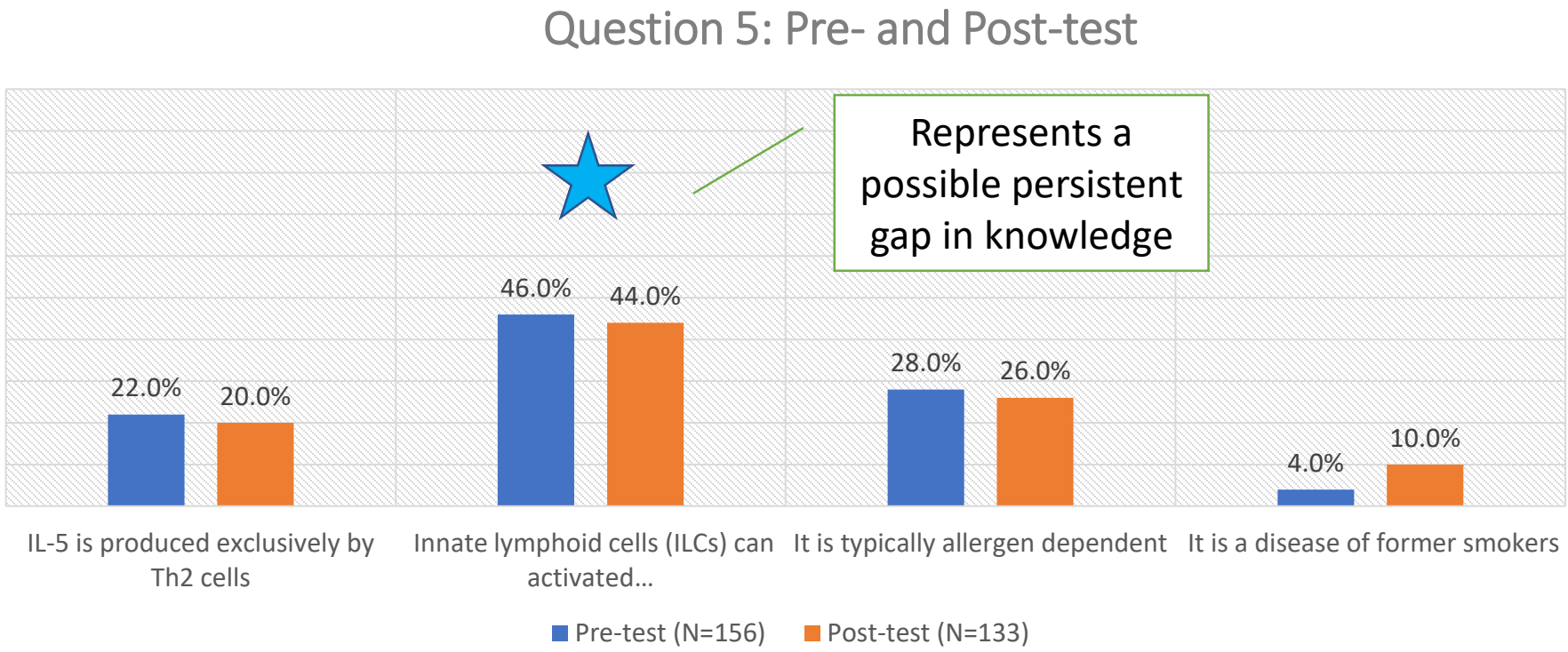
Learning Objective: *Identify key features of moderate to severe asthma that are targets for biologic therapies.*

Q5: When a patient presents with uncontrolled asthma despite high intensity therapy, what is the most important initial assessment to consider?



P value = 0.113
Cohens d = 0.20
Small Effect Size

Level 3&4 Outcomes: Learning Assessment
Question 6

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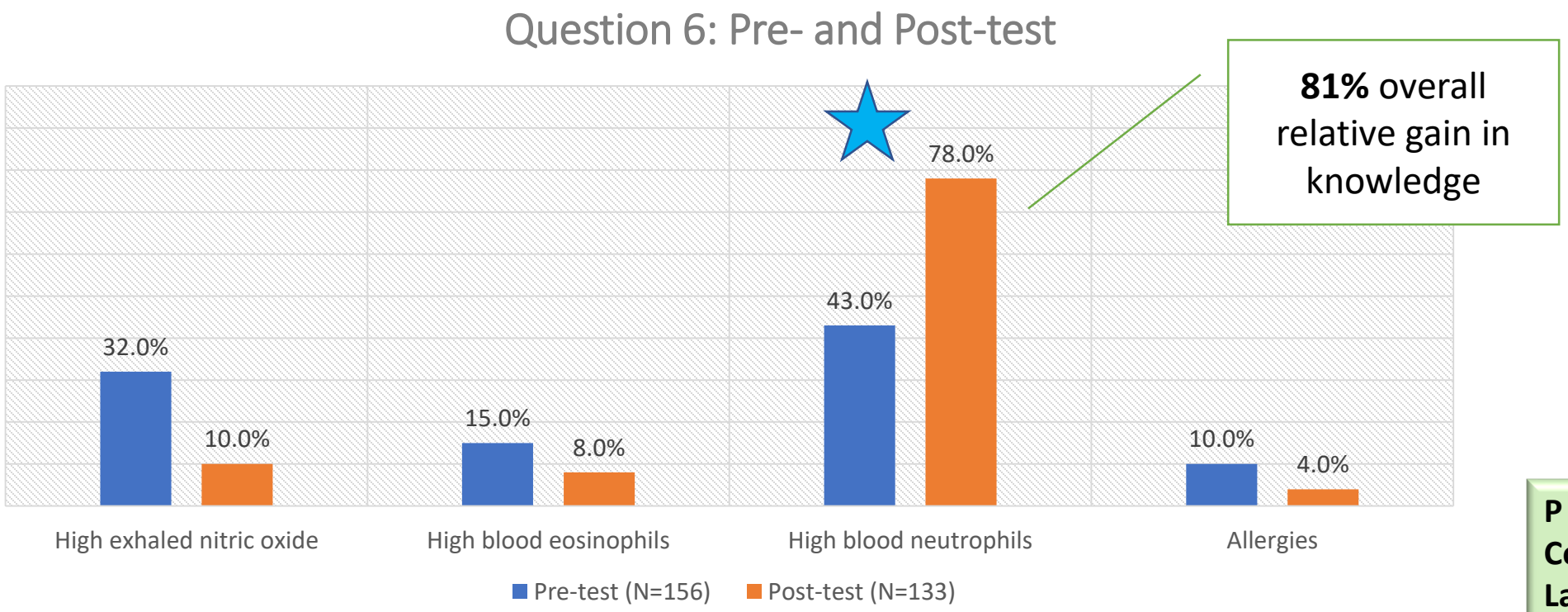
Learning Objective: *Identify key features of moderate to severe asthma that are targets for biologic therapies.*

Q6: Type 2 inflammation is associated with all of the following except:



81% overall relative gain in knowledge

P value <.0001
Cohens d = 0.92
Large Effect Size

Level 3&4 Outcomes: Learning Assessment
Question 7

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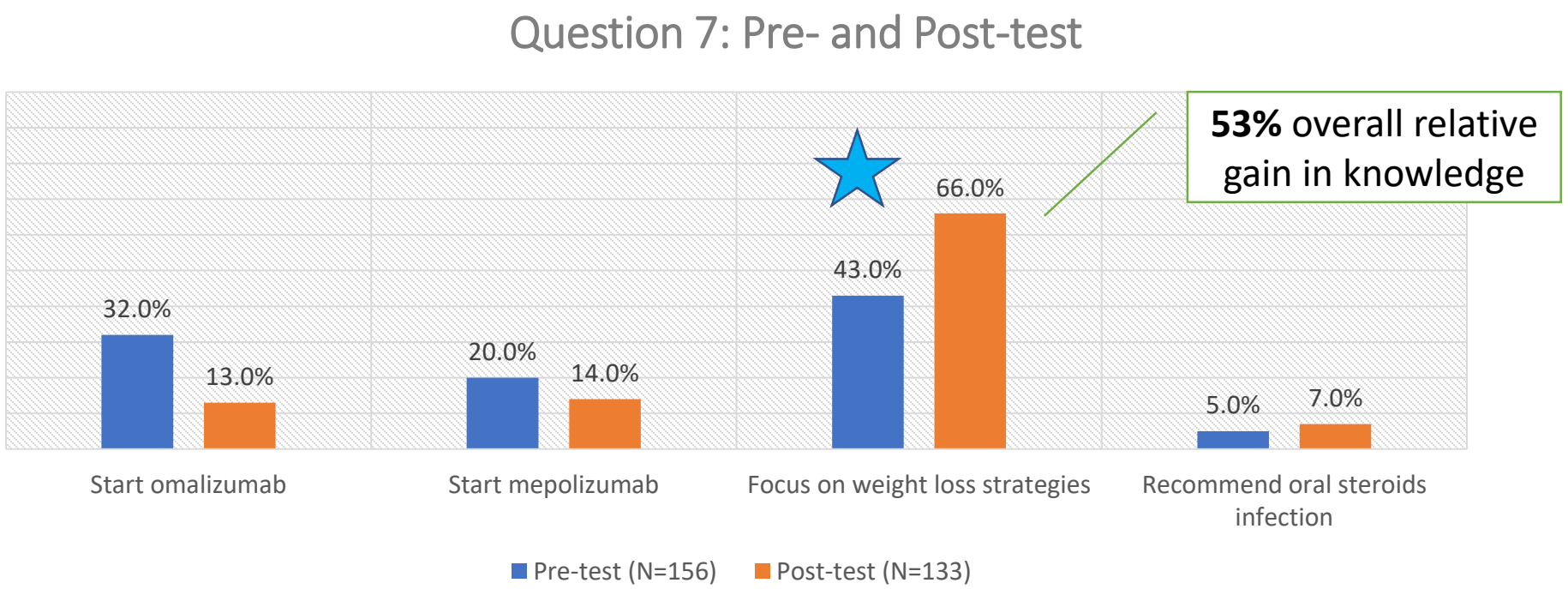
Learning Objective: *Individualize biologic and non-biologic therapies for patients based on their inflammatory phenotype, coexisting conditions, and other individual factors.*

Q7: Your patient is a 55-year-old obese woman (BMI 35 mg/kg2) with severe persistent asthma (onset at age 39) with uncontrolled symptoms despite intensive therapy. Comorbidities include GERD and sleep apnea controlled with PPI and CPAP. Skin prick testing negative for common aeroallergens. IgE = 100 IU/L but allergy testing is negative. Absolute eosinophil count is 100/uL. FeNO = 10 ppb. Induced sputum shows neutrophilic inflammation. What would you do next?



P value <.0001
Cohens d = 0.60
Medium Effect Size

Level 3&4 Outcomes: Learning Assessment
Question 8

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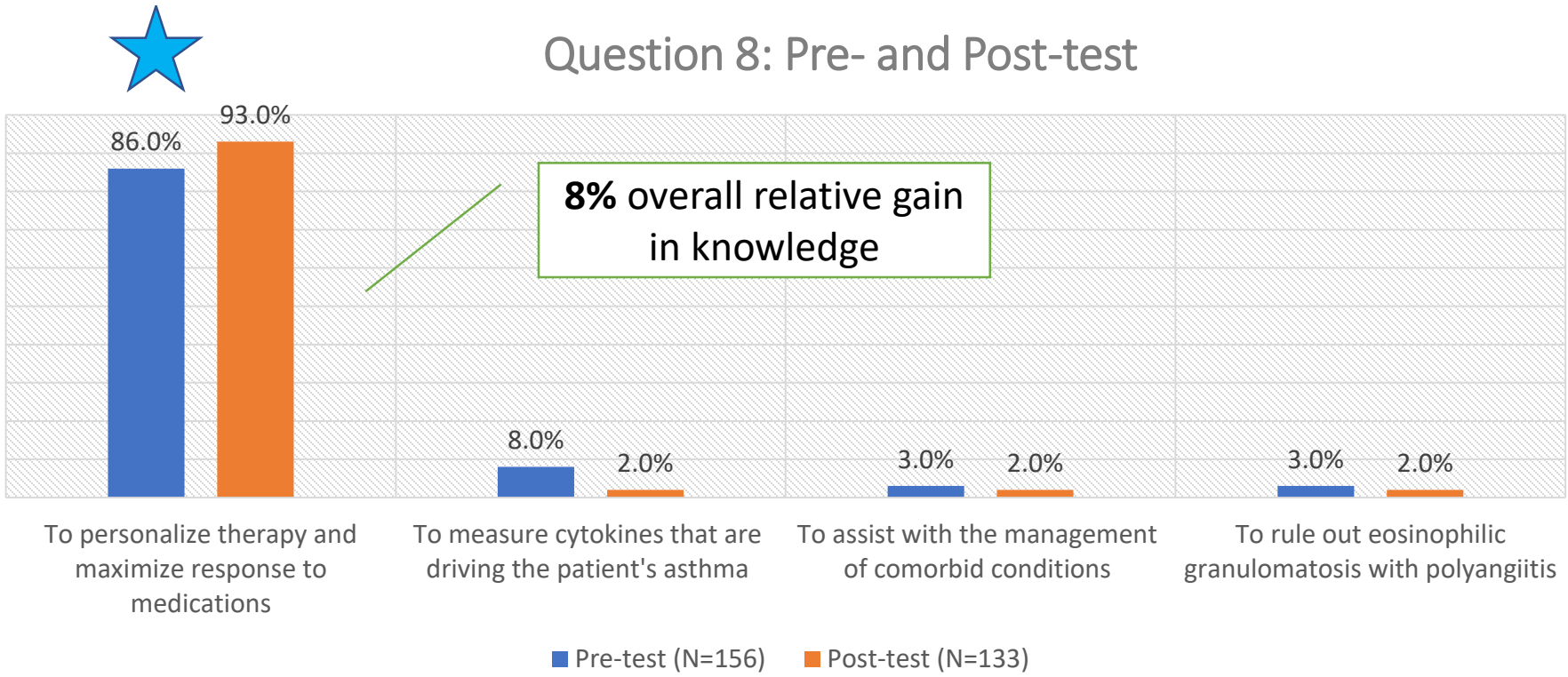
Learning Objective: *Individualize biologic and non-biologic therapies for patients based on their inflammatory phenotype, coexisting conditions, and other individual factors.*

Q8: When a patient presents with uncontrolled asthma despite high intensity therapy, what is the most important initial assessment to consider?



P value = 0.0002
Cohens d = 0.47
Medium Effect Size

Level 3&4 Outcomes: Learning by Objective

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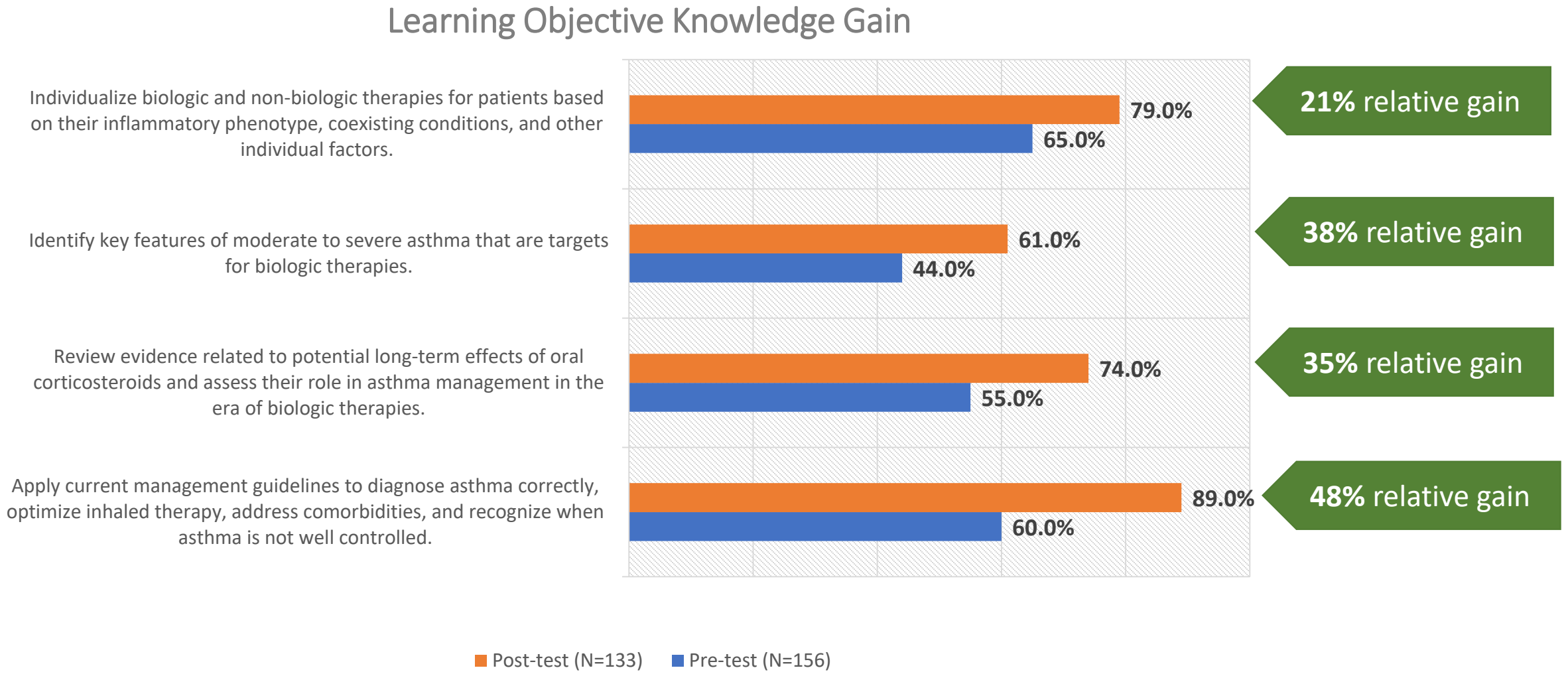

Level 3&4 Outcomes
Aggregate scores by city

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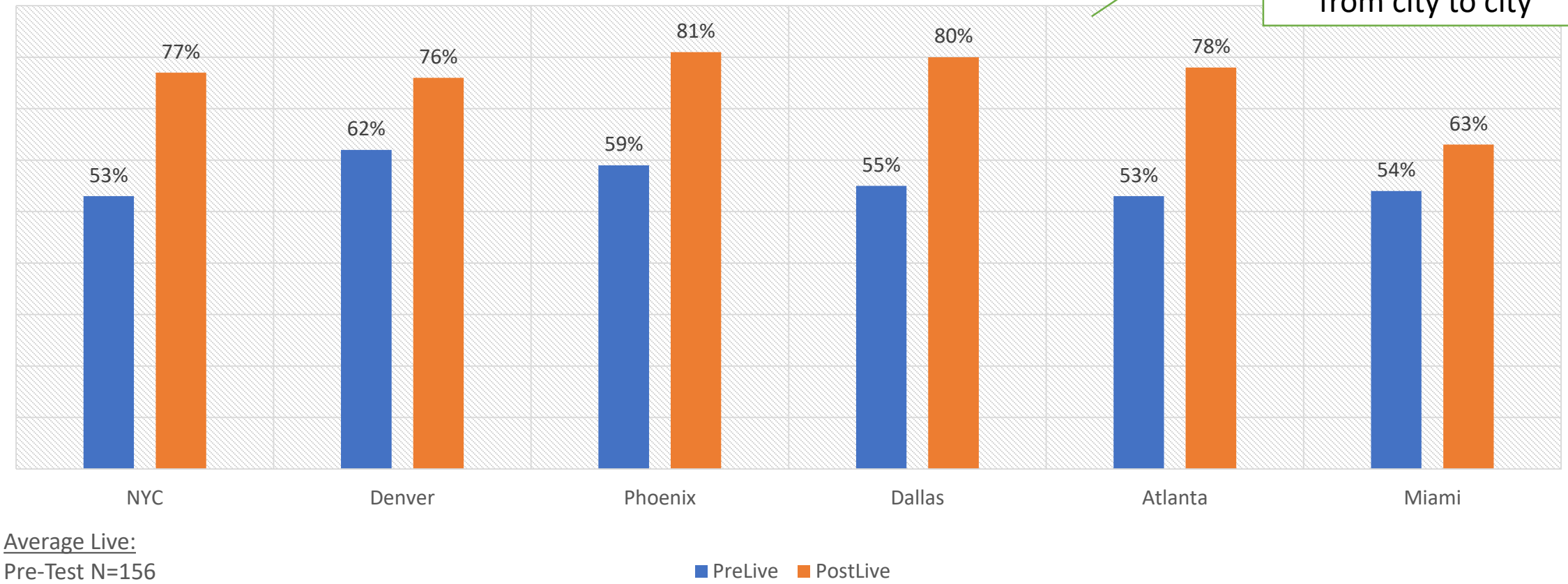
Performance by location – 6 live series



Average Live:
Pre-Test N=156
Post-Test N=133

Level 4 Outcomes: Intent to Change

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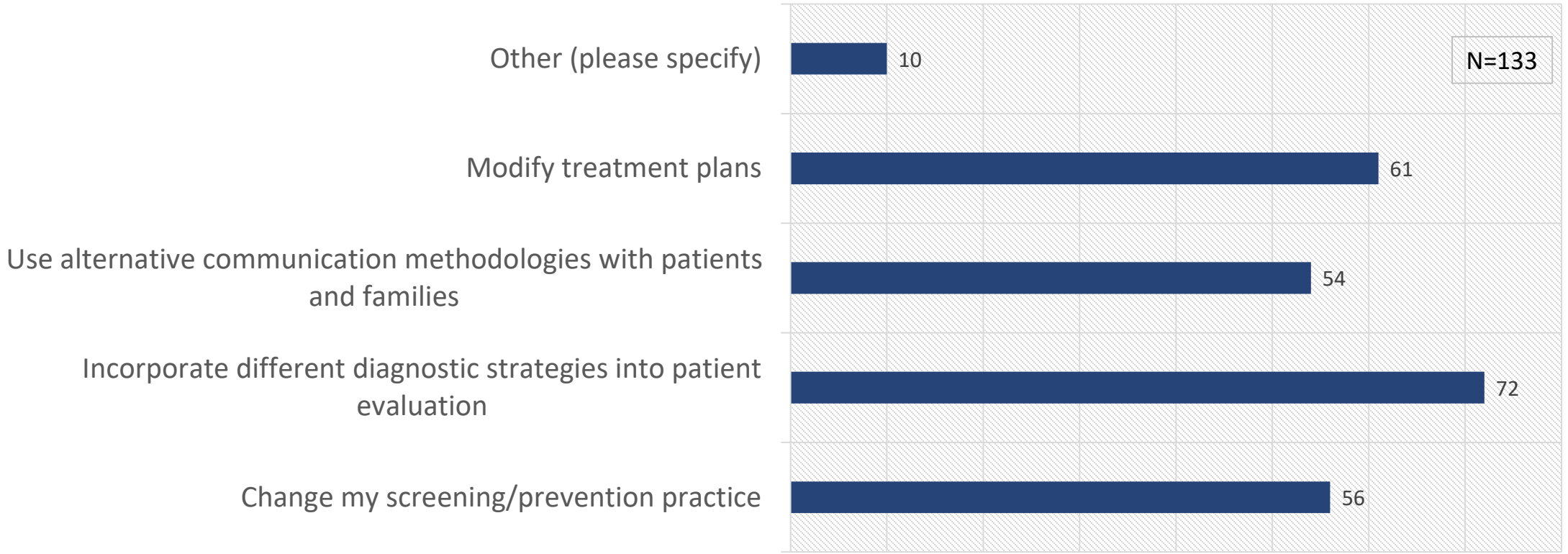
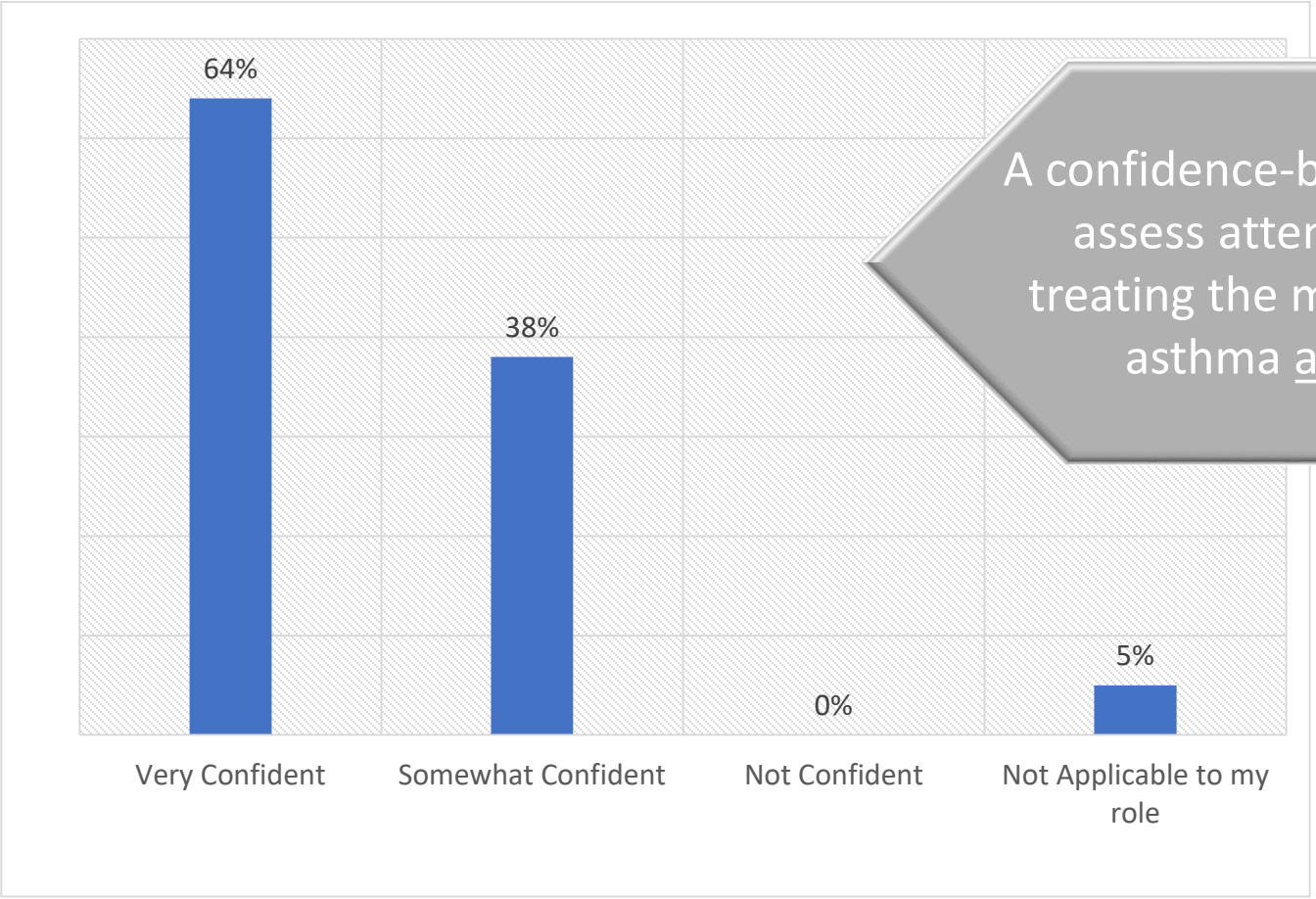
99% of respondents indicated that they planned to make the following changes to their practice following the education:



**multiple responses could be selected*

Confidence

Attendees rated their level of confidence related to addressing comorbidities of severe asthma after attending the meeting:



A confidence-based poll was used to assess attendee confidence in treating the many facets of severe asthma after the activity.

Educational Impact – By the numbers

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- ✓**99%** of attendees indicated that they planned to make changes to their practice
- ✓**35%** of attendees indicated that they had already made changes to practice at 6 weeks following the activity
- ✓**50%** of those who had not yet made changes 6 weeks following the activity, indicated that they still planned to make changes to practice
- ✓**35%** overall relative gain in knowledge for all questions combined
- ✓**75%** of questions represented a significant gain in knowledge as reflected by p values >0.05 thus the learning was not merely attributable to chance
- ✓**75%** of questions represented a medium to large effect size as reflected by Cohen's d statistic
- ✓**12,684** patients are reportedly impacted by the education provided

Attendee Take Aways

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- Biologic treatment for asthma management
- Benefits of additional asthma testing
- GINA guideline application to treatment
- Eosinophil categorization
- Identify phenotype and endotype and tailor therapy
- Criteria for biologics
- Different types of asthma
- Look out for comorbidities that may make asthma difficult to control
- Individualization of treatment and biologics
- Biomarkers for type 2 and non-type 2 [asthma]
- Taper steroids and use biologics
- New way to treat uncontrolled asthma
- Inhaler technique and adherence
- Understand heterogeneity of asthma
- Communication with patients
- Distinguishing from difficult to control asthma from true refractory asthma

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Recommendations for Future Topics

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- ILD and COPD
- Future role of biologic therapy in COPD patients with asthma overlap
- Hypertension
- Rheumatoid Arthritis
- More about biologic data (side effects, practical aspect)
- Assessing phenotypes
- NTM
- Diabetes
- Atopic Dermatitis
- EoE
- CRSwNP
- Pediatric asthma

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Infographic Clinical Reference Aid

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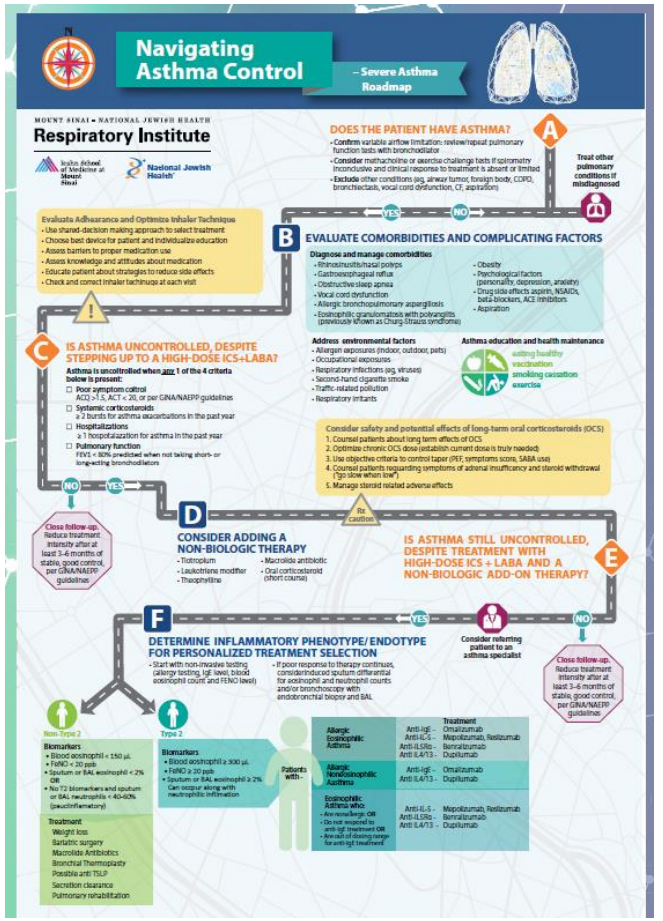
- **98%** of attendees (N=133) indicated that they were likely to use the infographic clinical reference aid in practice.
- **38%** of attendees (N=37) responding to the 6-week follow-up survey indicated that they had used or referred to the infographic in clinical practice.

Most helpful aspects of infographic:

- ✓ Clarify decision-making process
- ✓ Easy to follow
- ✓ Biomarkers
- ✓ Phenotypes
- ✓ Algorithm



Accreditation

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NJH is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians. The NJH Office of Professional Education produced and accredited this program and adhered to the updated ACCME guidelines.

NJH designated the live symposia for a maximum of 2.0 *AMA PRA Category 1 Credits*™; 2 ABIM MOC points, and 2.4 Nursing Contact Hours; and the online activity for a maximum of .5 *AMA PRA Category 1 Credits*™ and .5 ABIM MOC points

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Thank you for your support of this educational program!