



# Clinical Updates for Nurse Practitioners and Physician Assistants: 2016



## **Chronic Obstructive Pulmonary Disease (COPD) and Alpha-1 Antitrypsin Deficiency (AATD): Bridging the Gaps in Diagnosis and Treatment**

Grant # 002264

**Final Outcome Report  
for 2 Cities**

Report Date: January 19, 2017

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# Course Accreditation

The Association of Black Cardiologists, Inc. is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

The Association of Black Cardiologists, Inc. designates this live activity for a maximum of 1 *AMA PRA Category 1 Credit*<sup>™</sup>. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

The National Association for Continuing Education is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

The National Association for Continuing Education designates this live activity for a maximum of 6 *AMA PRA Category 1 Credits*<sup>™</sup>. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

National Association for Continuing Education is approved as a provider of nurse practitioner continuing education by the American Association of Nurse Practitioners. AANP Provider Number 121222. This program has been approved for 7 contact hours of continuing education (which includes 3.25 pharmacology hours).

AAPA accepts certificates of participation for educational activities certified for *AMA PRA Category 1 Credit*<sup>™</sup> from organizations accredited by ACCME or a recognized state medical society. PAs may receive a maximum of 7 Category 1 credits for completing this activity.\*

\* This applies to the full day CME activity entitled Clinical Updates for Nurse Practitioners and Physician Assistants.



## Commercial Support

The Clinical Updates for Nurse Practitioners and Physician Assistants 2016 series of CME activities were supported through educational grants or donations from the following companies:

Allergan  
Boehringer Ingelheim Pharmaceuticals, Inc.  
BioReference, An OPKO Company  
Gilead  
Grifols  
Novartis  
Prometheus  
Sanofi US

**Chronic Obstructive Pulmonary Disease (COPD) and Alpha-1 Antitrypsin Deficiency (AATD): Bridging the Gaps in Diagnosis and Treatment** was supported by an educational grant from Grifols.



# Cities and Dates

## Clinical Updates for Nurse Practitioners and Physician Assistants Update 2016 Conference Schedule

September 17, 2016  
Orlando, FL

October 22, 2016  
Phoenix, AZ

September 24, 2016  
Cincinnati, OH

**October 29, 2016**  
**Charlotte, NC**

October 1, 2016  
Pittsburgh, PA

November 5, 2016\*  
Columbia, SC

October 8, 2016  
Fairfax, VA

**November 12, 2016**  
**White Plains, NY**

October 15, 2016\*  
Dallas, TX

November 19, 2016  
Seattle, WA

\***Simulcast and Live Conference**

\*\* **Bolded** cities are where the lecture was given

Enduring Monograph Expected Launch Date – February 1, 2017

# Titles of Presentations

Prostate Cancer Screening in the Primary Care Setting:  
Understanding the Role of Bio-Markers

Atrial Fibrillation:  
Reducing Risk and Individualizing Therapeutic Choices

Screening, Counseling, and Linkage to Care Education in Hepatitis B  
(SCALE HBV)

Clinical Challenges in Individualized Heart Failure Treatment

Postprandial Hyperglycemia and GLP-1 Receptor Agonists:  
Effective Strategies to Achieve Goals

The Inflammatory State of Psoriasis: New and Emerging Therapies

Avoiding the Pitfalls in IBD Care:  
Diagnostic and Management Strategies to Improve Outcomes

**Chronic Obstructive Pulmonary Disease (COPD) and Alpha-1 Antitrypsin Deficiency (AATD):  
Bridging the Gaps in Diagnosis and Treatment**

Idiopathic Pulmonary Fibrosis:  
Making Sense of Diagnostic and Therapeutic Options in Primary Care

Optimizing Disease Management: IBS and Chronic Idiopathic Constipation

# Levels of Evaluation

Consistent with the policies of the ACCME, NACE evaluates the effectiveness of all CME activities using a systematic process based on Moore's model. This outcome study reaches Level 5.

- Level 1: Participation
- Level 2: Satisfaction
- Level 3: Declarative and Procedural Knowledge
- Level 4: Competence
- Level 5: Performance
- Level 6: Patient Health
- Level 7: Community Health



# Level 1: Participation

- 247 attendees in 2 cities
- 93% NPs or PAs; 4% Physicians; 3% RNs; 1% Other
- 37% in community-based practice
- 57% PCPs, 2% Cardiologist; 4% Pulmonology; 37% Other or did not respond
- 88% provide direct patient care

## Participation Breakdown

Cities	MDs/DOs	NPs	PAs	RNs	Other	TOTAL
Charlotte, NC	1	78	18	2	2	101
White Plains, NY	2	123	12	8	0	146

Did we reach the right audience? **Yes!**



## Level 2: Satisfaction

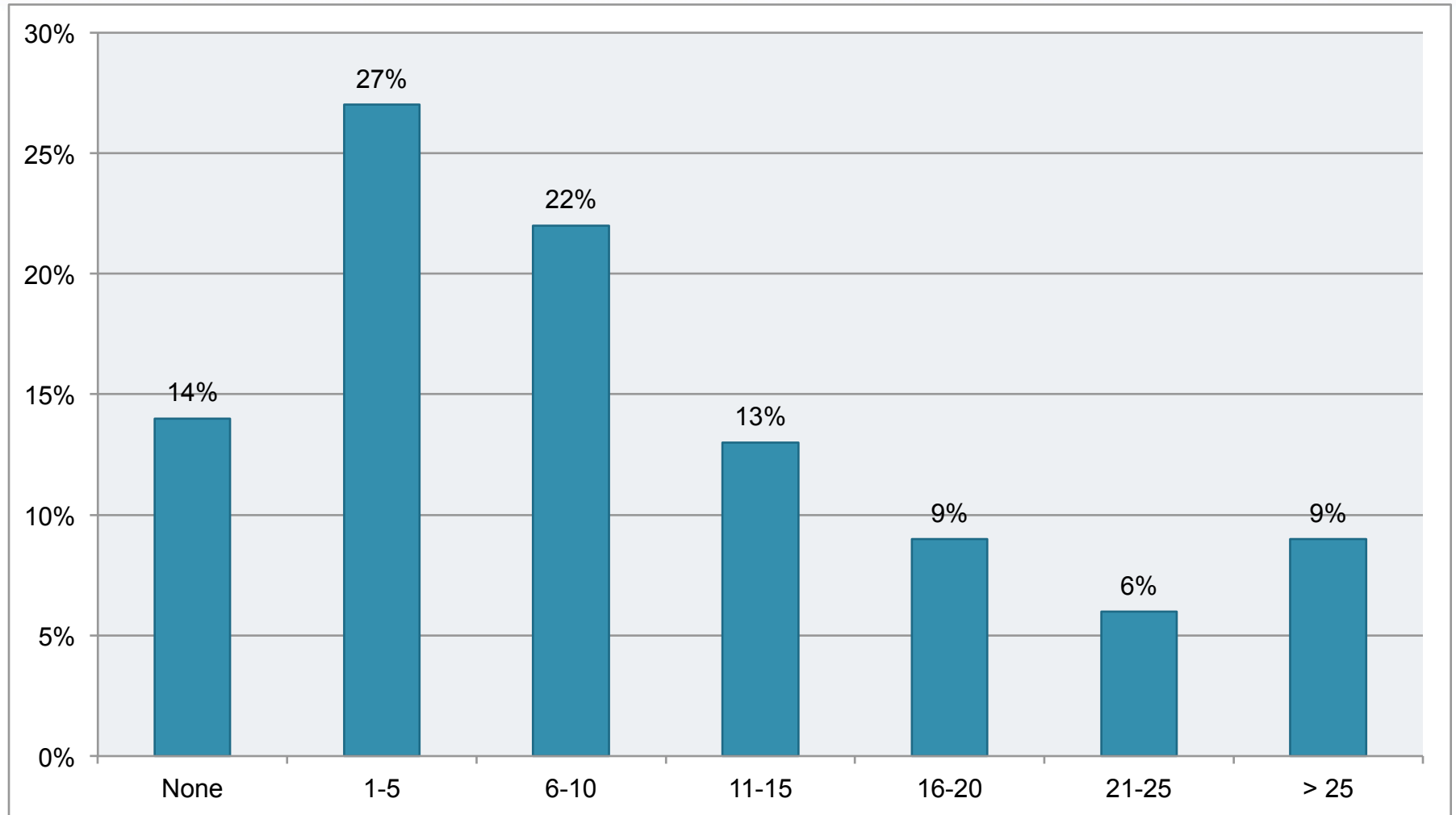
- 100% rated the activity as excellent
- 100% indicated the activity improved their knowledge
- 99% stated that they learned new and useful strategies for patient care
- 99% said they would implement new strategies that they learned in their practice
- 100% said the program was fair-balanced and unbiased

Sample Size: N = approximately 247

Were our learners satisfied? **Yes!** Data was collected in two cities for the **Clinical Updates for Nurse Practitioners and Physician Assistants program.**

## Chronic Obstructive Pulmonary Disease (COPD) and Alpha-1 Antitrypsin Deficiency (AATD): Bridging the Gaps in Diagnosis and Treatment

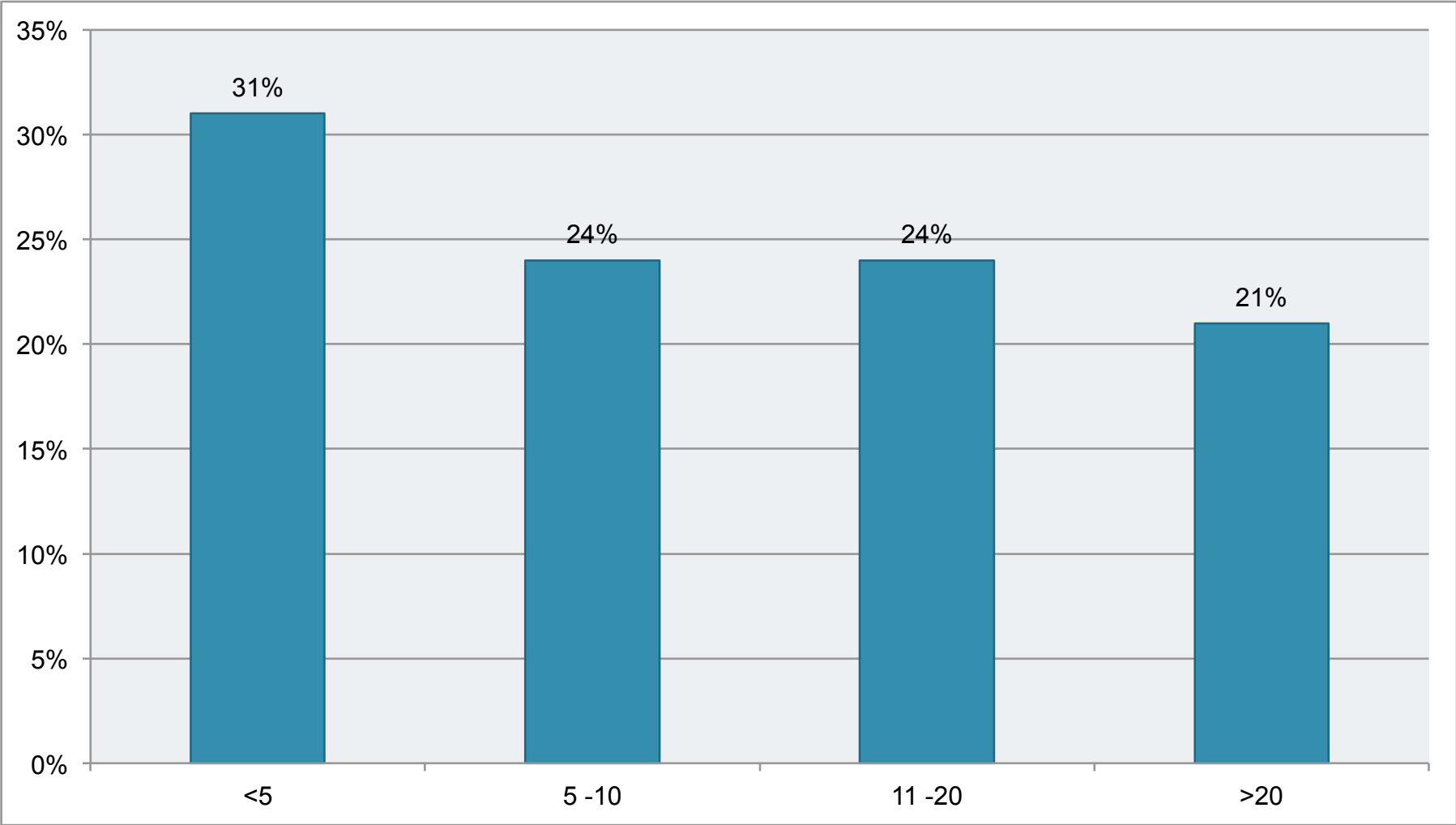
Patients seen each week in a clinical setting with Chronic Obstructive Pulmonary Disease (COPD) at risk for Alpha-1 Antitrypsin Deficiency (AATD):



Sample Size: N = approximately 247

# Chronic Obstructive Pulmonary Disease (COPD) and Alpha-1 Antitrypsin Deficiency (AATD): Bridging the Gaps in Diagnosis and Treatment

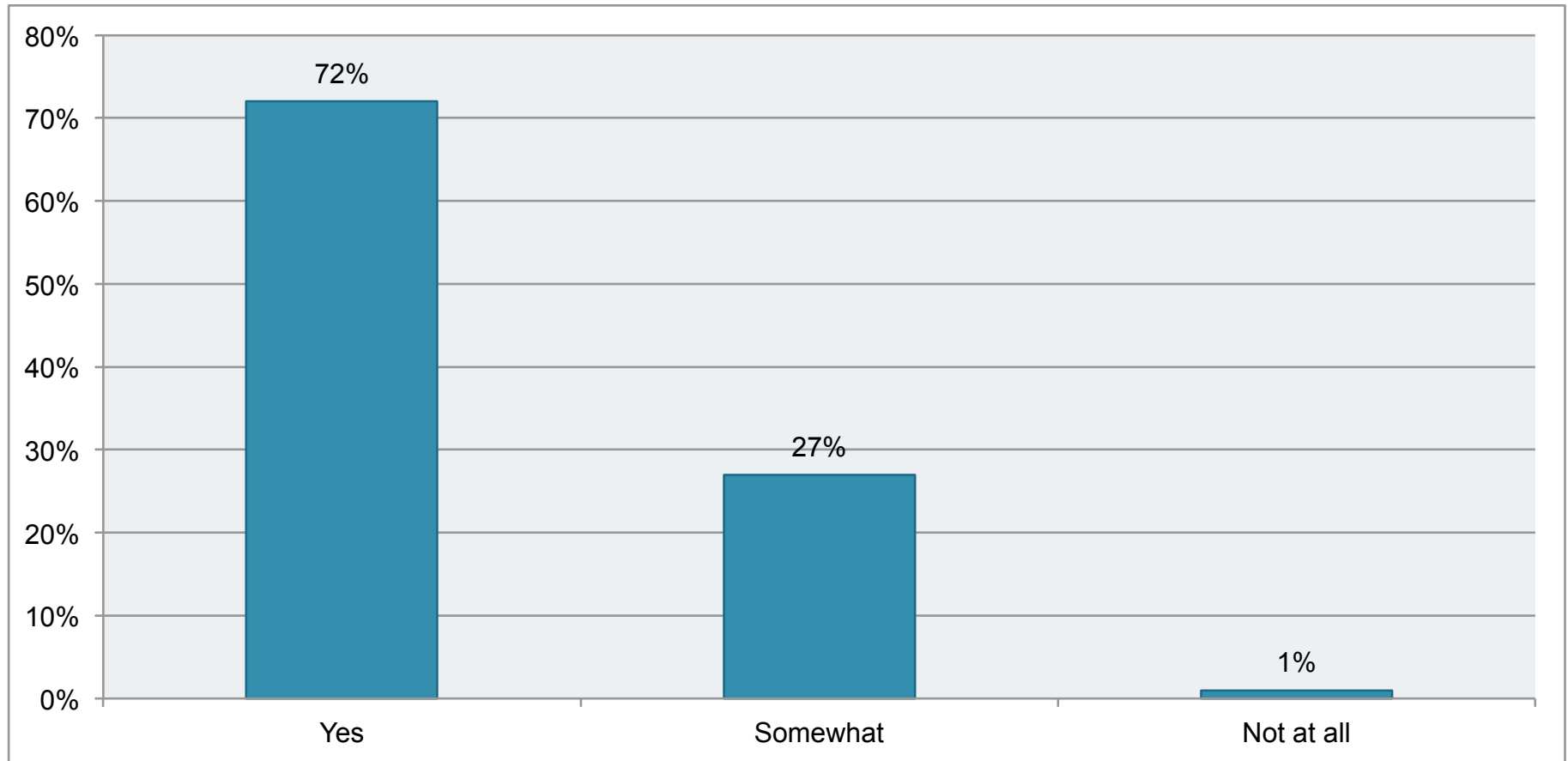
Clinicians number of years in practice:



N = 96

## Did Learners Say They Achieved Learning Objective?

**Upon completion of this activity, I can now** –Discuss diagnostic strategies for alpha-1 antitrypsin deficiency (AATD); Incorporate testing into COPD treatment algorithm; Describe evolving treatment options for patients with AATD:



**Yes! 99% believed they did. Data was collected in 2 cities.**

Sample Size: N = approximately 247

# Outcome Study Methodology

## Goal

To determine the effect this CME activity had on learners with respect to competence to apply critical knowledge, confidence in treating patients with diseases or conditions discussed, and change in practice behavior.

## Dependent Variables

### 1. Level 3-5: Knowledge, Competence, and Performance

Case-based vignettes and pre- and post-test knowledge questions were asked with each session in the CME activity. Identical questions were also asked to a sample of attendees 4 weeks after the program to assess retention of knowledge. Responses can demonstrate learning and competence in applying critical knowledge. The use of case vignettes for this purpose has considerable predictive value. Vignettes, or written case simulations, have been widely used as indicators of actual practice behavior.<sup>1</sup>

### 2. Practitioner Confidence

Confidence with the information relates directly to the likeliness of actively using knowledge. Practitioner confidence in his/her ability to diagnose and treat a disease or condition can affect practice behavior patterns.

### 3. Level 5: Self-Reported Change in Practice Behavior

Four weeks after CME activity, practitioners are asked if they changed practice behavior and what barriers they encountered.

1. Peabody, J.W., J. Luck, P. Glassman, S. Jain, J. Hansen, M. Spell and M. Lee (2004). Measuring the quality of physician practice by using clinical vignettes: a prospective validation study. *Ann Intern Med* 14(10): 771-80.



# Chronic Obstructive Pulmonary Disease (COPD) and Alpha-1 Antitrypsin Deficiency (AATD): Bridging the Gaps in Diagnosis and Treatment

## Faculty

Franck Rahaghi, MD, MHS, FCCP  
Susan Collazo, CRNP

## Learning Objectives

1. Discuss the pathophysiology of Alpha-1 Antitrypsin Deficiency (AATD)
2. Demonstrate how to diagnose AATD patients
3. Incorporate AATD testing into chronic obstructive pulmonary disease (COPD) management algorithms
4. Evaluate treatment options for patients with AATD

## Key Findings

### Chronic Obstructive Pulmonary Disease (COPD) and Alpha-1 Antitrypsin Deficiency (AATD): Bridging the Gaps in Diagnosis and Treatment

Knowledge/Competence	Learners demonstrated improvement from pre to post-testing in their answers to <i>four</i> out of <i>four</i> of the case-based questions on the assessment and management of patients with COPD and Alpha-1 Antitrypsin Deficiency.
Confidence	Whereas the majority of learners rated themselves as having very low confidence in their understanding of COPD and AATD before the education, most of the learners showed moderate gains in confidence after the program.
Intent to Perform	Learners stated that they were very likely (71%) to somewhat likely (21%) to implement strategies learned at this session in their practice.
Change of Practice Behavior	78% of learners who responded to our four week survey indicated that they had changed their practice behavior to implement the learning objectives of this program within four weeks after they attended the activity.

4 Weeks Post N= 49



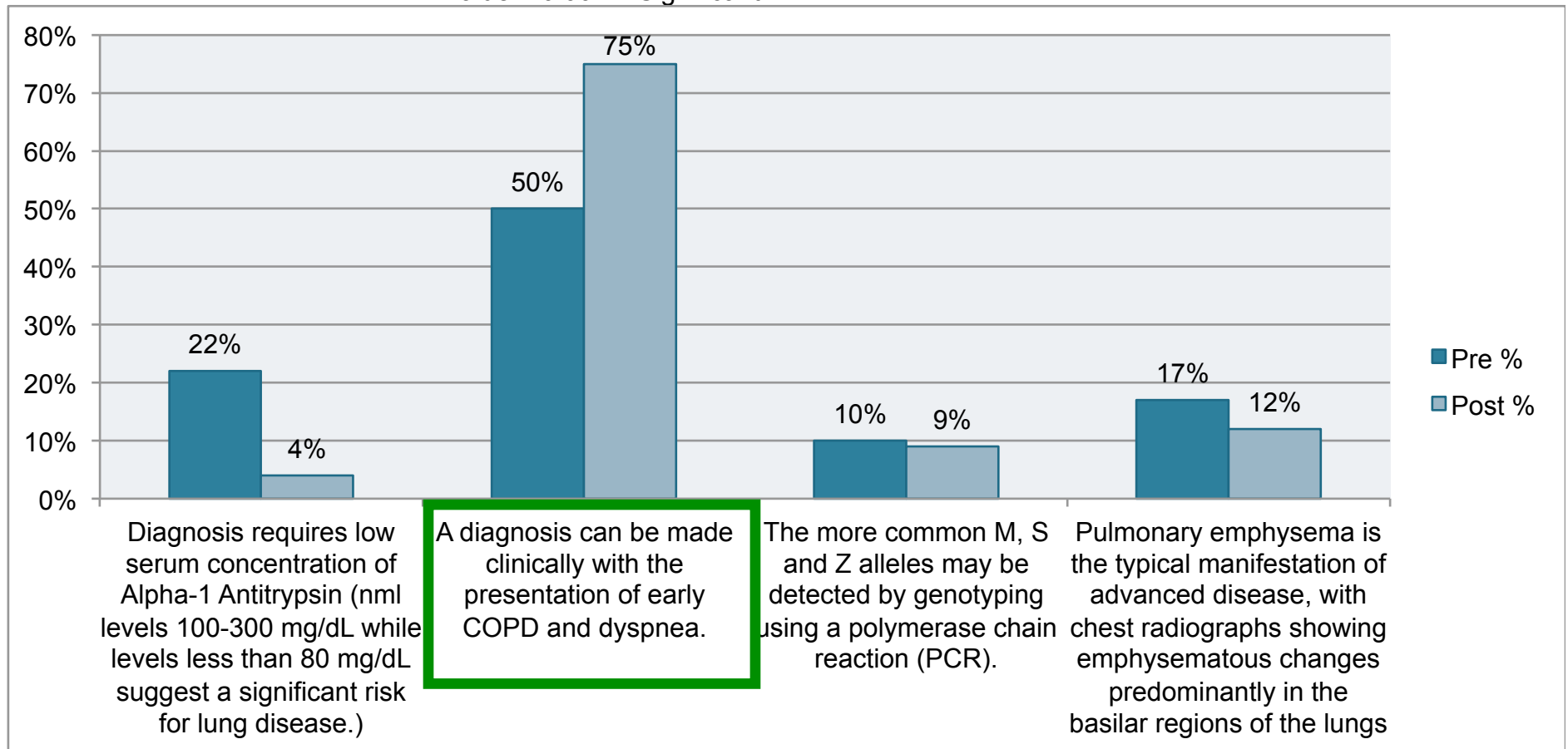
## Case Vignette Knowledge and Competence Assessment Questions

(presented before and after lecture—boxed answer is correct)

John is a 52 y/o smoker with COPD who is not doing well on his current therapy. As you consider how else to manage his care, all of the following statements about diagnosing AATD are true except:

(Learning Objective 2)

P Value: <0.001 – Significant



Pre N = 109 Post N = 151

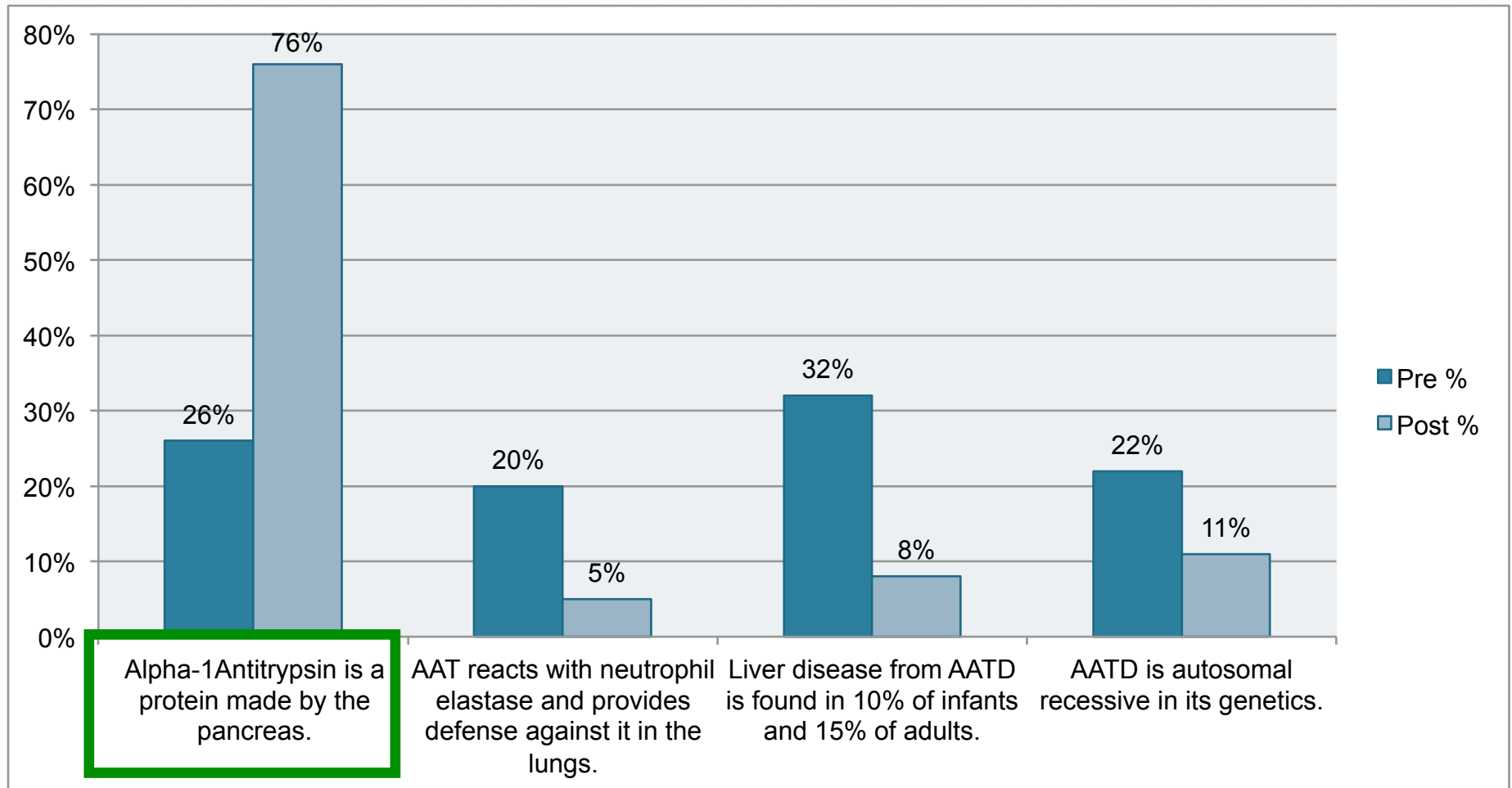
Green highlight indicates significant difference between pre and post testing.

## Case Vignette Knowledge and Competence Assessment Questions

(presented before and after lecture—boxed answer is correct)

You ultimately diagnose John with Alpha-1 Antitrypsin Deficiency (AATD). He presents to discuss his condition and you tell him all of the following EXCEPT: (Learning Objective 1)

P Value: <0.001 – Significant



Pre N = 146 Post N = 154

Green highlight indicates significant difference between pre and post testing.



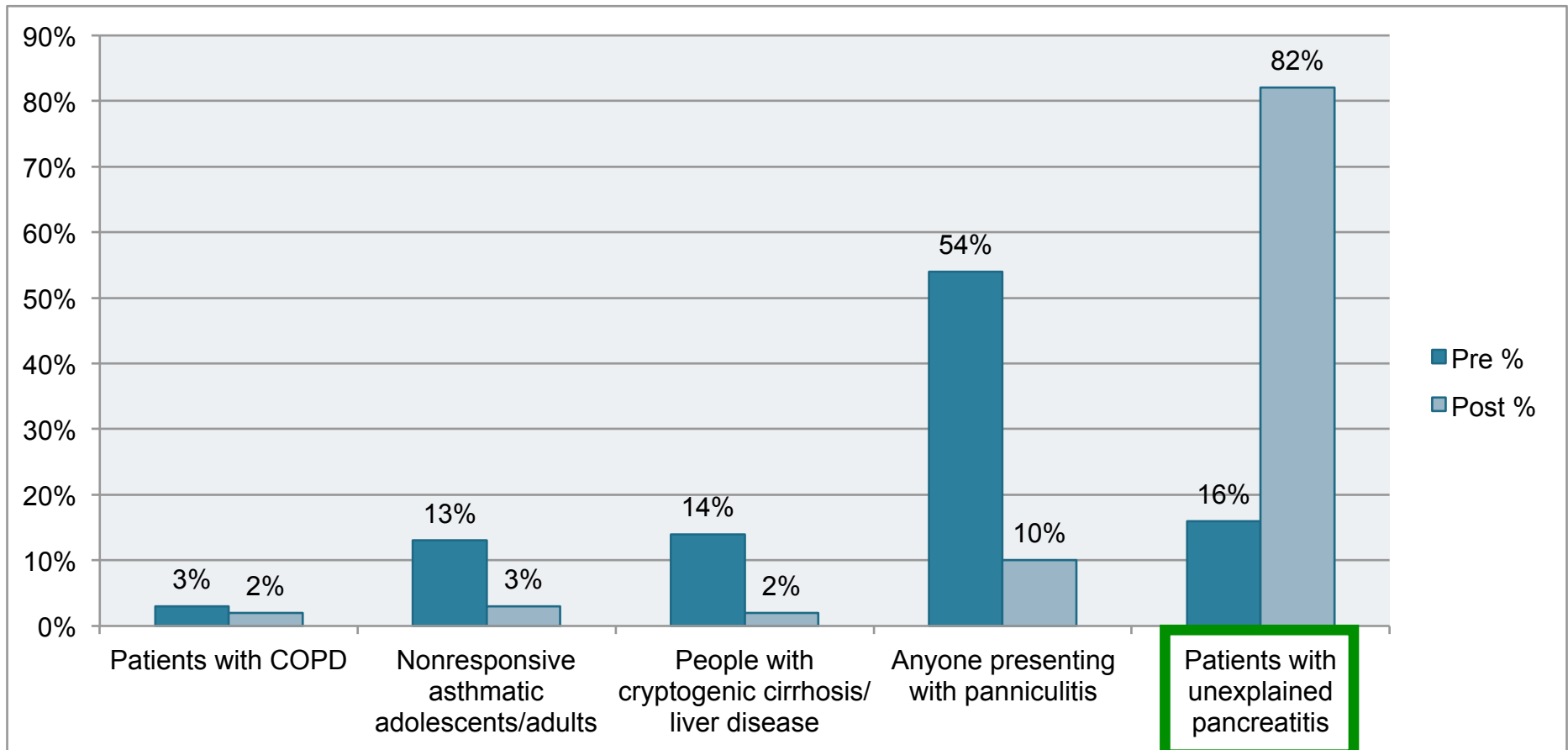
## Case Vignette Knowledge and Competence Assessment Questions

(presented before and after lecture—boxed answer is correct)

You meet Mr. P, a 55y/o construction worker with persistent dyspnea. His FEV1 was 50% predicted and reversibility was demonstrated. He has asthma, initially diagnosed at the age of 40 but it has become progressively worse and unresponsive. According to the ATS, screening patients at risk for AATD include all of the following except:

(Learning Objective 3)

P Value: <0.001 – Significant



Pre N = 134 Post N = 162

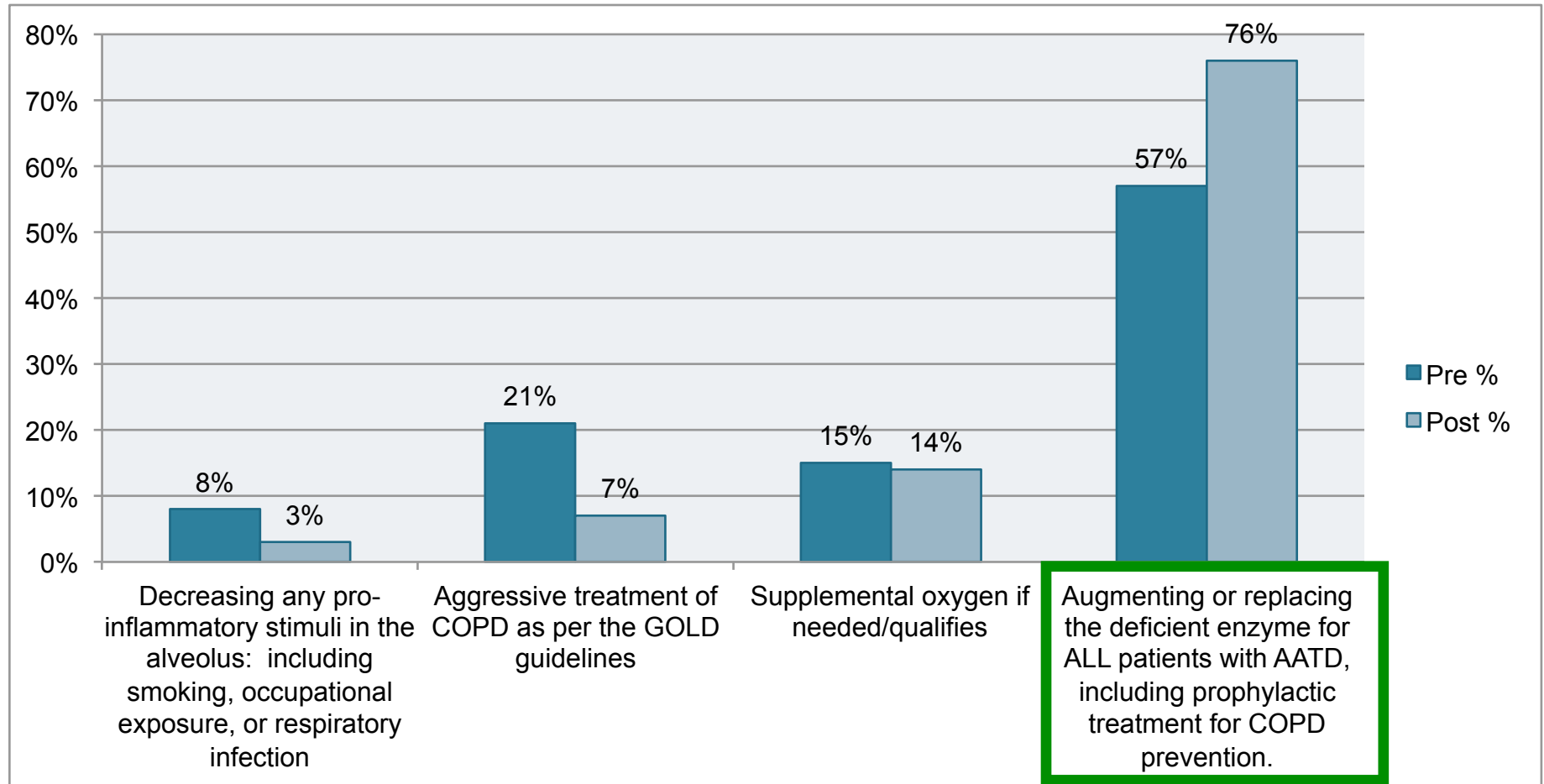
Green highlight indicates significant difference between pre and post testing.

## Case Vignette Knowledge and Competence Assessment Questions (presented before and after lecture—boxed answer is correct)

Preventing or slowing the progression of lung disease is the major goal of alpha1-antitrypsin deficiency (AATD) management. Some strategies to achieve this goal are below EXCEPT:

(Learning Objectives 4)

P Value: <0.001 – Significant



Pre N = 145 Post N = 129

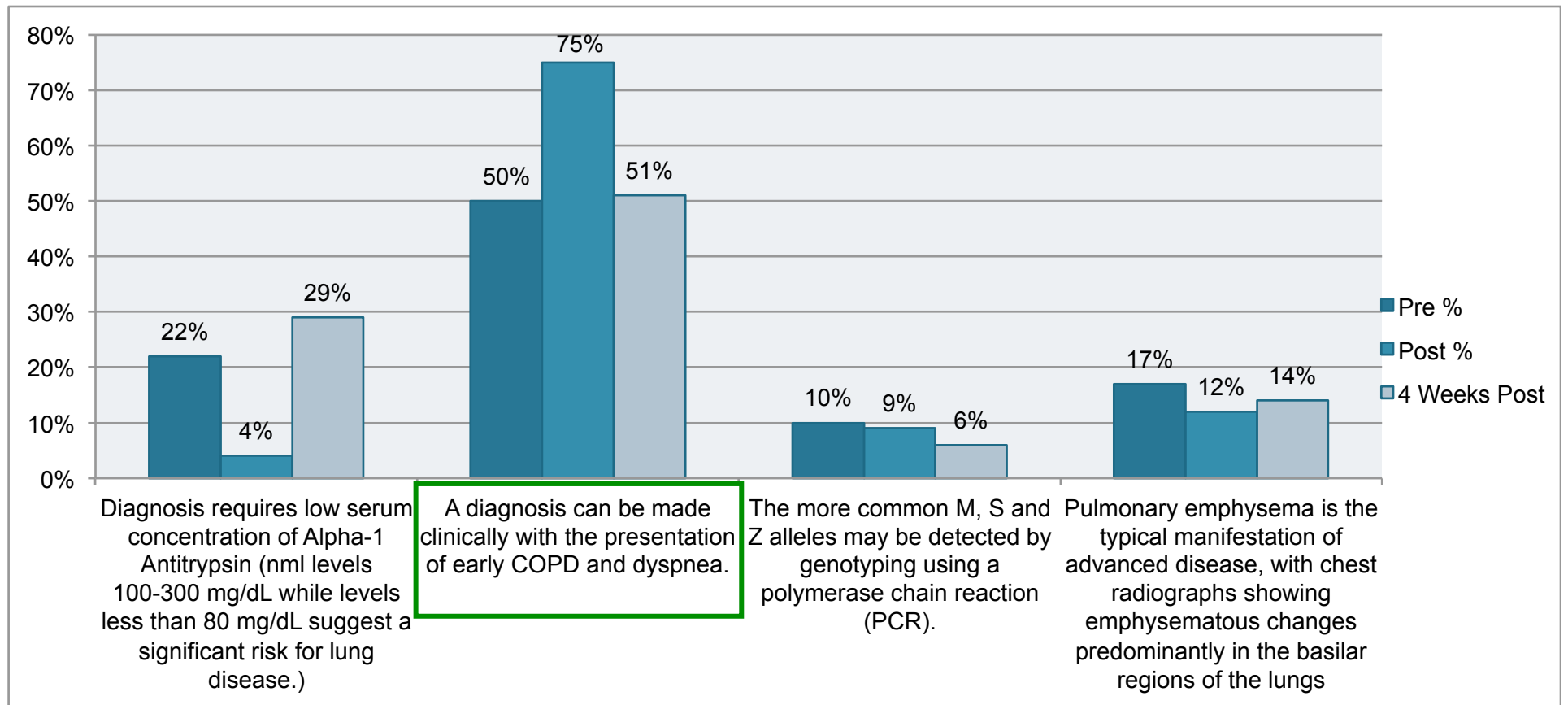
Green highlight indicates significant difference between pre and post testing.

## Four Week Case Study Questions

(boxed answer is correct)

John is a 52 y/o smoker with COPD who is not doing well on his current therapy. As you consider how else to manage his care, all of the following statements about diagnosing AATD are true except:

(Learning Objective 2)



Pre N = 109

Post N = 151

4 Weeks Post N = 49

Green highlight indicates significant difference between pre and post testing.

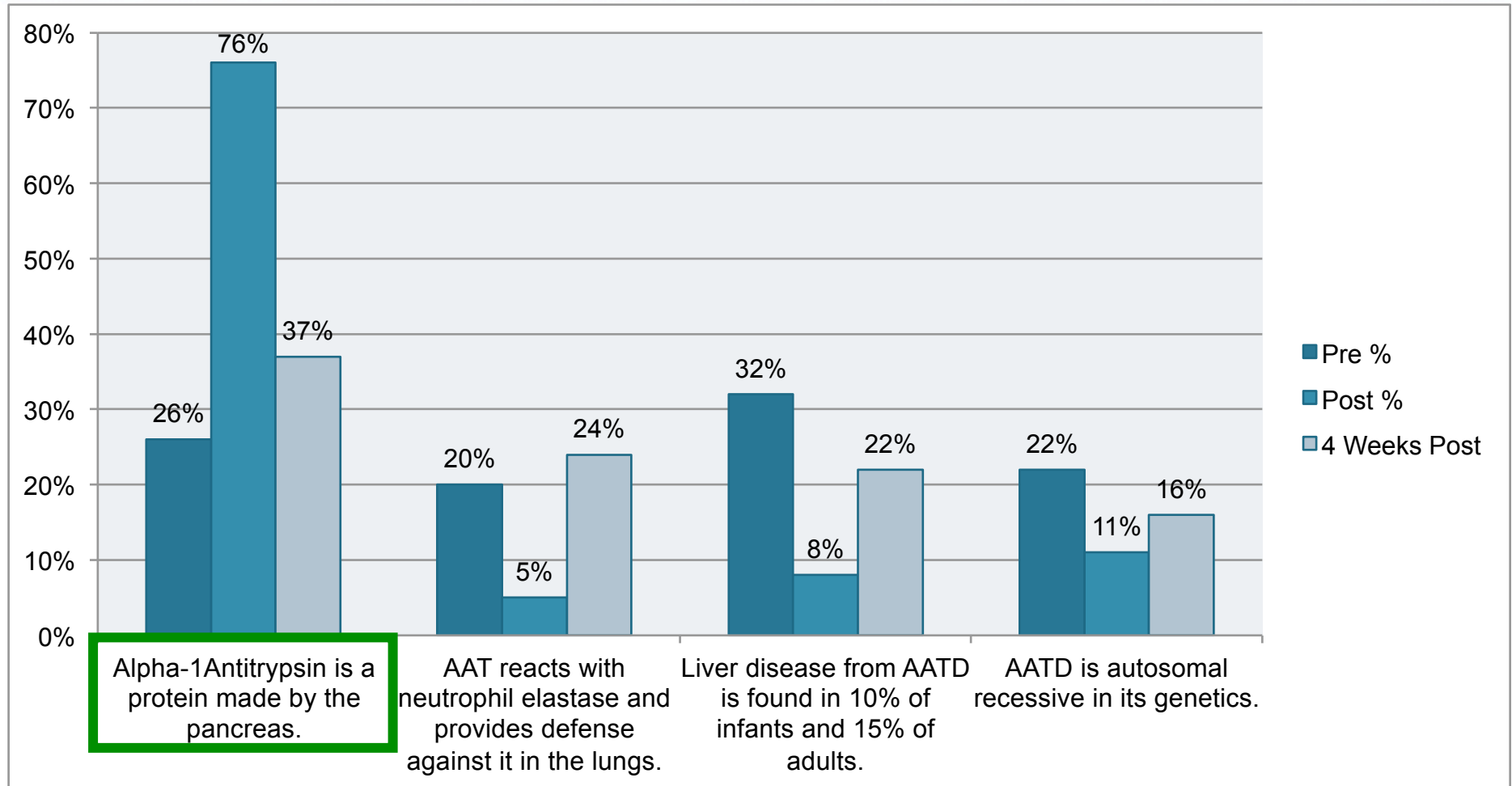


## Four Week Case Study Questions

(boxed answer is correct)

You ultimately diagnose John with Alpha-1 Antitrypsin Deficiency (AATD). He presents to discuss his condition and you tell him all of the following EXCEPT:

(Learning Objective 1)



Pre N = 146

Post N = 154

4 Weeks Post N = 49

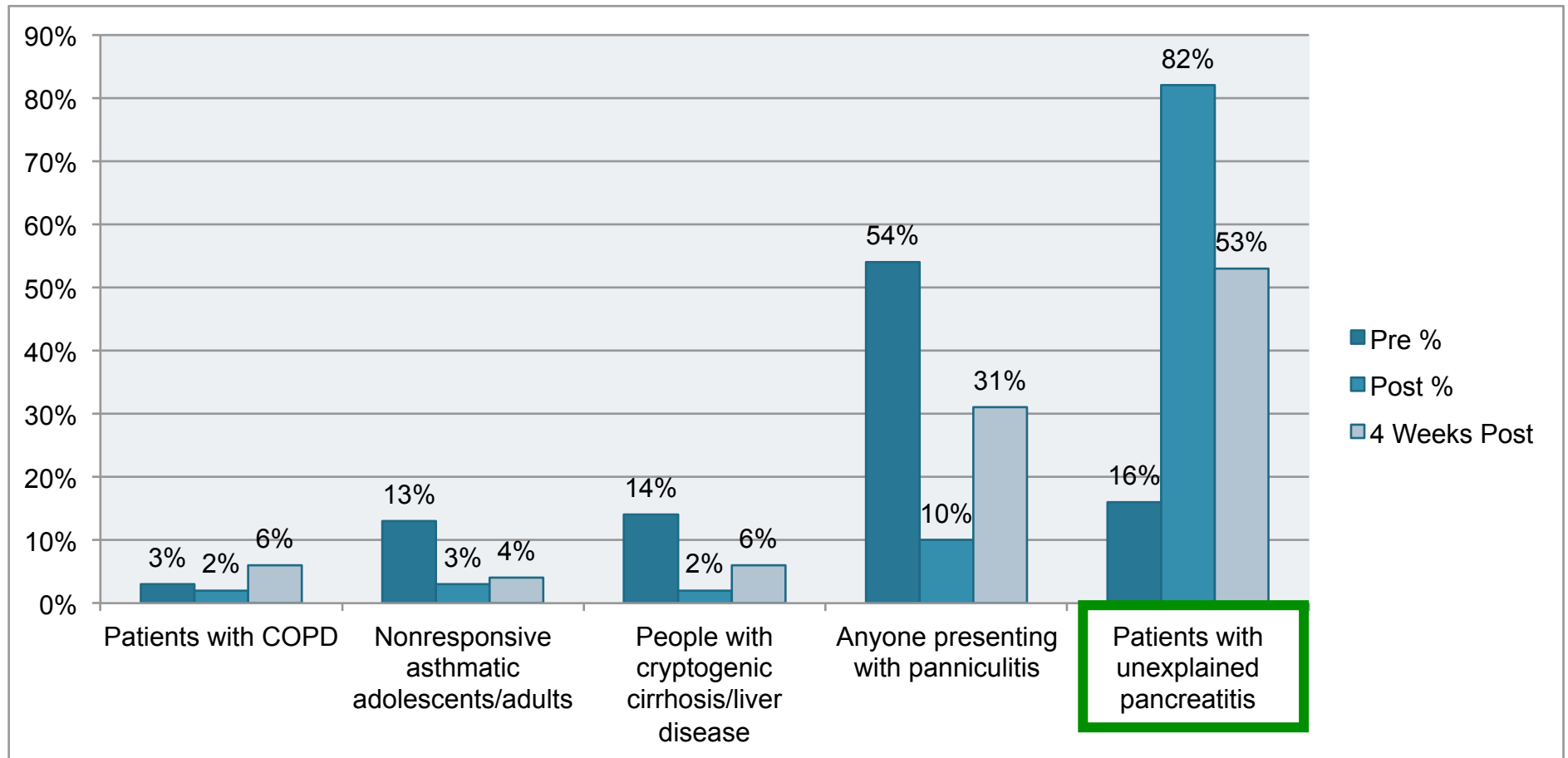
Green highlight indicates significant difference between pre and post testing.

## Four Week Case Study Questions

(boxed answer is correct)

You meet Mr. P, a 55y/o construction worker with persistent dyspnea. His FEV1 was 50% predicted and reversibility was demonstrated. He has asthma, initially diagnosed at the age of 40 but it has become progressively worse and unresponsive. According to the ATS, screening patients at risk for AATD include all of the following except:

(Learning Objective 3)

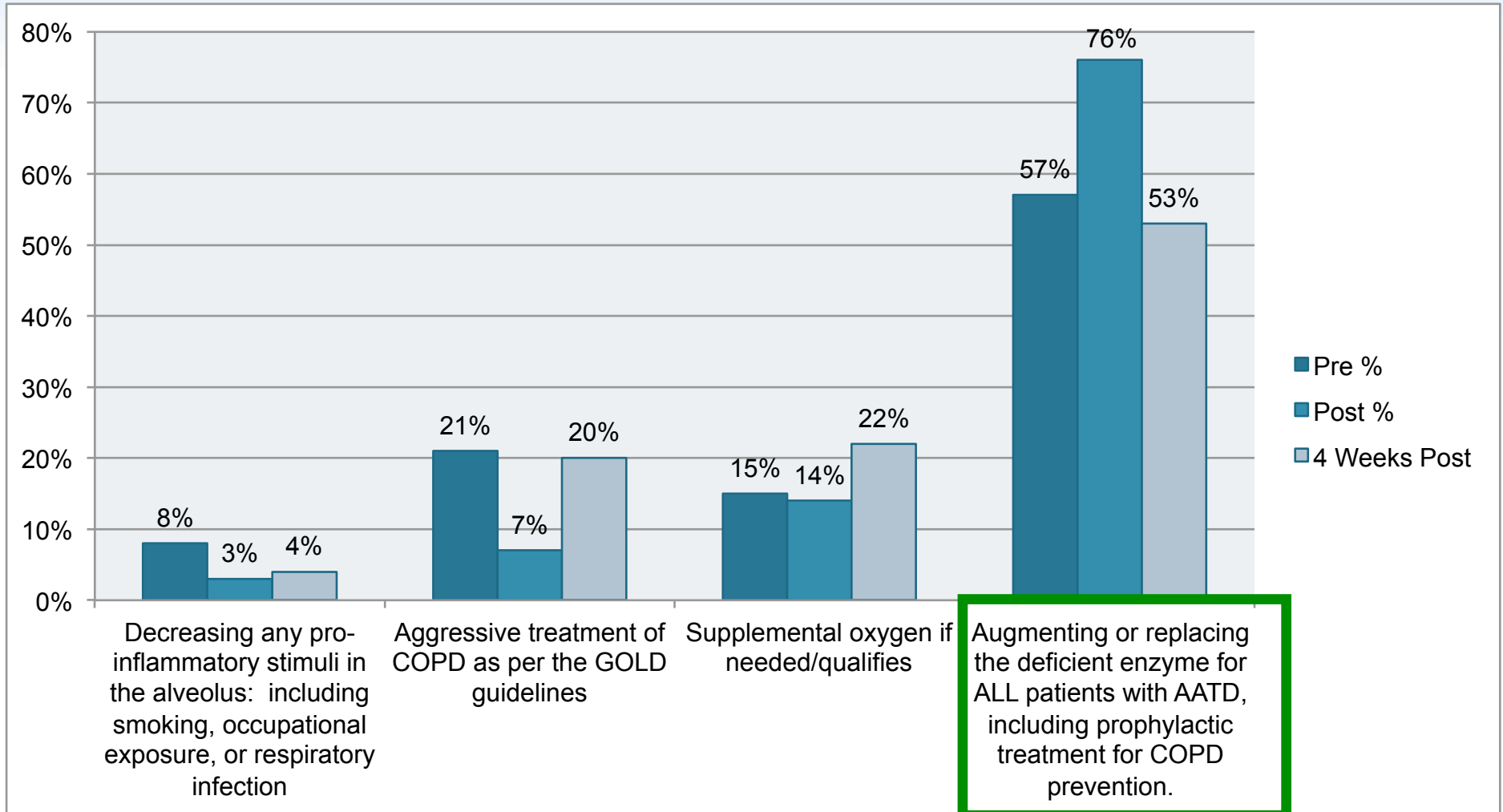


Pre N = 134    Post N = 162    4 Weeks Post N = 49    Green highlight indicates significant difference between pre and post testing.

## Four Week Case Study Questions

(boxed answer is correct)

Preventing or slowing the progression of lung disease is the major goal of alpha1-antitrypsin deficiency (AATD) management. Some strategies to achieve this goal are below EXCEPT:

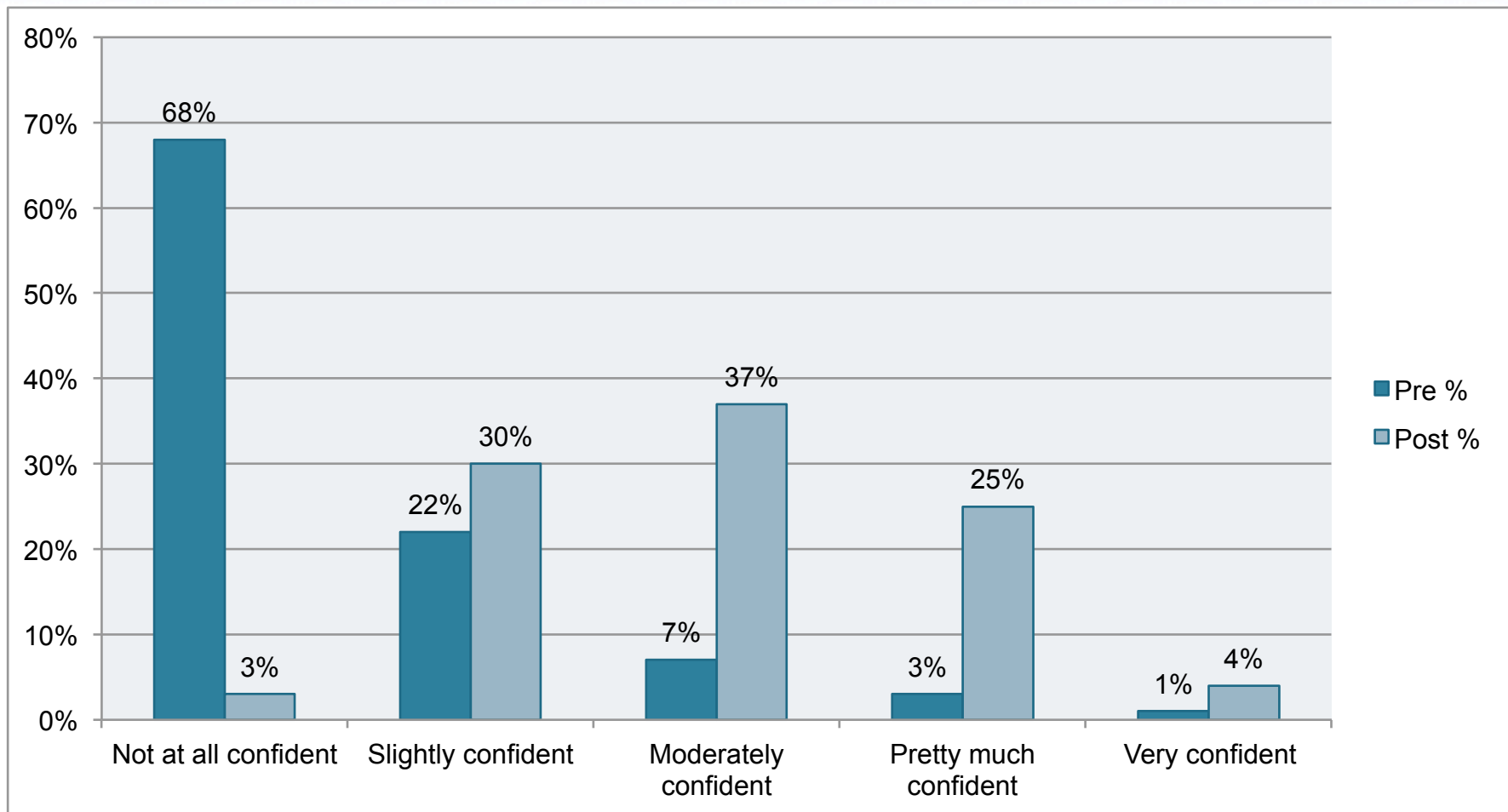


Pre N = 145    Post N = 129    4 Weeks Post N = 49    Green highlight indicates significant difference between pre and post testing.



# Chronic Obstructive Pulmonary Disease (COPD) and Alpha-1 Antitrypsin Deficiency (AATD): Bridging the Gaps in Diagnosis and Treatment

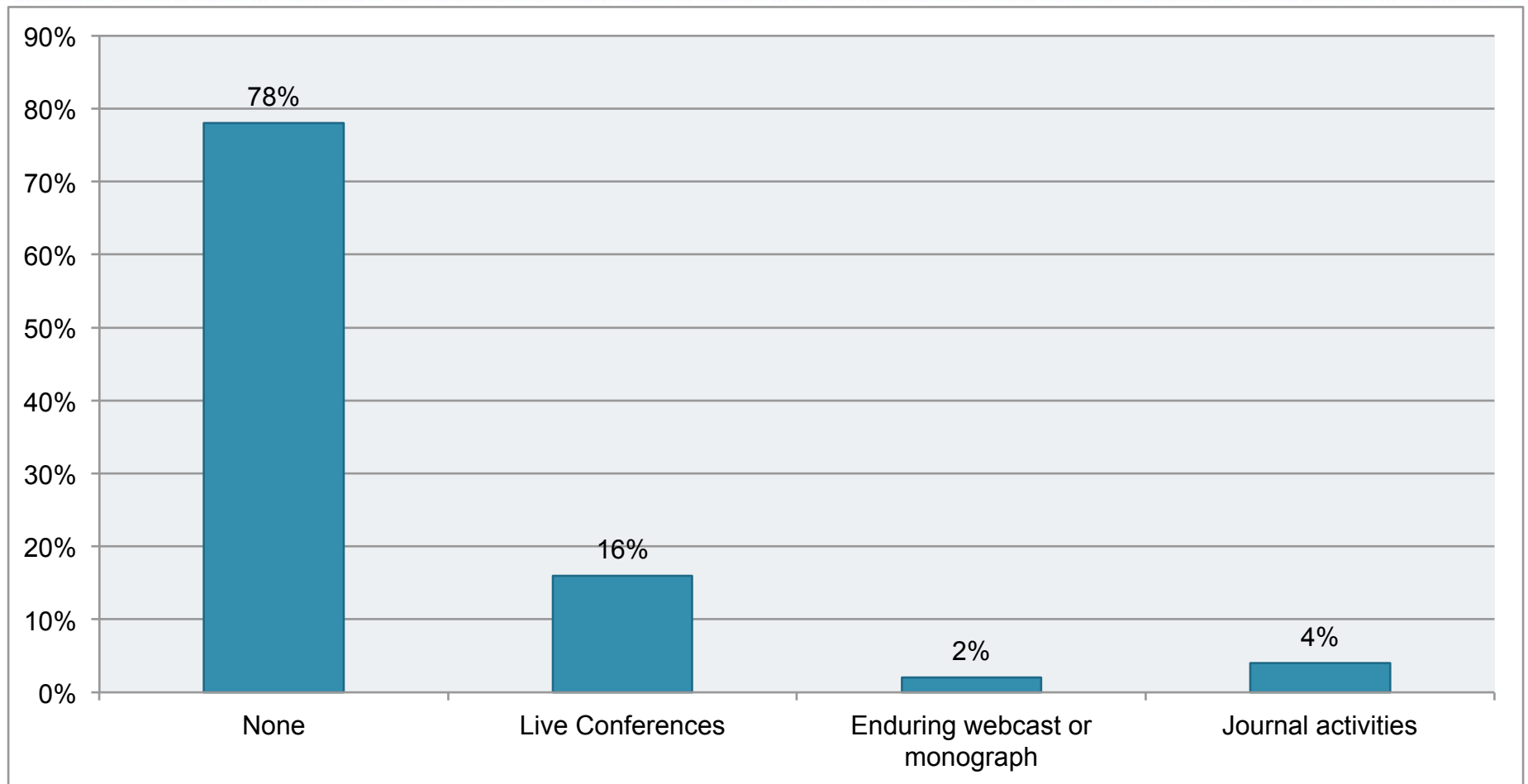
On a scale of 1 to 5, please rate your confidence in your ability to integrate the assessment and management of Alpha-1 Antitrypsin Deficiency into the care of patients with COPD:



Pre N = 152    Post N = 147

# Chronic Obstructive Pulmonary Disease (COPD) and Alpha-1 Antitrypsin Deficiency (AATD): Bridging the Gaps in Diagnosis and Treatment

Describe/list any other educational activities that you attended in the last month concerning the assessment and management of Alpha-1 Antitrypsin Deficiency into the care of patients with COPD?



## Chronic Obstructive Pulmonary Disease (COPD) and Alpha-1 Antitrypsin Deficiency (AATD): Bridging the Gaps in Diagnosis and Treatment

What specific skills or practice behaviors have you implemented for patients with COPD and Alpha-1 Antitrypsin Deficiency since this CME activity?  
(Comments received from attendees at 4 week follow up)

- “I am more aware of how to diagnose Alpha-1 Antitrypsin Deficiency”
- “I have begun testing patients for Alpha-1”
- “I now consider testing in patients with COPD”
- “I am more aware of this condition”
- “I consider testing for the deficiency more often”
- “I am more alert to test if indicated especially in young patients with more aggressive COPD or emphysema”

## Chronic Obstructive Pulmonary Disease (COPD) and Alpha-1 Antitrypsin Deficiency (AATD): Bridging the Gaps in Diagnosis and Treatment

What specific barriers have you encountered that may have prevented you from successfully implementing strategies for patients with COPD and Alpha-1 Antitrypsin Deficiency since this CME activity? (Comments received from attendees at 4 week follow up)

- Cost of testing
- Insurance coverage for testing and treatment
- Still need to know more about topic (N=3)
- Barriers to smoking cessation
- Lack of understanding about total changes in the patient with AAT
- Patient financial barriers

# Chronic Obstructive Pulmonary Disease (COPD) and Alpha-1 Antitrypsin Deficiency (AATD): Bridging the Gaps in Diagnosis and Treatment

## Data Interpretation: 247 clinicians at 2 meetings

Are more aware that a diagnosis of AATD can not be made clinically based the presentation of early COPD and emphysema but that certain levels of AAT are required to diagnose it

Understand that AAT is made in the liver, not in the pancreas

### Participant Educational Gains

Recognize the need to screen patients for AATD with panniculitis but not unexplained pancreatitis

Understand slowing progression of lung disease is accomplished by limiting pro-inflammatory stimuli, aggressively treating COPD and supplemental oxygen when indicated; not by replacing deficient enzyme in all AATD patients for COPD prevention

# Chronic Obstructive Pulmonary Disease (COPD) and Alpha-1 Antitrypsin Deficiency (AATD): Bridging the Gaps in Diagnosis and Treatment

**Data Interpretation: 247 clinicians at 2 meetings**

Strategies to diagnose AATD

Where AAT is produced, its function in the lungs and impact on the liver

**Participant  
Educational  
Gaps at 4 wks**

When to screen for AATD

Slowing the progression of lung disease

# **Chronic Obstructive Pulmonary Disease (COPD) and Alpha-1 Antitrypsin Deficiency (AATD): Bridging the Gaps in Diagnosis and Treatment**

## **New Specific Behaviors Reported at 4 weeks**

Greater awareness of  
the disease state

Screening patients more often

More comfortable with risk factors for AATD

# Chronic Obstructive Pulmonary Disease (COPD) and Alpha-1 Antitrypsin Deficiency (AATD): Bridging the Gaps in Diagnosis and Treatment

## Reported Barriers to Care at 4 weeks

Cost of testing

Patient Finances

Smoking cessation

Persistent lack of knowledge  
on the condition



# Chronic Obstructive Pulmonary Disease (COPD) and Alpha-1 Antitrypsin Deficiency (AATD): Bridging the Gaps in Diagnosis and Treatment

**Data Interpretation: 247 clinicians at 2 meetings**

78% of learners had no other exposure to CME programs on Alpha-1 Antitrypsin Deficiency in the month after attending this program

Significant improvement in confidence levels in ability to integrate assessment and management of AATD into care of patients with COPD

## KEY TAKE HOME POINTS

78% of learners surveyed indicated they had changed practice behavior 4 weeks after program

59% of attendees report seeing > 6 COPD patients at risk for AATD weekly, suggesting significant number of patients impacted by program.

## Discussion and Implications

### Chronic Obstructive Pulmonary Disease (COPD) and Alpha-1 Antitrypsin Deficiency (AATD): Bridging the Gaps in Diagnosis and Treatment

The need for continued education in the area of COPD and Alpha-1 Antitrypsin Deficiency, was demonstrated based on literature reviews and surveys completed prior to the conference series. Attendee knowledge was assessed at 3 points for this program: prior to the lecture, immediately following the lecture and again at 4 weeks after the conference using the case vignettes listed above.

#### **Data Interpretation:**

Data collected from 242 clinicians after 2 meetings, indicated a statistically significant improvement in knowledge in all 4 of the questions presented. Specifically, as a result of this lecture, participants:

1. Are more aware that a diagnosis of AATD can not be made clinically based the presentation of early COPD and emphysema but that certain levels of AAT are required to diagnose it;
2. Understand that AAT is made in the liver, not in the pancreas;
3. Recognize the need to screen patients for AATD with panniculitis but not unexplained pancreatitis;
4. Understand that slowing the progression of lung disease in AATD can be accomplished by limiting pro-inflammatory stimuli, aggressively treating COPD and providing supplemental oxygen when indicated but not by replacing deficient enzyme in all AATD patients for COPD prevention.

Moderate to very confident levels in the ability to integrate the assessment and management of Alpha-1 Antitrypsin Deficiency into the care of patients with COPD rose from 11 to 66%.



## Discussion and Implications

### Chronic Obstructive Pulmonary Disease (COPD) and Alpha-1 Antitrypsin Deficiency (AATD): Bridging the Gaps in Diagnosis and Treatment

Data obtained from participants 4 weeks after the program demonstrated some decline in learning from the post-test scores in all areas, but continued improvement from pre-test scores in all areas but one. Learners remained unclear on strategies to slow the progression of lung disease in AATD.

Persistent gaps in knowledge were evident with additional education needed in the following areas:

1. Strategies to diagnose AATD
2. Where AAT is produced, its function in the lungs and impact on the liver
3. When to screen for AATD
4. Slowing the progression of lung disease

99% of participants reported being likely to utilize information learned from this presentation in their practice. In actuality, 78% of learners who responded to our four week survey indicated that they had changed their practice behavior to implement the learning objectives of this program after they attended the activity. 59% of attendees report seeing 6 or more patients with COPD on a weekly basis, at risk for AATD, suggesting a significant number of patients will be impacted by this program.

Attendees indicated multiple new, specific, practice behaviors they implemented as a result of this program that included:

1. Greater awareness of the disease state
2. Screening patients more often
3. More comfortable with risk factors for AATD



## **Discussion and Implications**

### **Chronic Obstructive Pulmonary Disease (COPD) and Alpha-1 Antitrypsin Deficiency (AATD): Bridging the Gaps in Diagnosis and Treatment**

78% of learners had no other exposure to CME programs on Alpha-1 Antitrypsin Deficiency in the month after attending this program indicating their behavior changes were likely related to this program.

Barriers to care included:

1. Cost of testing
2. Persistent lack of knowledge on the condition
3. Smoking cessation
4. Patient finances

The notable changes in post test scores, and change in practice patterns regarding the evaluation and management of COPD and Alpha-1 Antitrypsin Deficiency, signifies a clear gap in knowledge and an unmet need among primary care clinicians. It continues to be an important area for future educational programs.