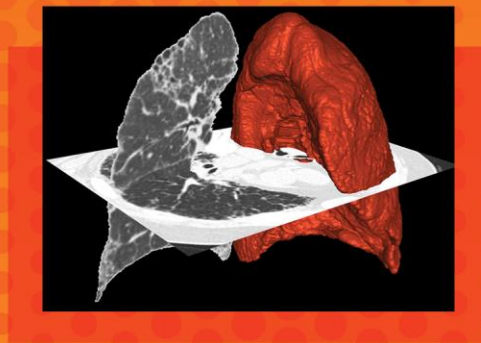


Diagnosis and Treatment of ILD with a Progressive Lung Disease Phenotype: Clinical Implications of Emerging Data

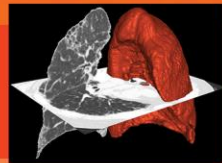


CHEST Symposium Final Report
Live and Online
Educational Initiative
Grant ID: ME201822863



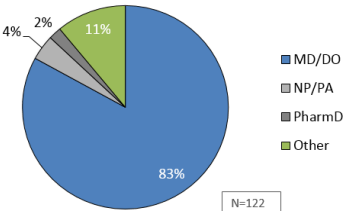
#1 in Respiratory Care





Live Participation

122 Attendees at the live symposium
 ✓ 87% prescribers
 ✓ 100% from specialty of pulmonology



552 potential patients impacted

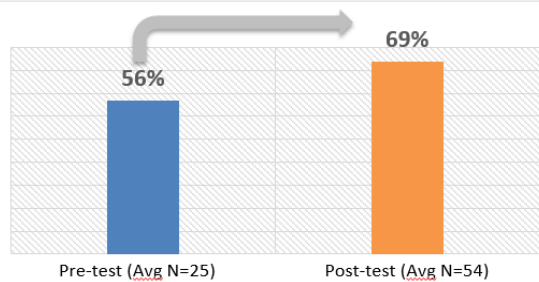
Satisfaction

- 99% said that the infographic was a helpful clinical tool for identifying progressive ILD
- 99% said that the activity met their learning needs
- 99% said the activity reinforced or improved current skills
- 98% said that the activity improved ability to treat patients
- 99% said that the activity enhanced ability to apply Learning Objectives to practice

Educational Impact

“This was one of the best programs I have attended at any CHEST meeting!”

23% overall relative increase in knowledge from pre to post-test

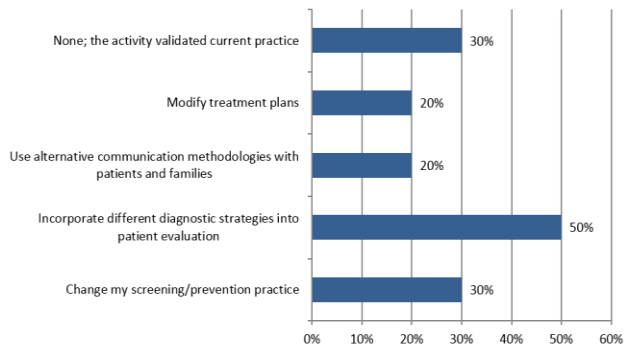


Closing the Gap

97% increase in knowledge related to LO 2 - defining ILD with a progressive phenotype in new patients and as the disease changes over time (Q2).

Performance

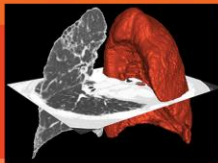
On follow-up survey, **80%** had made changes or were planning to make the following changes to their practice:



Persistent Learning Needs

Respondents to the live evaluation recommended the following topics they would like more information on in future education:

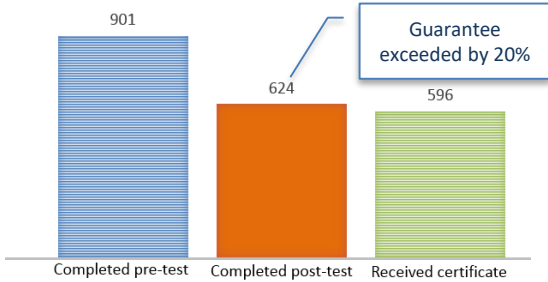
- Practical management of ILD
- New therapeutic options
- HSP Management
- CTD ILD
- Sarcoidosis



Online Participation

2616 learners engaged with the online content

■ Participants ■ Completers ■ Certificates



Satisfaction

“I believe this illness is one of the most challenging for me to deal with! THANK YOU for helping me to help my patients!”

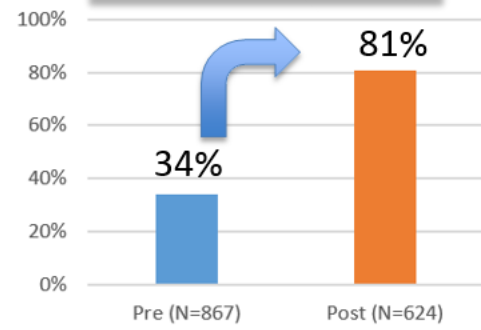
“Excellent use of physiology and radiology to offer ongoing assessment and prediction!”

“Great video presentation!”

Educational Impact

In addition to descriptive statistics, levels of significant and effect size were calculated to demonstrate the impact of the activity.

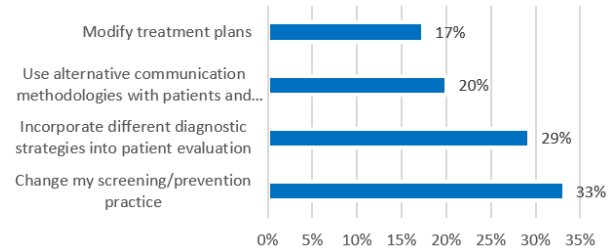
139% overall relative gain in knowledge from pre to post activity



100% of all questions represented a very large or large effect. All questions demonstrated a significant change in knowledge from pre to post test.

Intent to Change

89% of learners report that they are somewhat to extremely likely to make changes to their practice based on what they learned

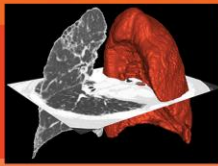


Persistent Gaps/Learning Needs

A possible gap persists related to distinguishing the prognosis for CTD-ILD from IPF (Q6) – only 77% answered correctly

Recommendations for future education:

- ✓ Pulmonary Hypertension
- ✓ Phenotyping of ILD
- ✓ Emerging therapies
- ✓ Rare ILD's



Diagnosis and Treatment of ILD with a Progressive Lung Disease Phenotype:

Clinical Implications of Emerging Data



CHEST Symposium: Program Faculty

Joshua Solomon, MD, FCCP

Associate Chief, Section of Critical Care,
Assistant Professor
Department of Medicine, Division of
Pulmonary
Critical Care & Sleep Medicine Section
of Critical Care Medicine
National Jewish Health
Denver, CO



Zulma Yunt, MD

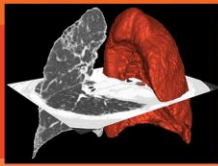
Associate Professor
Department of Medicine, Division of
Pulmonary
Critical Care & Sleep Medicine Section
of Critical Care Medicine
National Jewish Health
Denver, CO



Jonathan Chung, MD

Associate Professor of Radiology
Section Chief
Thoracic Radiology Interim Chief of
Quality
Department of Radiology
University of Chicago Medical Center
Chicago, IL





Diagnosis and Treatment of ILD with a Progressive Lung Disease Phenotype:

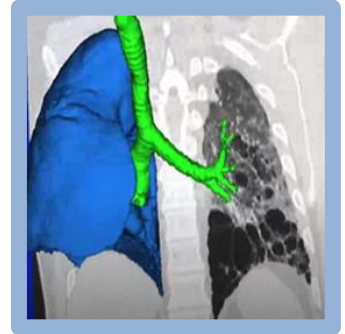
Clinical Implications of Emerging Data

CHEST Symposium: Program Background & Objectives

Background

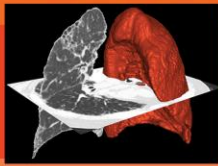
This interactive CME symposium was held in conjunction with the annual American College of Chest Physicians (CHEST) meeting, October 2018 in San Antonio, TX. The goal was to improve the awareness, knowledge and competency of Pulmonologists, Radiologists and Pathologists, in the diagnosis, management, and treatment of ILDs with a progressive phenotype.

Target Audience:
Pulmonologists,
Radiologists, and
Pathologists



Objectives

1. Describe best practices for classifying ILD subtypes and phenotypes.
2. Define ILD with a progressive phenotype in new patients and as the disease changes over time.
3. Discuss strategies for initial treatment and management protocols for patients with a progressive ILD phenotype.



Diagnosis and Treatment of ILD with a Progressive Lung Disease Phenotype:

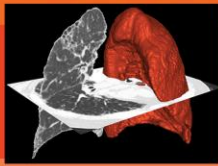
Clinical Implications of Emerging Data

CHEST Symposium: Accreditation

National Jewish Health is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.



Accreditation Details: NJH designates this live educational activity for 1.0 AMA PRA Category 1 Credits™.



Diagnosis and Treatment of ILD with a Progressive Lung Disease Phenotype: Clinical Implications of Emerging Data

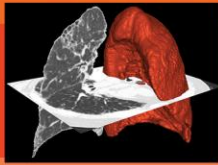
CHEST Symposium: Outcomes Strategy

Outcomes will be measured via participation totals, specialty, designation, pre-test, post-test, clinically based decisions in case simulations, and evaluations.

The metrics will demonstrate participation, satisfaction, engagement, and change in knowledge and competency to achieve Moore's Level 4 outcomes.

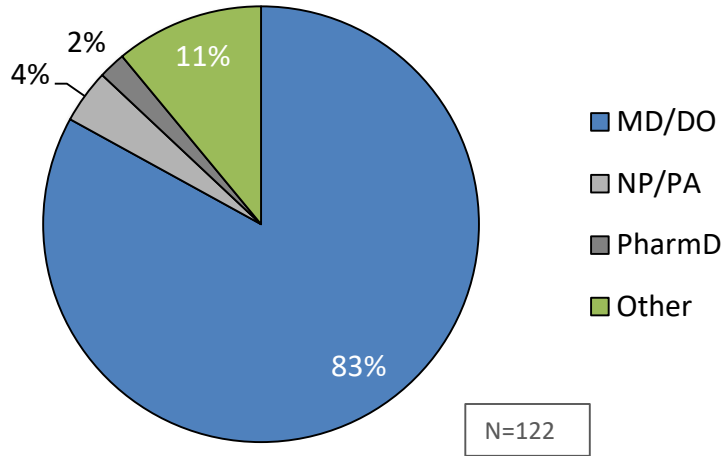


LIVE ACTIVITY

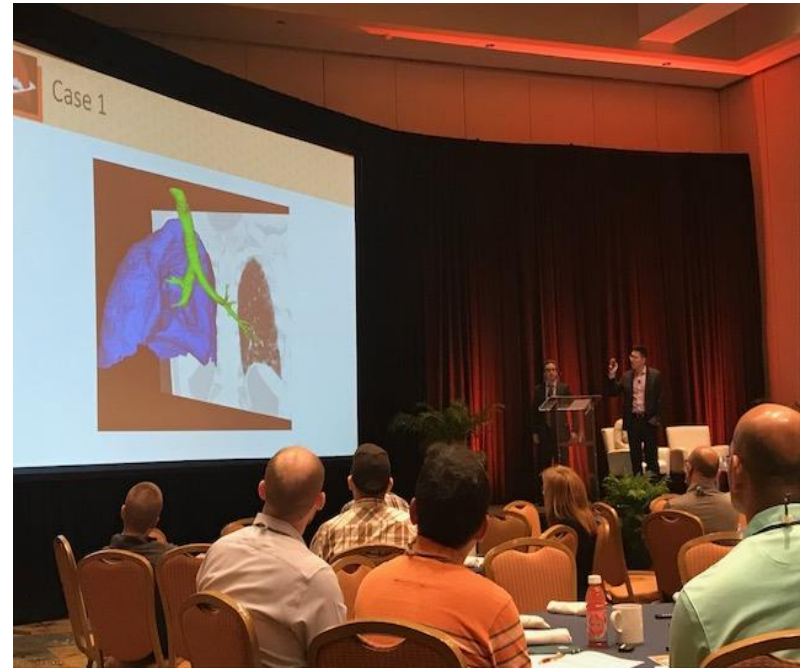


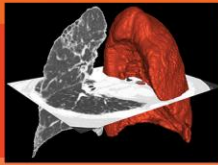
Diagnosis and Treatment of ILD with a Progressive Lung Disease Phenotype: Clinical Implications of Emerging Data

Interim Report: CHEST Symposium Level 1 Outcomes: Participation



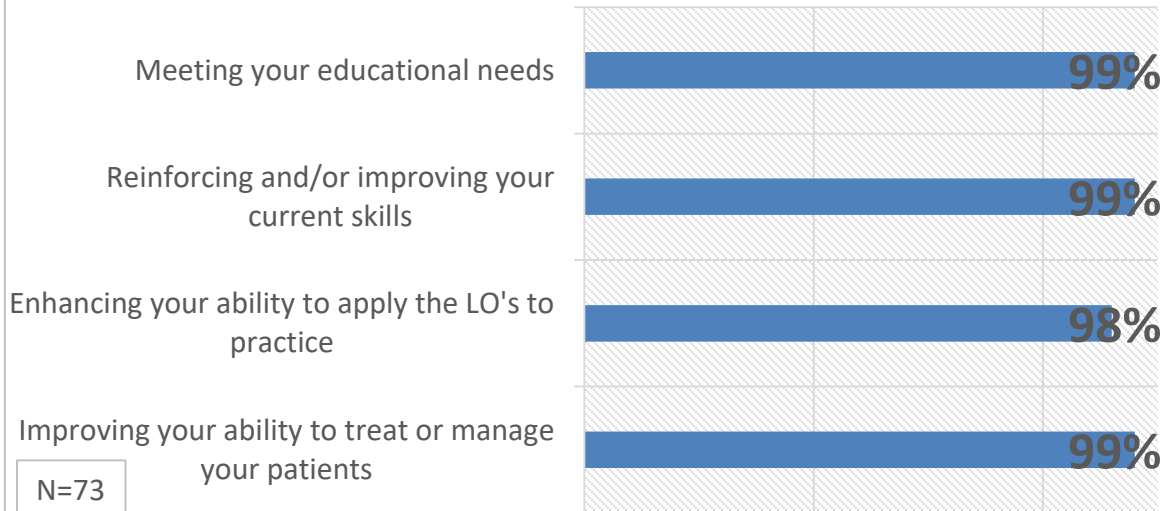
87% of learners are prescribers
100% of learners in Pulmonology

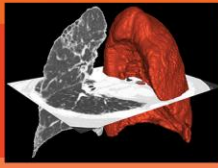




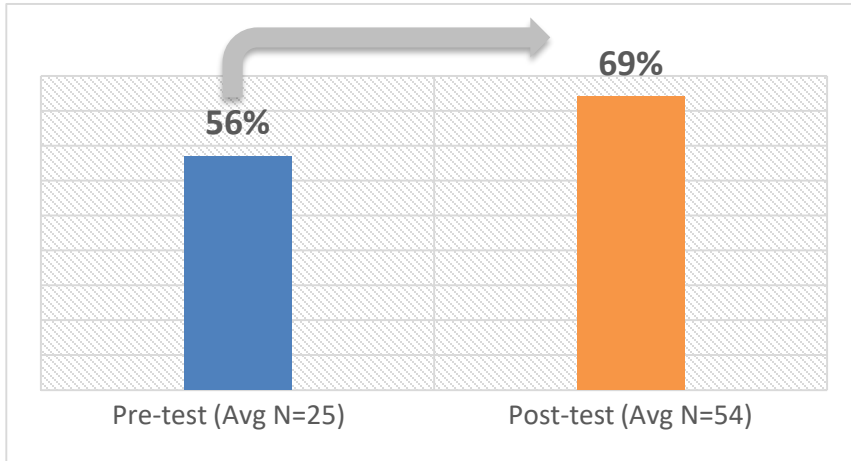
Level 2 Outcomes: Learning & Satisfaction

Participants report the activity was “Good” to “Excellent” at:





Level 3 Outcomes: Knowledge

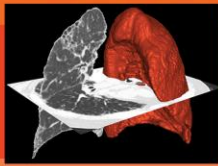


Level 3 outcomes were measured by comparing pre-and post-test answers. Attendees' responses to these questions demonstrated that **participants gained knowledge as a result of the activity.**

Overall relative knowledge gain from pre- to post activities



23%



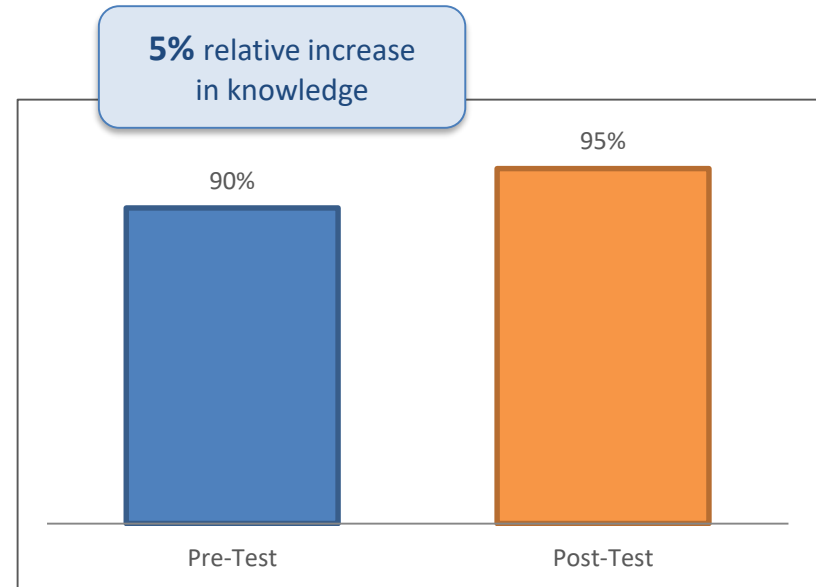
CHEST Symposium

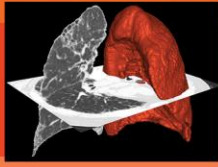
Assessment: Pre-Test/Post-Test (Question 1)

Q1: What is the most important factor in determining prognosis for a patient with ILD:

- A. The HRCT pattern
- B. Making the correct ILD diagnosis ✓**
- C. Geographic location of the patient
- D. Family history
- E. History of tobacco use

Pre-test N = 21
Post-test N = 60



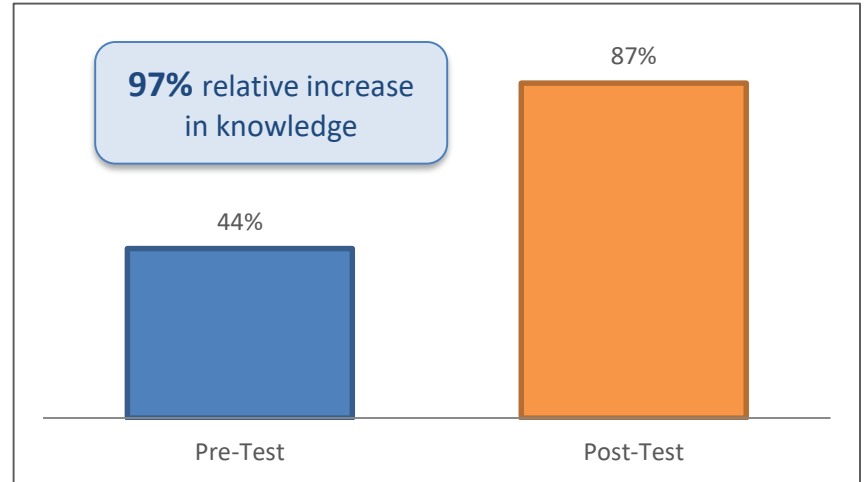


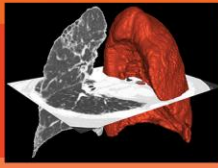
CHEST Symposium Assessment: Pre-Test/Post-Test (Question 2)

Q2: Longitudinal predictors of mortality in IPF include all of the following except:

- A. Decline in FVC or DLCO
- B. Acute exacerbations
- C. Change in 6MWD
- D. Ground glass opacities on HRCT ✓**
- E. Worsening in respiratory symptoms requiring hospitalization

Pre-test N = 25
Post-test N = 53





CHEST Symposium

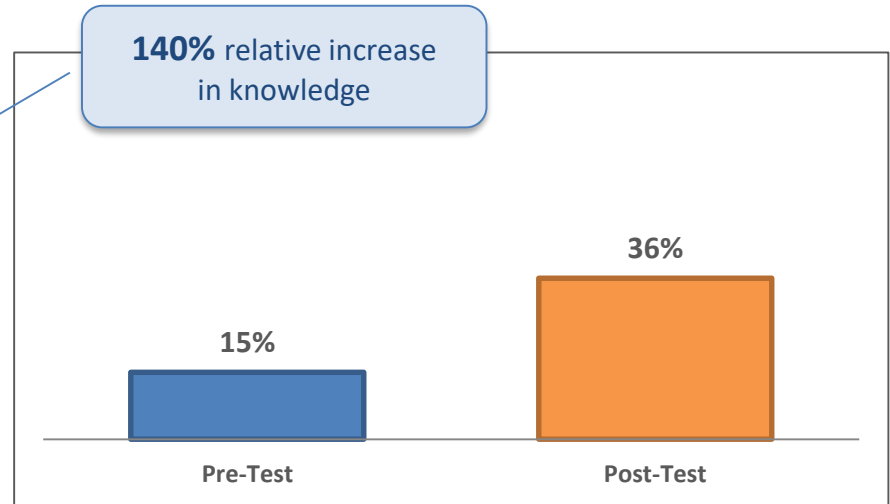
Assessment: Pre-Test/Post-Test (Question 3)

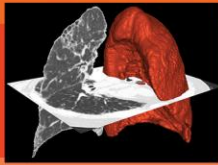
Q3: The GAP model for predicting outcome in IPF looks at Gender, Age and Pulmonary Symptoms:

- A. True
- B. False ✓
- C. I am not certain

Despite the noted gain, this remains a possible persistent gap in knowledge – only 36% answered correctly

Pre-test N = 26
Post-test N = 33





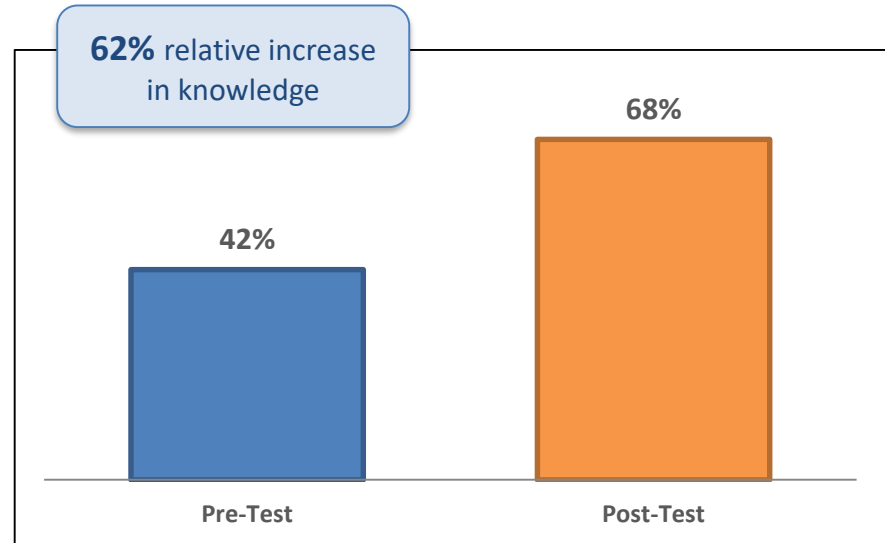
CHEST Symposium

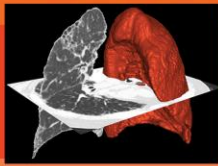
Assessment: Pre-Test/Post-Test (Question 4)

Q4: Which of the following has been shown to predict outcome in Hypersensitivity Pneumonitis?:

- A. Geographic location
- B. Fibrosis on HRCT
- C. The ability to find the antigen
- D. B and C ✓**
- E. All of the above

Pre-test N = 17
Post-test N = 32



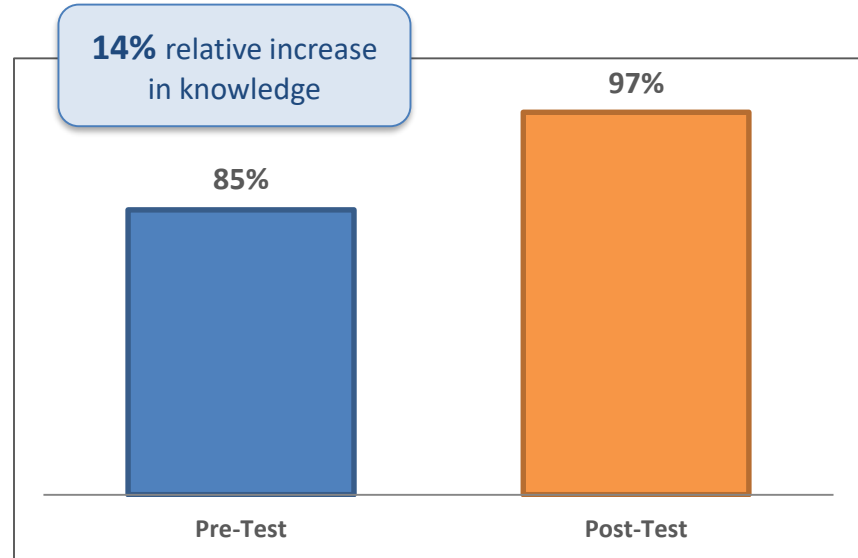


CHEST Symposium

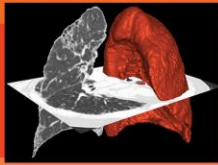
Assessment: Pre-Test/Post-Test (Question 5)

Q5: Connective Tissue Disease (CTD-ILD) in general has a better prognosis than IPF:

- A. True ✓
- B. False
- C. I am not certain



Pre-test N = 39
Post-test N = 32

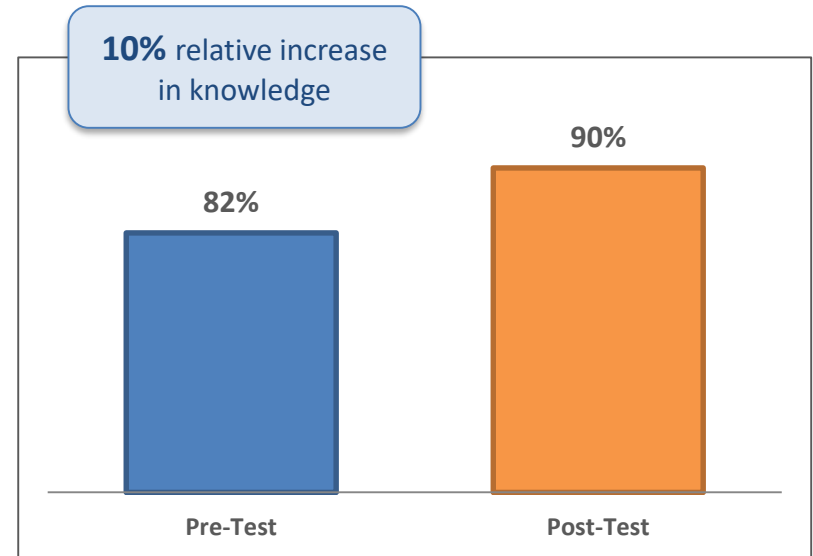


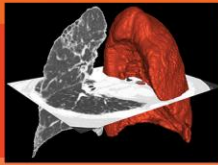
CHEST Symposium

Assessment: Pre-Test/Post-Test (Question 6)

Q6: The ability to predict outcome in patients allows the physician to do the following except:

- A. Refer to transplant in a timely fashion
- B. Counsel the patient on what to expect
- C. Plan approximately timed follow-up visits
- D. Predict 6 month changes in FVC and DLCO✓**
- E. Adjust/start pharmacotherapy





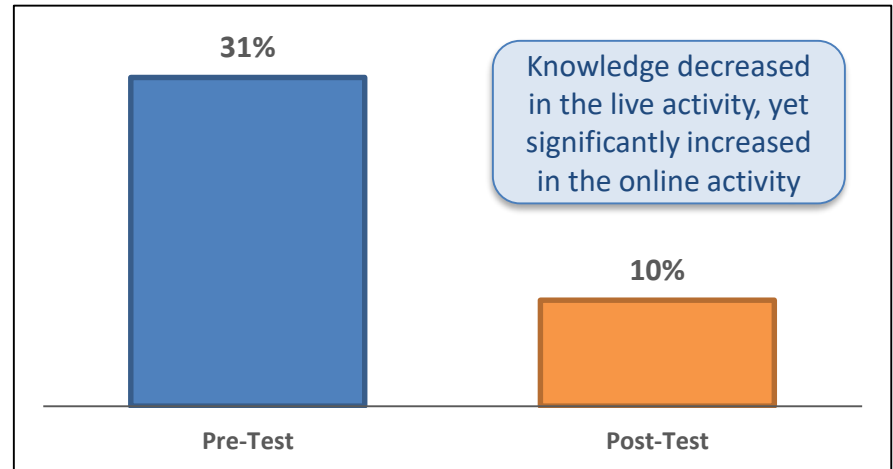
CHEST Symposium

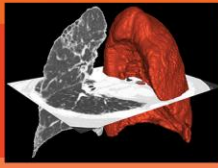
Assessment: Pre-Test/Post-Test (Question 7)

Q7: When accounting for baseline physiology, which of the following predicts outcome in patients with RA-ILD:

- A. Sex
- B. Age
- C. HRCT pattern of fibrosis
- D. 6 month changes in FVC and DLCO
- E. **None of the above predict outcome ✓**

Pre-test N = 29
Post-test N = 32





Level 4 Outcomes: Competence

>96% plan to make changes to their practice as a result of what they learned (N=41)

44%

68%

24%

50%



Change screening/prevention practices



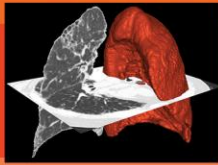
Incorporate different diagnostic strategies into patient evaluation



Use alternative communication methodologies with patients and families



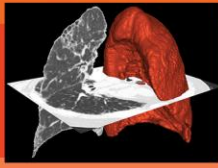
Modify Treatment Plans



CHEST Symposium: Learner Evaluation – Level 4 Outcomes

- **96%** of learners report that they intend to make changes to practice as a result of the activity
- **100%** of learners report that the content presented was evidence based and clinically relevant
- **93%** of learners report that the activity addressed strategies for overcoming barriers to optimal patient care
- **100%** of learners report that the material was presented in an objective manner and free of commercial bias

LIVE ACTIVITY



Diagnosis and Treatment of ILD with a Progressive Lung Disease Phenotype: Clinical Implications of Emerging Data

CHEST Symposium: Learner Evaluation – Clinical Reference Aid

96% of learners report that they are somewhat to extremely likely to use the clinical reference aid infographic in practice

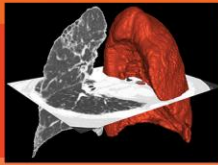
Jonathan Chung liked
Nancy Stewart @nvhs0401 · 1d
Great #infographic on #IPF!! Thanks for sharing @jonherochung #Chest2018

Jonathan Chung @jonherochung
In San Antonio and want to learn more about ILD diagnosis? Come to our satellite breakfast symposium at 615am on Monday, Oct 8th in the Marriott Rivercenter, Salon I-J. With Joshua Solomon, MD and Zulma Yunt, MD. nationaljewish.org/ildsanantonio2... #CHEST2018 @accpcchest

Recognizing ILD with Progressive Lung Disease Phenotype

STEP 1 Correctly Diagnose ILD

<p>DIFFERENTIAL DIAGNOSIS</p> <ul style="list-style-type: none"> •HBO testing for symptoms of connective tissue disease (e.g. Rheumatoid arthritis, the rheinoiditis, joint inflammation) •Medications (e.g. chemotherapy, antibiotics, amiodarone, nitrofurantoin) •Occupational disease (e.g. asbestos, coal dust, silica exposure) •Environmental factors (e.g. birds, mold, heavy) 	<p>CLINICAL</p> <ul style="list-style-type: none"> •Signs of connective tissue disease (e.g. skin tightening of the fingers, scleroderma, "rheumatoid hand", joint pain) •Looking for evidence of severity (e.g. high-resolution CT scan, extent of respiratory function) 		
<p>ANEM</p> <ul style="list-style-type: none"> •FVC < 80% predicted •DLCO < 60% predicted •Rapidly changing 	<p>PHYSIOLOGY FUNCTION TESTING</p> <ul style="list-style-type: none"> •Spirometry •PFT •DLCO •Diffusion capacity for CO 	<p>IMAGES OR DIAGNOSTICS</p> <ul style="list-style-type: none"> •HRCT •Chest X-ray •PFT •Sputum 	<p>DIFFERENTIAL DIAGNOSIS</p> <ul style="list-style-type: none"> •HBO testing for connective tissue disease •Medications (e.g. chemotherapy, antibiotics, amiodarone, nitrofurantoin) •Occupational disease (e.g. asbestos, coal dust, silica exposure) •Environmental factors (e.g. birds, mold, heavy)



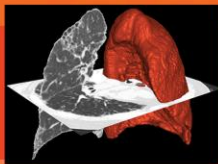
Key Lessons Learned

- Importance of correct diagnosis
- Early referral for transplant evaluation
- HRCT patterns
- Baseline mild abnormal PFT is not reassuring of slow decline
- Need for a thorough and methodical evaluation in every patient



Needs for Further Education

- Predicting outcome in RA-ILD
- New therapeutic options for ILD
- Management of ILD/Immunologic therapies
- Sarcoidosis
- Immunologics in the treatment of pulmonary disease
- Treatment options/combination treatments



Diagnosis and Treatment of ILD with a Progressive Lung Disease Phenotype: Clinical Implications of Emerging Data



CHEST Symposium: Online Program

Diagnosis and Treatment of ILD with a Progressive Lung Disease Phenotype: Clinical Implications of Emerging Data

Important note: After viewing the content, scroll down and click the blue "Go to Post-test" button at the bottom of the page.

Diagnosis and Treatment of ILD with a Progressive Lung Disease Phenotype: Clinical Implications of Emerging Data

Diagnosing ILD Infographic (PDF)

Launched on myCME
November 16, 2018

Diagnosis and Treatment of ILD with a Progressive Lung Disease Phenotype: Clinical Implications of Emerging Data

Supported by an educational grant from Boehringer Ingelheim Pharmaceuticals, Inc.

Activity Contents

CME Information

Pretest

Video

Posttest

Evaluation

Overview

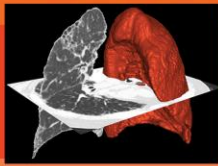
Authors/Faculty: Joshua Solomon, MD, FCCP, Zulma Yank, MD, Jonathan Chung, MD
Source: Healis Education Lab - Pulmonology
Type: Video
Release Date: 11/16/2018
Credit Type: CME
Articles/Items: 2
Expiration Date: 11/15/2019
Number of Credits: 1
Cost: Free
Provider(s): National Jewish Health

The arrival of new therapeutic options for Idiopathic Pulmonary Fibrosis (IPF) has stimulated vigorous interest in the Interstitial Lung Diseases (ILDs) that are associated with rapid progression. In order for patients with ILD to benefit fully from new developments, more attention needs to be able to competently identify, monitor, and treat critically ill patients.



Launched on Healio
May 30, 2019





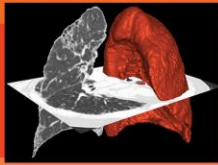
Diagnosis and Treatment of ILD with a Progressive Lung Disease Phenotype: Clinical Implications of Emerging Data

Background: The online activity is based on the content of the live meeting to extend reach to additional audiences. The presentation includes case-based presentations related to the classification of ILD subtypes and phenotypes led by expert faculty. The presenters will reinforce key learning points by using an infographic clinical reference aid developed for the activity, interactive polling, HRCT images, and HRCT reconstructions/3D animations rendered at NJH.

Target Audience (Online enduring activity): Pulmonologists, Radiologists, and Pathologists, as well as Primary Care Physicians, Nurse Practitioners, and Physician Assistants

Learning Objectives:

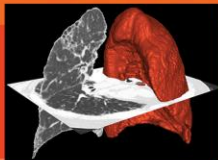
1. Describe best practices for classifying ILD subtypes and phenotypes.
2. Define ILD with a progressive phenotype in new patients and as the disease changes over time.
3. Discuss strategies for initial treatment and management protocols for patients with a progressive ILD phenotype.



Diagnosis and Treatment of ILD with a Progressive Lung Disease Phenotype: Clinical Implications of Emerging Data

Target Audience: Pulmonologists, Radiologists, and Pathologists, as well as Primary Care Physicians, Nurse Practitioners, and Physician Assistants.

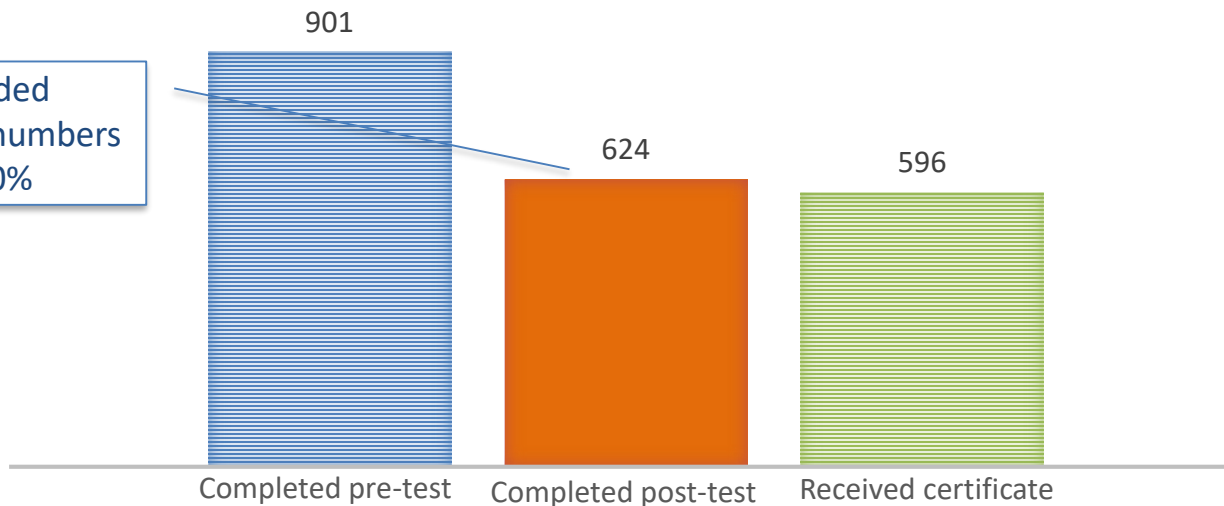
Educational Outcomes Strategy: NJH will provide outcomes on Moore's Outcome Levels 1-4: Participation, Satisfaction, Knowledge and Competence. Pre-tests and post-tests will be distributed to measure the participants' change in knowledge on the topics covered during this educational initiative, and evaluations will be collected to understand participants' engagement in the activity, intention to change (competence), and appropriateness of the learning modality and content. The outcomes evaluation data will assist in identifying additional gaps for future educational initiatives.



CHEST Symposium Online: Level 1 Outcomes (Participation)

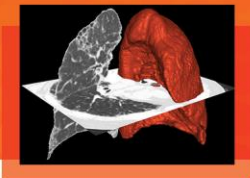
■ Participants ■ Completers ■ Certificates

Exceeded
proposed numbers
by 20%



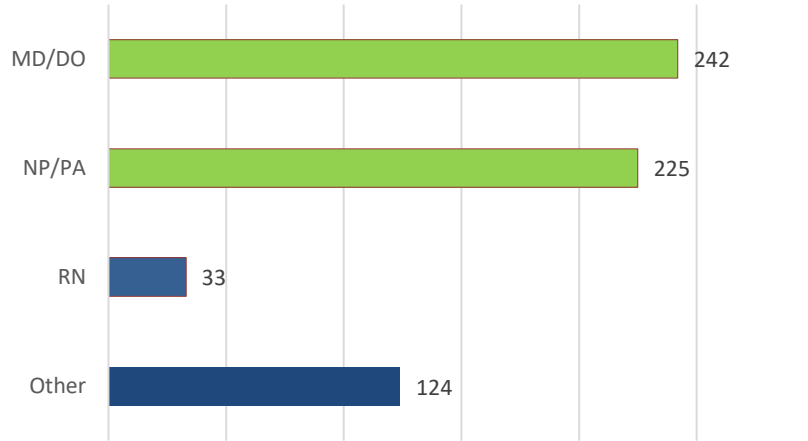
2616 online
learners
engaged in
the content

✓ Proposed: 2,000 learners or 500 completers

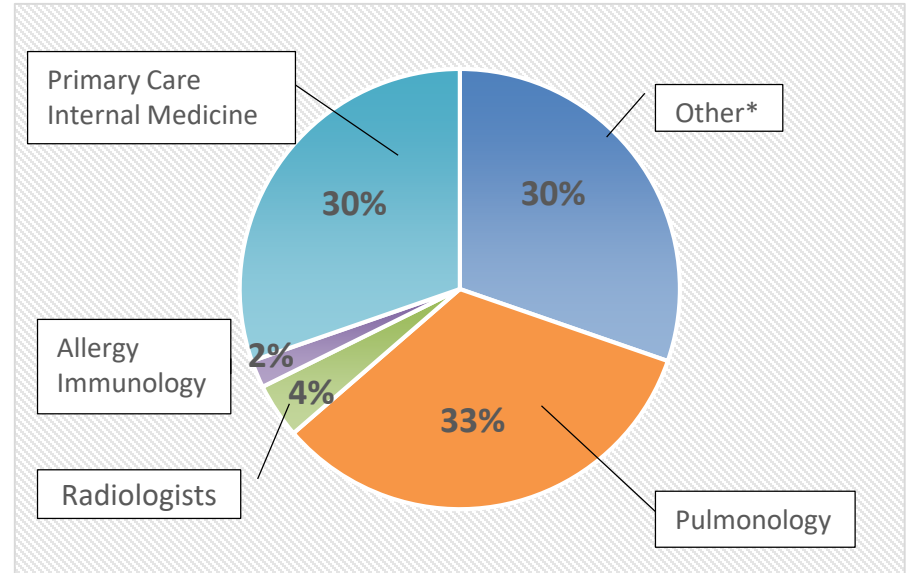


CHEST Symposium Online: Level 1 Outcomes Evaluation (Participation)

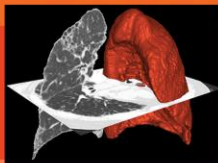
Completers by Designation



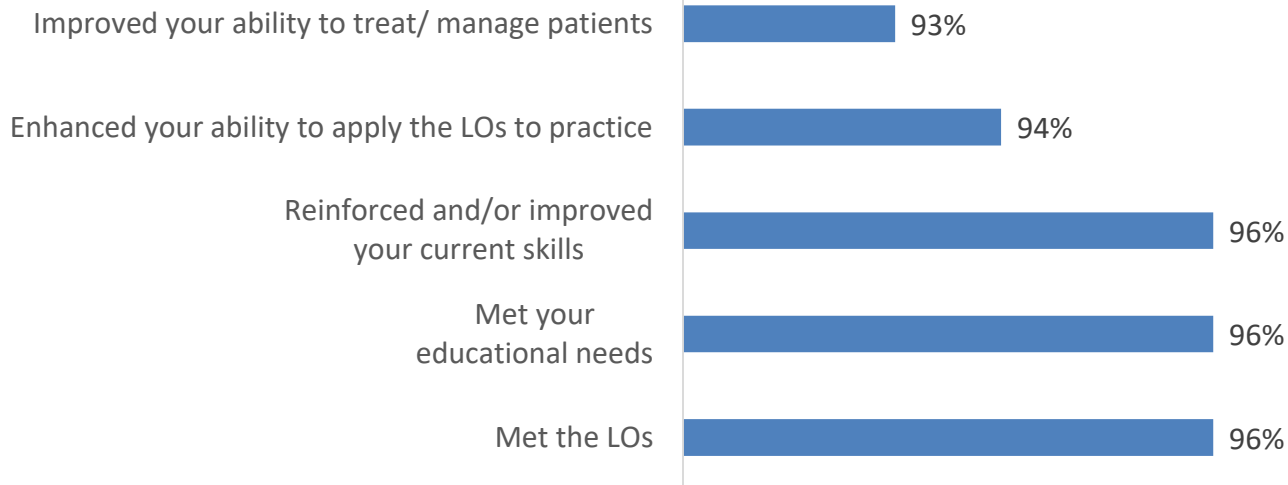
N=624



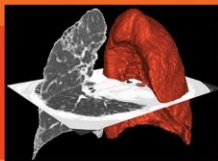
*Other specialties included:
Critical Care, Emergency Medicine, Hospitalists and Surgery



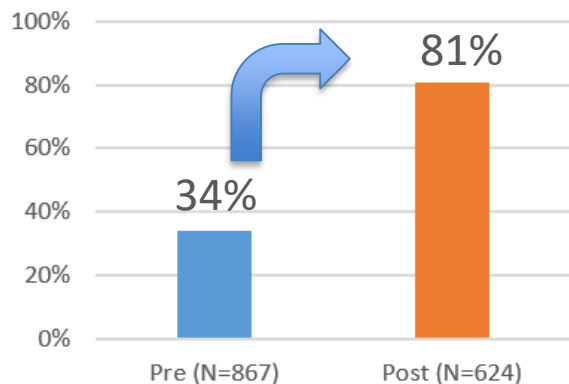
CHEST Symposium Online: Level 2 Outcomes Evaluation (Satisfaction)



N=624



CHEST Symposium: Level 3 (Knowledge) Outcomes

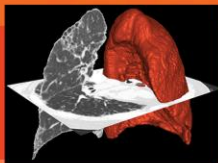


Overall relative knowledge gain
from pre- to post activities



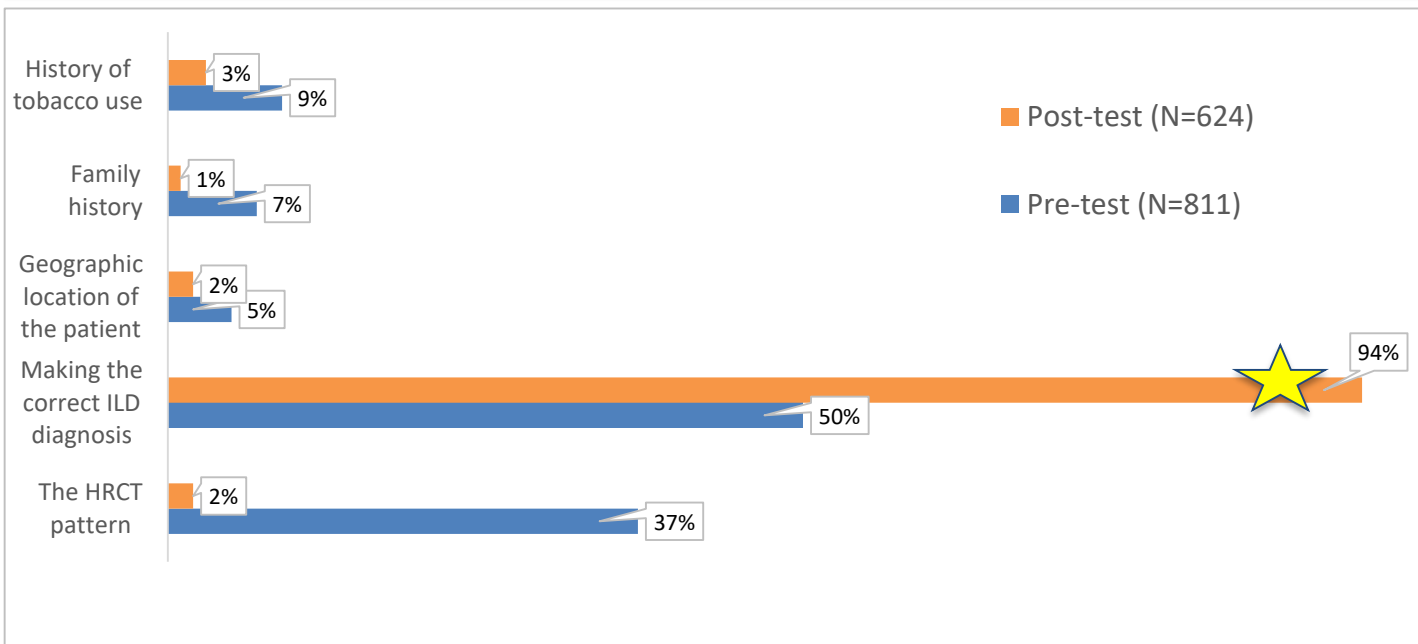
139%

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



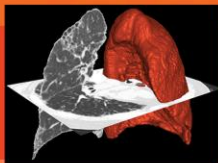
CHEST Symposium: Level 3 (Knowledge) Outcomes

Q1: What is the most important factor in determining prognosis for a patient with ILD:



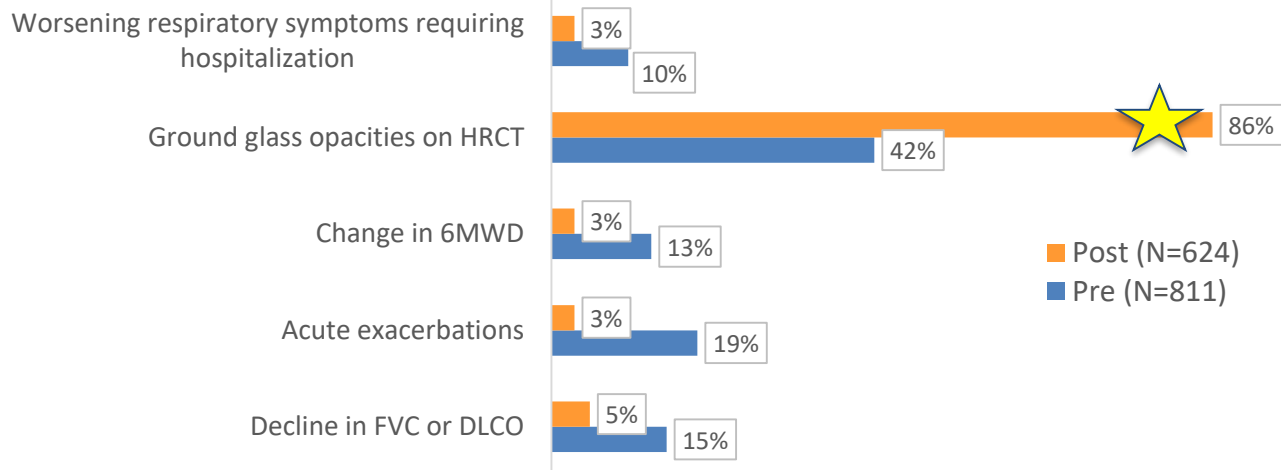
**88% Relative gain
in knowledge**

**P value < .0001
Cohens d = 1.21
Large Effect Size**



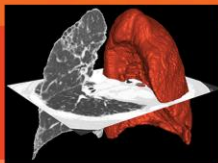
CHEST Symposium: Level 3 (Knowledge) Outcomes

Q2: Longitudinal predictors of mortality in IPF include all of the following except:



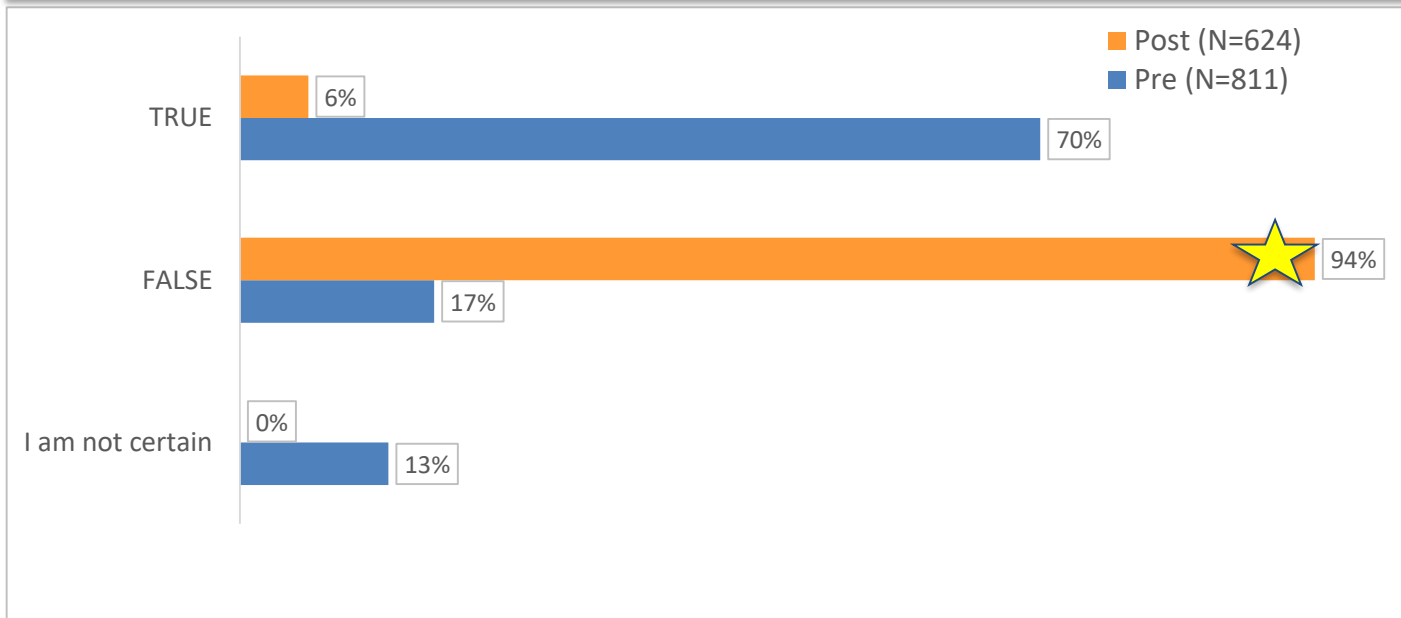
**105% Relative
Knowledge Gain**

**P value < .0001
Cohens d = 1.25
Large Effect Size**



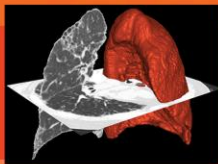
CHEST Symposium: Level 3 (Knowledge) Outcomes

Q3: The GAP model for predicting outcome in IPF looks at Gender, Age and Pulmonary Symptoms



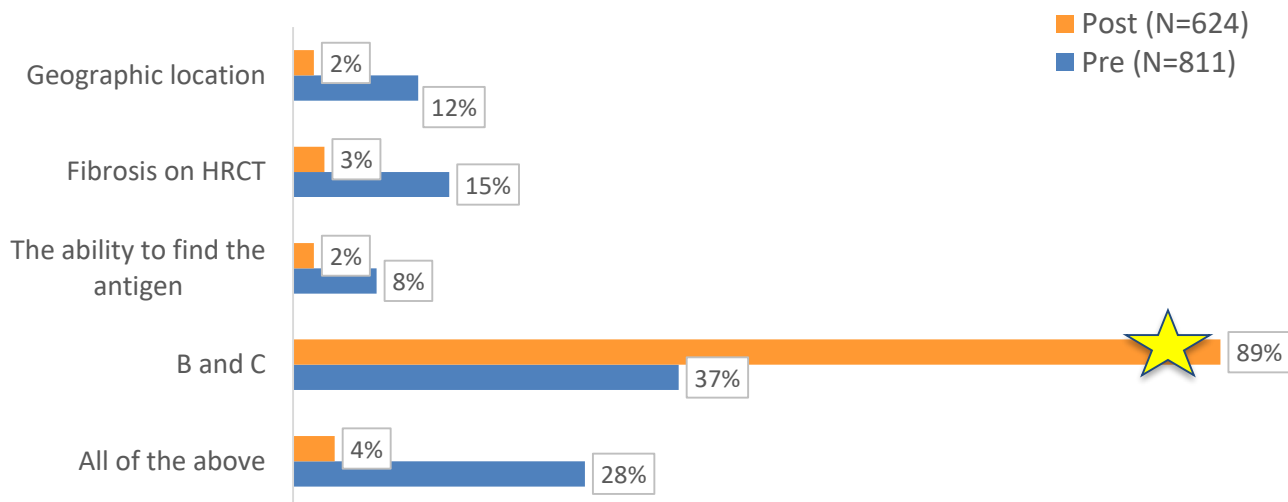
452% Relative
Knowledge Gain

P value < .0001
Cohens d = 2.41
Very Large Effect
Size



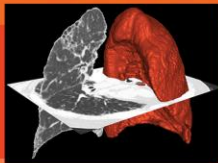
CHEST Symposium: Level 3 (Knowledge) Outcomes

Q4: Which of the following have been shown to predict outcome in Hypersensitivity Pneumonitis?



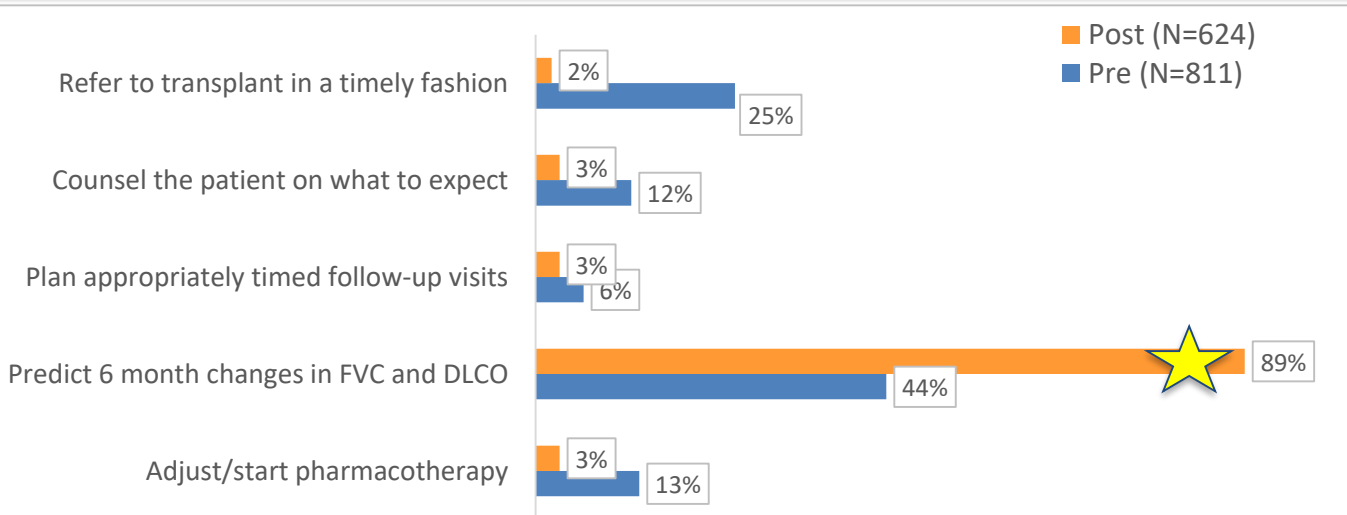
140% Relative Knowledge Gain

P value < .0001
Cohens d = 1.25
Large Effect Size



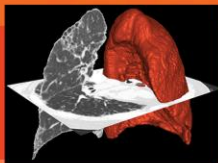
CHEST Symposium: Level 3 (Knowledge) Outcomes

Q5: The ability to predict outcome in patients allows the physician to do the following except:



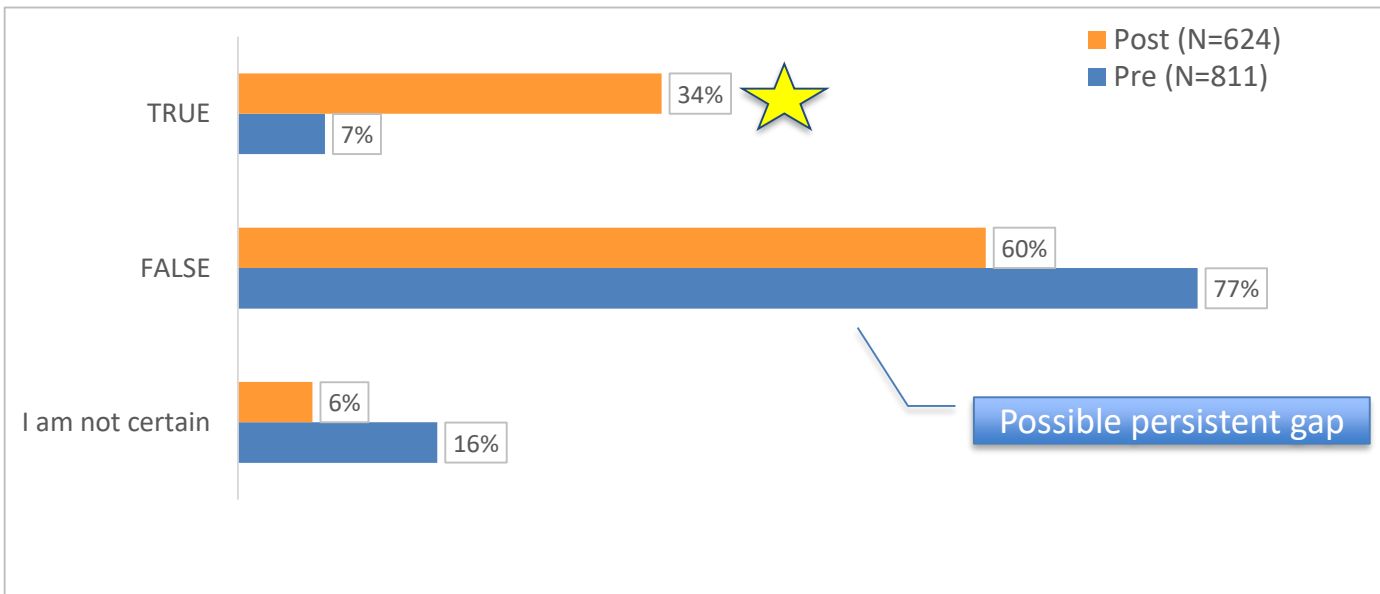
102% Relative Knowledge Gain

P value < .0001
Cohens d = 1.58
Large Effect Size



CHEST Symposium: Level 3 (Knowledge) Outcomes

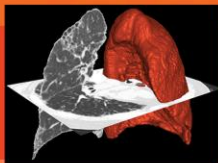
Q6: Connective Tissue Disease (CTD-ILD) in general has a better prognosis than IPF.



385% Relative Knowledge Gain

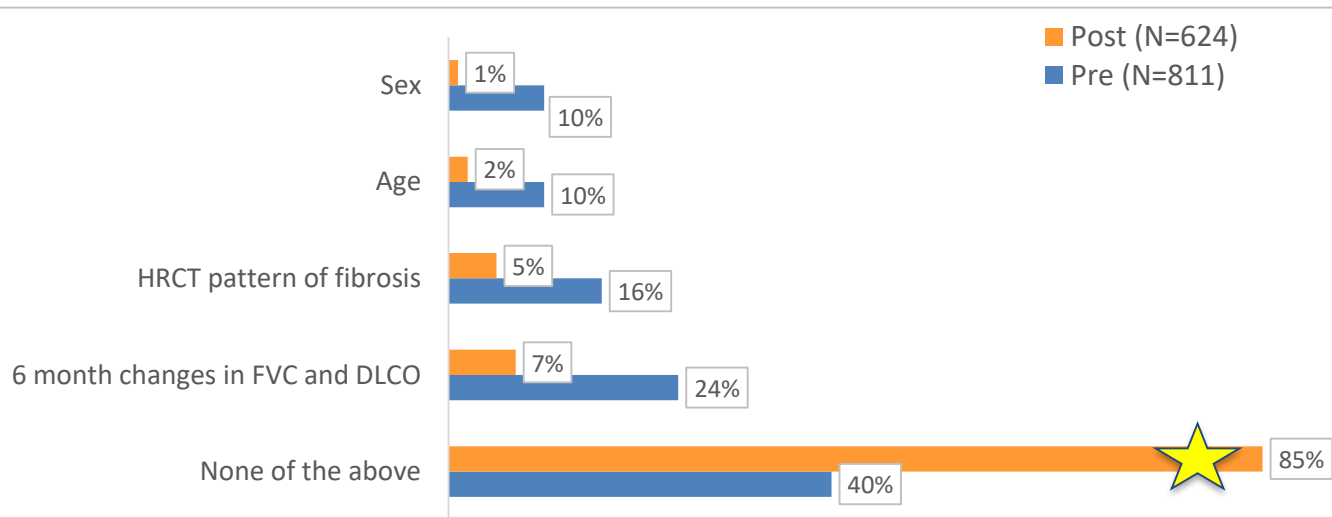
P value < .0001
Cohens d = 1.28
Large Effect Size

Possible persistent gap



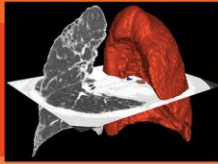
CHEST Symposium: Level 3 (Knowledge) Outcomes

Q7: When accounting for baseline physiology, which of the following predicts outcome in patients with ILD.



113% Relative Knowledge Gain

P value < .0001
Cohens d = 1.09
Large Effect Size



Online Activity

Level 4 Outcomes: Competence

89% plan to make changes to their practice as a result of what they learned (N=275)

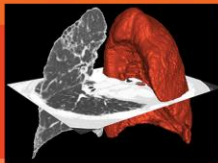
33%

30%

20%

17%

- Change screening/prevention practices
- Incorporate different diagnostic strategies into patient evaluation
- Use alternative communication methodologies with patients and families
- Modify Treatment Plans



Diagnosis and Treatment of ILD with a Progressive Lung Disease Phenotype: Clinical Implications of Emerging Data

Key Take-Aways

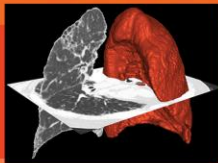
- Improved baseline knowledge of ILD
- Prediction of risk for patients with ILD
- Distinguishing prognosis for ILD
- HRCT Patterns
- Helped reinforce treatment options
- Communicating with patients
- Refer to pulmonary early

Recommendations for Future Topics

- Phenotyping ILD
- HRCT pattern recognition
- Hypersensitivity pneumonitis
- Types of IPF
- Pulmonary Hypertension
- Choosing agent to treat UIP

“We [physicians] need to be mentors guiding our patients through their Journey!”

ONLINE
ACTIVITY



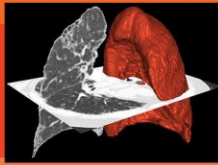
Diagnosis and Treatment of ILD with a Progressive Lung Disease Phenotype: Clinical Implications of Emerging Data

CHEST Symposium: Accreditation

National Jewish Health is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.



Accreditation Details: NJH designates this online educational activity for 1.0 AMA PRA Category 1 Credits™.



Diagnosis and Treatment of ILD with a Progressive Lung Disease Phenotype:

Clinical Implications of Emerging Data

Thank you for your support
of this educational
initiative!

