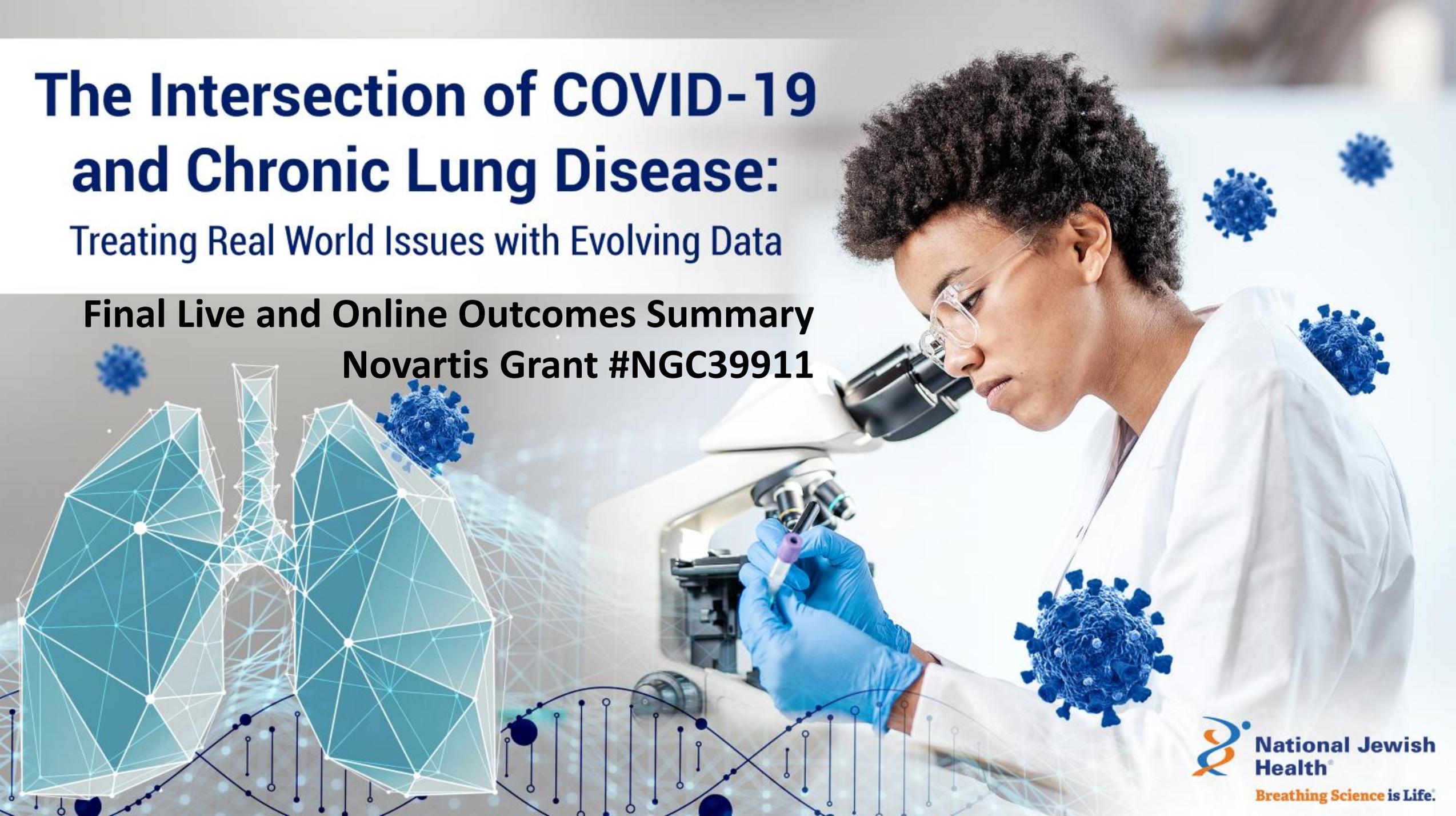


The Intersection of COVID-19 and Chronic Lung Disease:

Treating Real World Issues with Evolving Data

Final Live and Online Outcomes Summary
Novartis Grant #NGC39911



The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

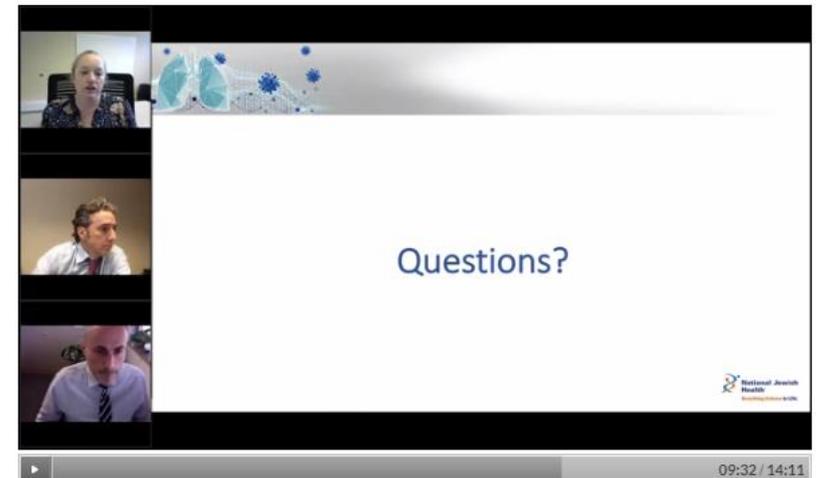
[Final Outcomes]

Program Overview

This educational initiative was composed of three activities designed to improve the awareness, knowledge, and competence of physicians in the comprehensive diagnosis, assessment, and management of patients with COVID-19 and chronic lung disease. The two live webinar presentations provided opportunities for specialists and healthcare providers to engage with and ask questions of expert faculty who are treating patients with COVID-19 in both inpatient and outpatient settings. Expert faculty described the key concepts in the pathophysiology and immunology of COVID-19, addressed the latest treatment options for patients with COVID-19, and discussed how chronic lung disease factors into treatment strategies, as well as how to manage those patients even after COVID-19. An online enduring activity recorded from the live webinars provided greater reach to clinicians treating patients affected by these conditions. This activity was updated to remain relevant as COVID-19 evolves.

Learning Objectives

- Describe clinical features and key concepts in the pathophysiology of COVID-19 and its interaction with the human immune response.
- Discuss strategies for managing patients with COVID-19 and chronic lung disease.
- Evaluate current and emerging therapies for patients with COVID-19 and chronic lung disease.



Faculty Presenters

[Final Outcomes]

Anthony N. Gerber, MD, PhD

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



Rebecca C. Keith, MD

Associate Professor
Department of Medicine
Division of Pulmonary, Critical Care & Sleep Medicine
Interstitial Lung Disease Program
Autoimmune Lung Center
National Jewish Health
Denver, CO



Joshua J. Solomon, MD

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



Natural History and Pathophysiology of COVID-19

- Background/epidemiology of SARS-CoV-2 infection
- Natural history of COVID-19 disease
- Pathophysiology/Immunology
 - Virus life cycle
 - Host-viral interactions
 - Immune response

Outpatient Management of Chronic Disease in the time of COVID

1. Everything about clinical workflow has changed
2. Healthcare workers are under a tremendous amount of stress
3. Patient visits are more challenging through a mask

STRESS

COVID-19 and Steroids - the beginning

- Results from SARS and MERS suggested harm from steroids

Variable	Steroids (n=151)	No Steroids (n=158)	P value
Ventilation	141 (93%)	121 (77%)	<0.0001
Vasopressors	134 (89%)	111 (70%)	<0.0001
ICU LOS, d	12.5	7	<0.0001

Adapted from Lee B, Hsueh SH, Wu Y, et al. Effects of early corticosteroid treatment on plasma SARS-associated coronavirus RNA concentrations in adult patients. Crit Care Med. 2005;33(10):2047-51. doi:10.1097/CCM.0b013e3180517137

Award Winning Program

[Final Outcomes]



This program was awarded the **Outstanding CME/CPD Activity Award** from the Colorado Alliance for Continuing Medical Education (CACME) during their 2021 Annual Conference.

The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

[Final Online Outcomes]

Online Enduring Program Launched 8/20/2020

<https://learning.freecme.com/a/35256PAnDMvU>

Natural History and Pathophysiology of COVID-19

- Background/epidemiology of SARS-CoV-2 infection
- Natural history of COVID-19 disease
- Pathophysiology/Immunology
 - Virus life cycle
 - Host-viral interactions
 - Immune response

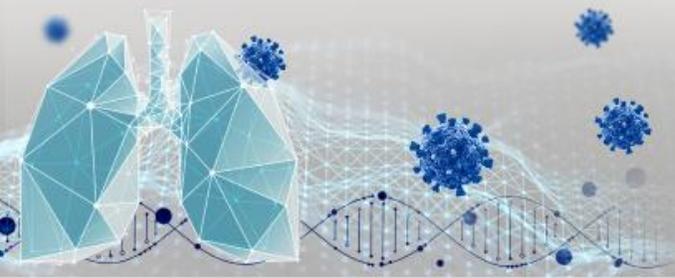
Vaccine Update

- Two vaccines have recently been authorized for emergency use (EUA) in the United States.
- These and several other vaccines have also been authorized/or are in process of being authorized in many other countries.
- The two US authorized vaccines, **BNT162b2 (Pfizer BioNTech)** and **mRNA-1273 (Moderna)** are both RNA vaccines that generate a host antibody response against the spike protein with the RBD (receptor binding domain) of SARS-CoV-2.
- Both authorized vaccines require two doses over a 3 to 4-week period.
- Protective immunity begins to develop about 12 days after the first dose of **BNT162b2 (Pfizer BioNTech)**, but longer-lived and maximal protection only develops several days after the second dose
- Similar overall efficacy data for two dose regimen for **BNT162b2 (Pfizer BioNTech)** and **mRNA-1273 (Moderna)**

Updates to the program were provided throughout the year as new data and treatment options emerged

- 1) **January 2021:** vaccine update, inpatient management update (convalescent plasma, tocilizumab, remdesivir, baricitinib), and bamlanivimab
- 2) **July 2021:** post-COVID fibrosis, COVID-19 and variants, and monoclonal antibody therapies for COVID-19

“I appreciated that they updated the presentation when new information became available.” – Online enduring program learner

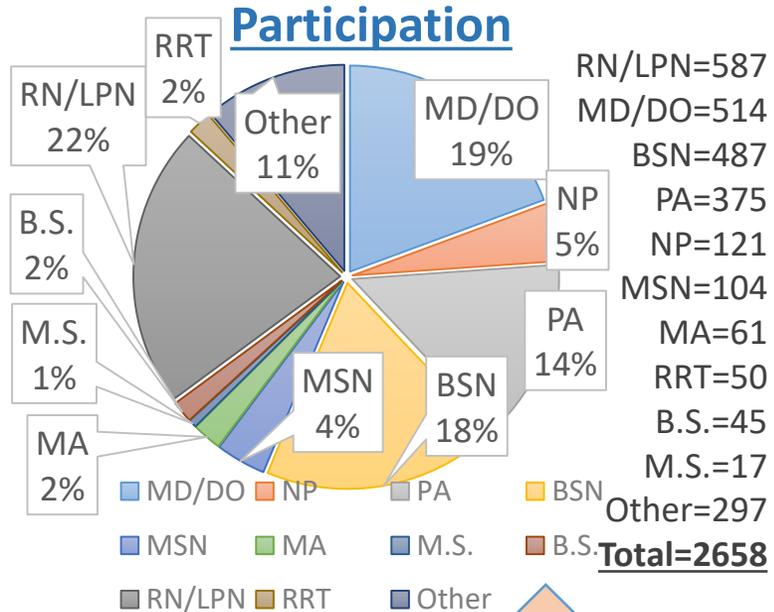


The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

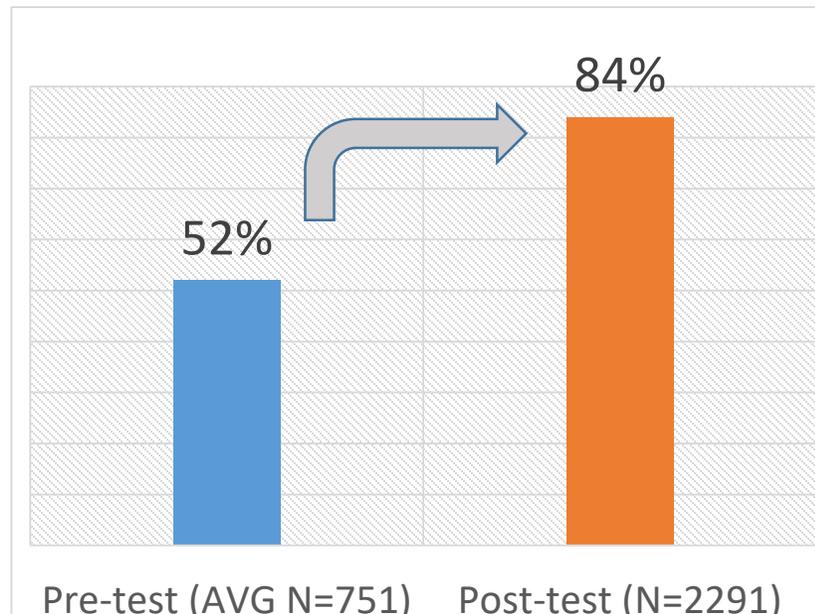
[Final Online Outcomes]

Quantitative Educational Impact Summary: Final Online Enduring Program

Participation



Overall Knowledge Gain



Top 3 Intended Practice Changes

- 88%** of evaluation respondents (N=2168) reported they intend to make changes to their practice
- ✓ Apply knowledge to practice and keep up-to-date with changing information
 - ✓ Treatment and management of COVID-19
 - ✓ Assessment of signs and symptoms

2,168

Completers

Potential Impact to **702,416** patient visits this year

Exceeded enduring program guarantees by nearly 1,500 learners!

62% Relative Knowledge Gain

32% Absolute Knowledge Gain

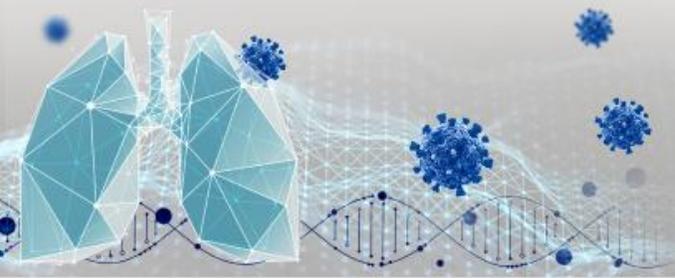
65%

N=2168

Evaluation respondents indicated the activity addressed strategies for overcoming barriers to optimal patient care

“The educational design of this activity was useful, effective and provided opportunities for interactivity.”

- Online enduring program learner



The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

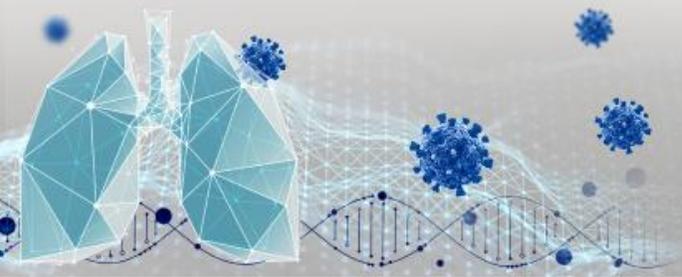
[Final Online Outcomes]

Qualitative Educational Impact Summary: Final Online Enduring Program

Participants
2,658 Total Learners
Who see 13,508 COVID Patients Weekly
Which translates to 702,416 Potential patient Visits Annually

Educational Impact
35% relative knowledge gain seen from learners regarding describing clinical features and key concepts in the pathophysiology of COVID-19 and its interaction with the human immune response. [N=2291]
142% relative knowledge gain seen from learners in regards to evaluating current and emerging therapies for patients with COVID-19 and chronic lung disease [N=2291]
180% relative knowledge gain seen from learners in discussing strategies for managing patients with COVID-19 and chronic lung disease [N=2291]

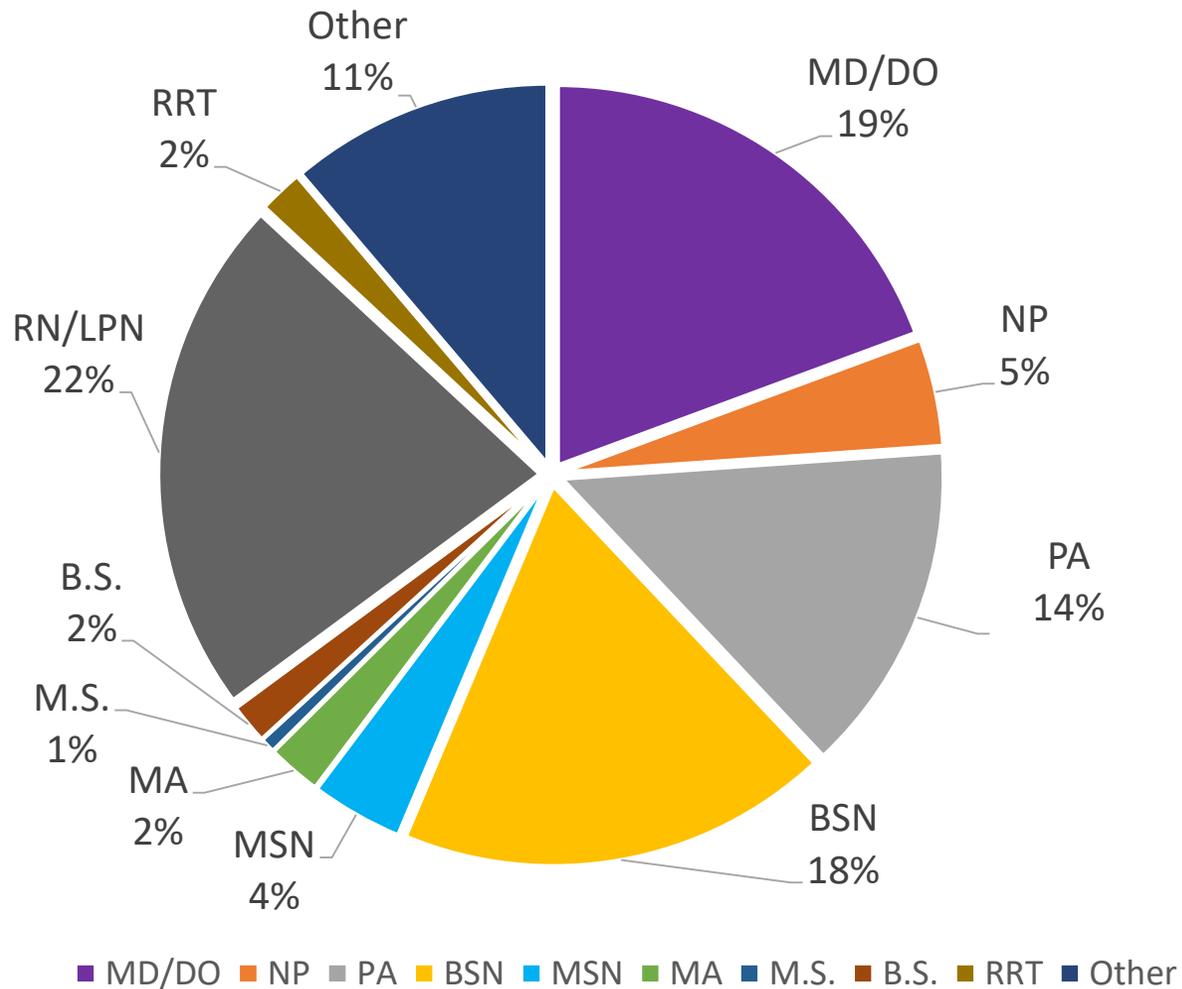
Intended Practice Change
88% of evaluation respondents reported they intended to make changes to their practice as a result of the educational activity [N=2168]
65% of evaluation respondents indicated the activity addressed strategies for overcoming barriers to optimal patient care [N=2168]
<i>“I think the activity was outstanding. There was so much to take away from the knowledge presented” – Online enduring program learner</i>



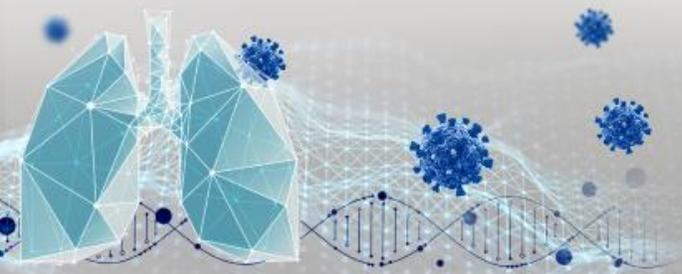
The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

[Final Online Outcomes]

Level 1 Outcomes: Final Online Enduring Program: Participation by Degree



Degree	Total
RN/LPN	587
MD/DO	514
BSN	487
PA	375
NP	121
MSN	104
MA	61
RRT	50
B.S.	45
M.S.	17
Other	297
Total	2,658

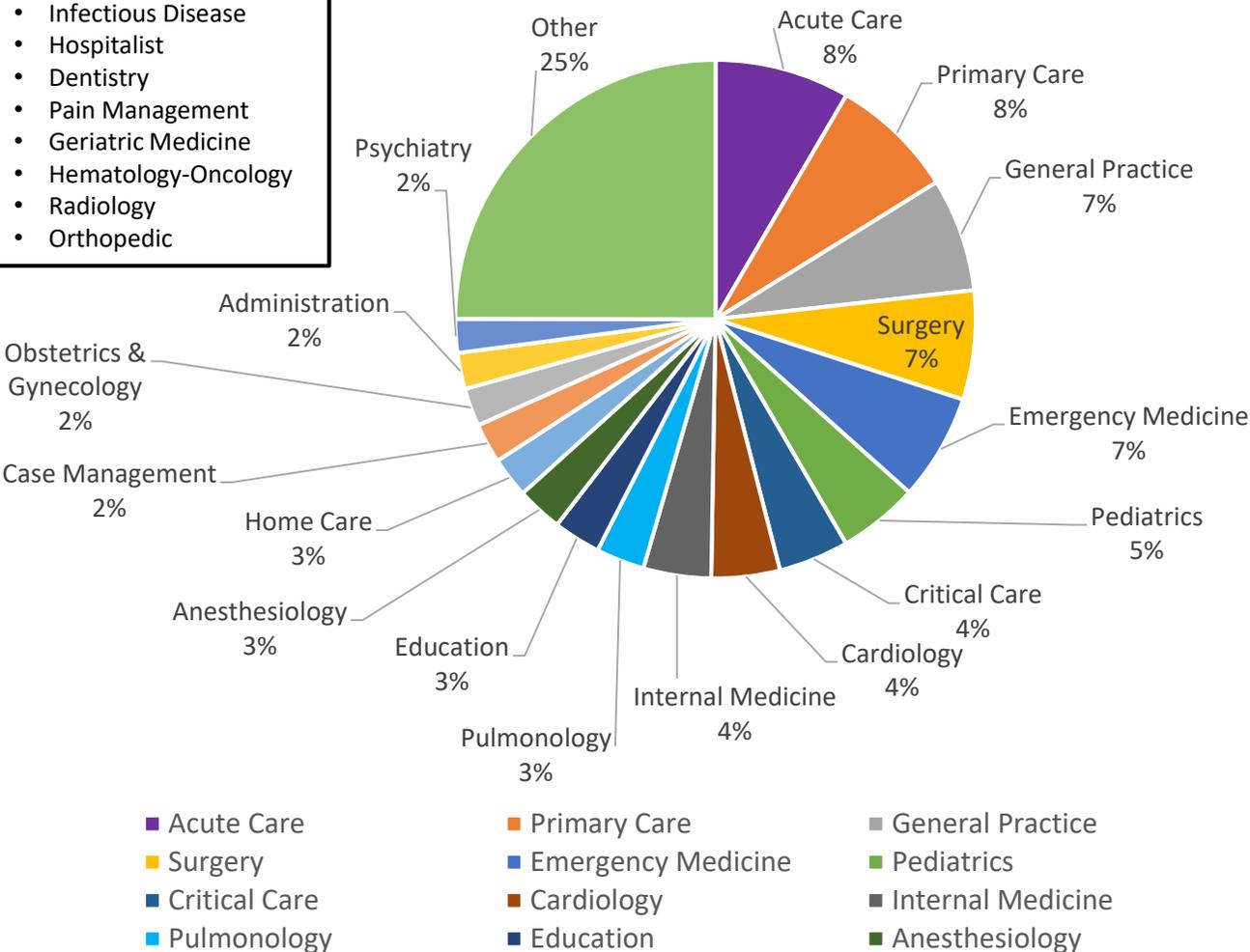


The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

[Final Online Outcomes]

Level 1 Outcomes: Final Online Enduring Program: Participation by Specialty

- Other Includes:**
- Infectious Disease
 - Hospitalist
 - Dentistry
 - Pain Management
 - Geriatric Medicine
 - Hematology-Oncology
 - Radiology
 - Orthopedic



Specialty	Total
Acute Care	223
Primary Care	206
General Practice	188
Surgery	181
Emergency Medicine	176
Pediatrics	133
Critical Care Medicine	116
Cardiology	113
Internal Medicine	112
Pulmonology	80
Education	78
Anesthesiology	76
Home Care	67
Case Management	66
Obstetrics & Gynecology	63
Administration	60
Psychiatry	56
Other	664
Total	2,658



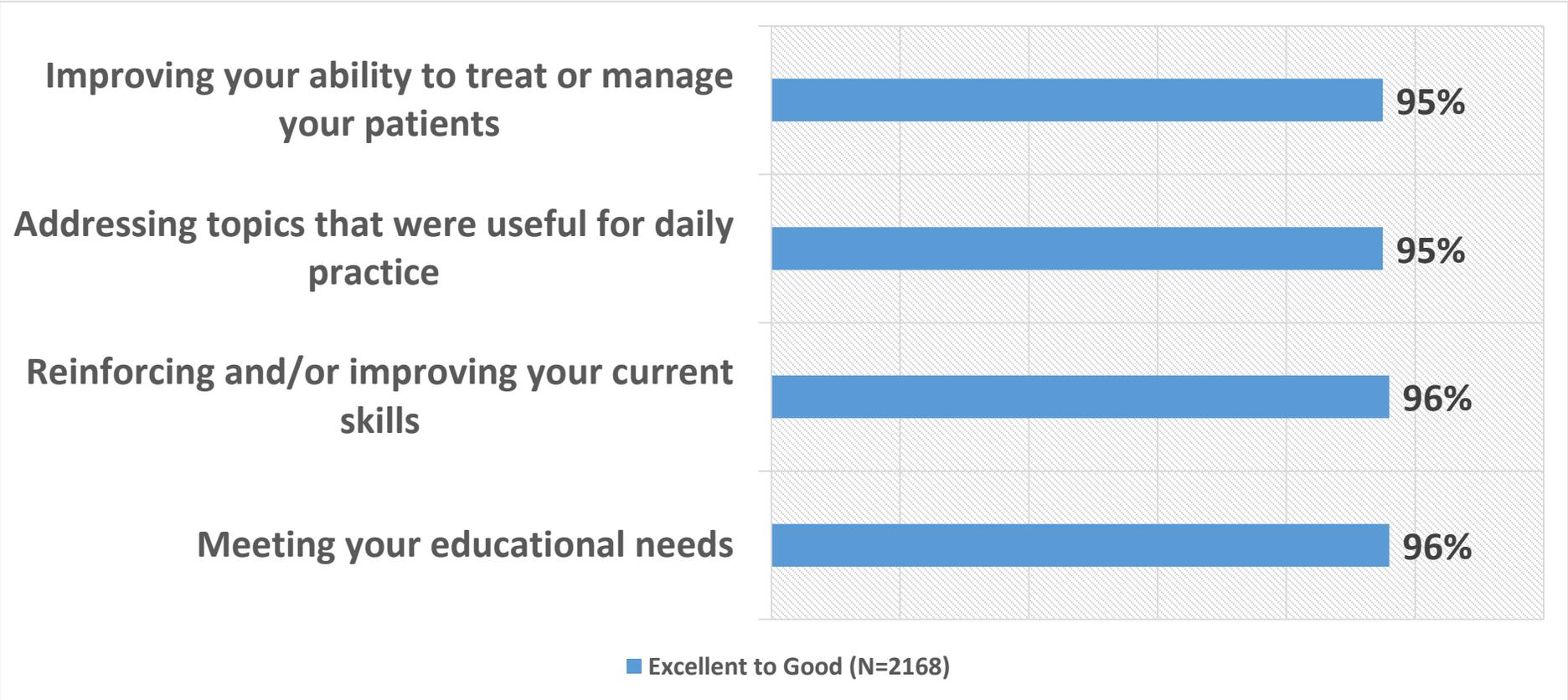
The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

[Final Online Outcomes]

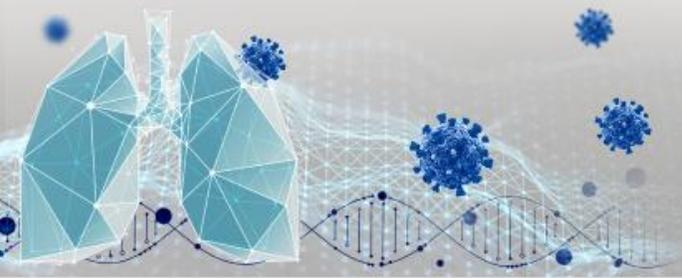
Level 2&3 Outcomes: Learning & Satisfaction – Final Online Enduring Program

Analysis of participant responses related to educational needs

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



Learners reported high levels of satisfaction related to the ability of the activity to impact practical applications

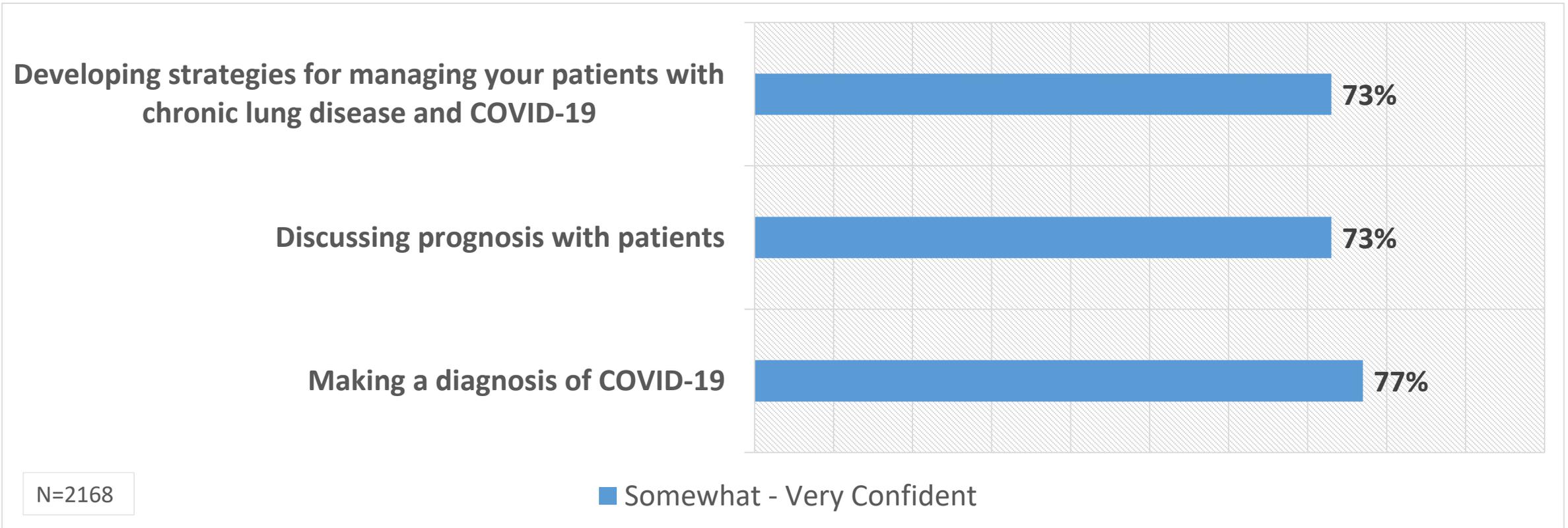


The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

[Final Online Outcomes]

Level 2&3 Outcomes: Learning & Satisfaction – Final Online Enduring Program

Analysis of learner responses related to confidence *after the activity* from “somewhat to very confident”



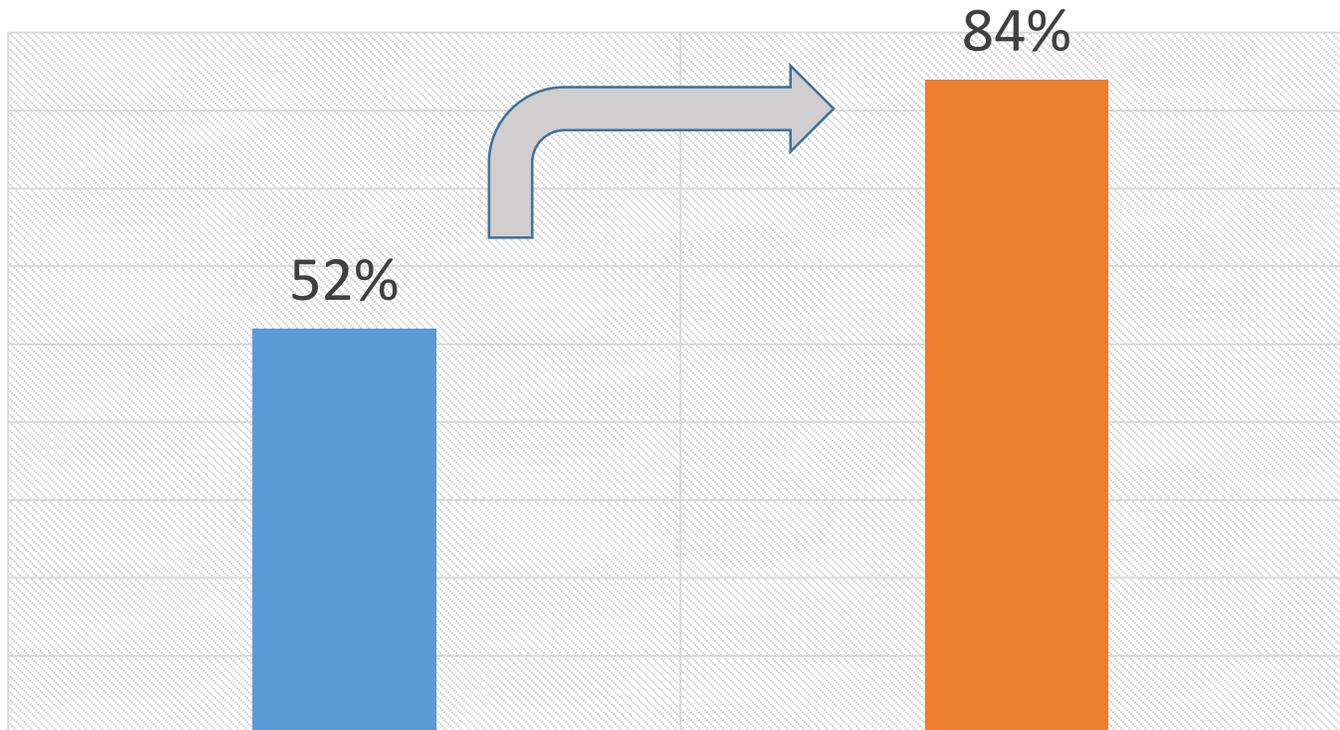


The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

[Final Online Outcomes]

Level 3 Outcomes (Knowledge): Final Online Enduring Program: Overall Knowledge Gain

Overall Knowledge Gain



Pre-test (AVG N=751)

Post-test (N=2291)

62% Relative Knowledge Gain



32% Absolute Knowledge Gain



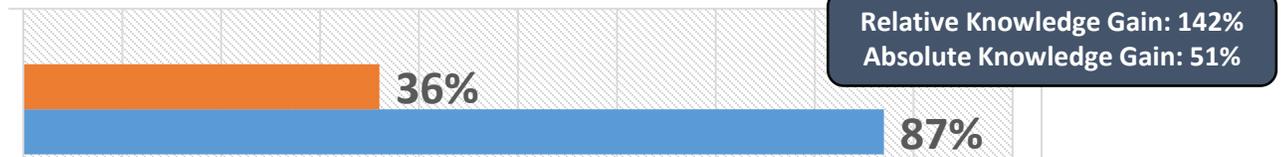
The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

[Final Online Outcomes]

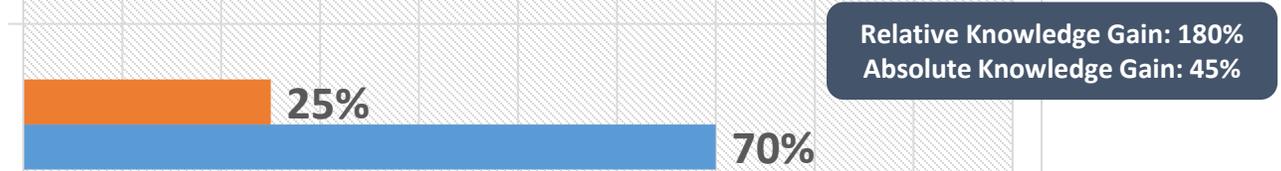
Level 3 Outcomes (Knowledge) – Final Online Enduring Program: By Learning Objective

Knowledge Gain by Learning Objectives

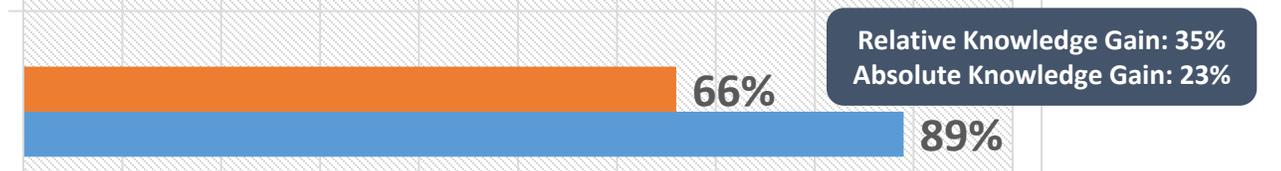
Evaluate current and emerging therapies for patients with COVID-19 and chronic lung disease



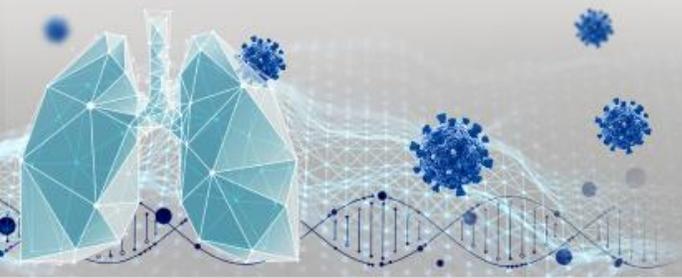
Discuss strategies for managing patients with COVID-19 and chronic lung disease



Describe clinical features and key concepts in the pathophysiology of COVID-19 and its interaction with the human immune response



Pre-test (AVG N=751) Post-test (N=2291)



The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

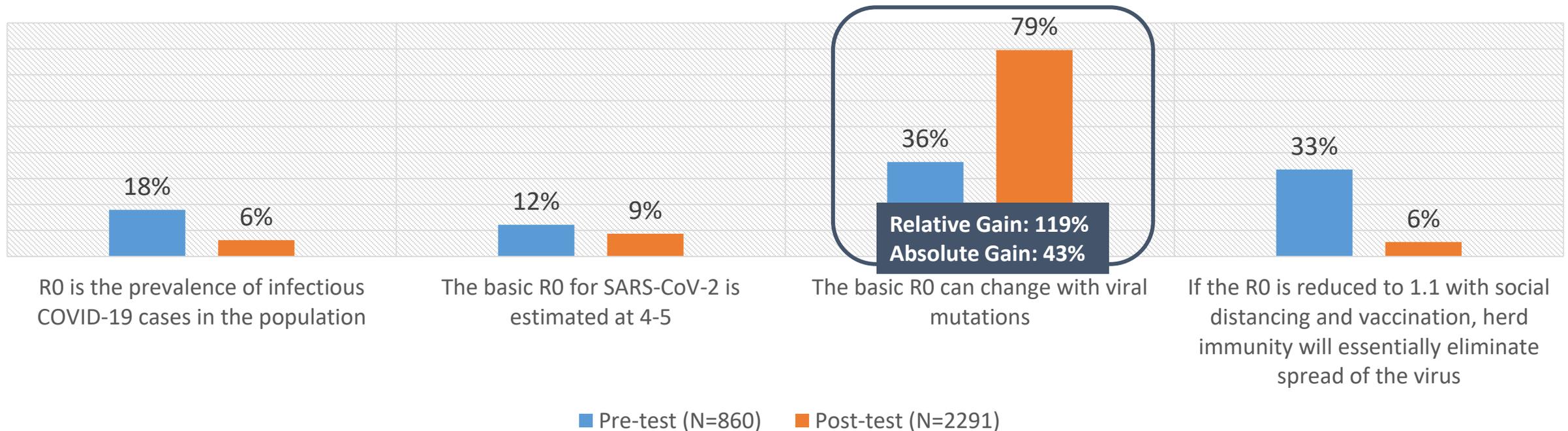
[Final Online Outcomes]

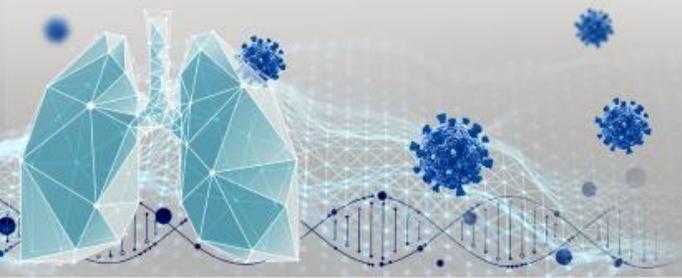
Level 3 Outcomes (Knowledge): Final Online Enduring Program: Question 1

Learning Objective: *Describe clinical features and key concepts in the pathophysiology of COVID-19 and its interaction with the human immune response*

Question 1: Which of the following is true with respect to disease transmission of COVID-19?

Question 1: Pre-/Post-test





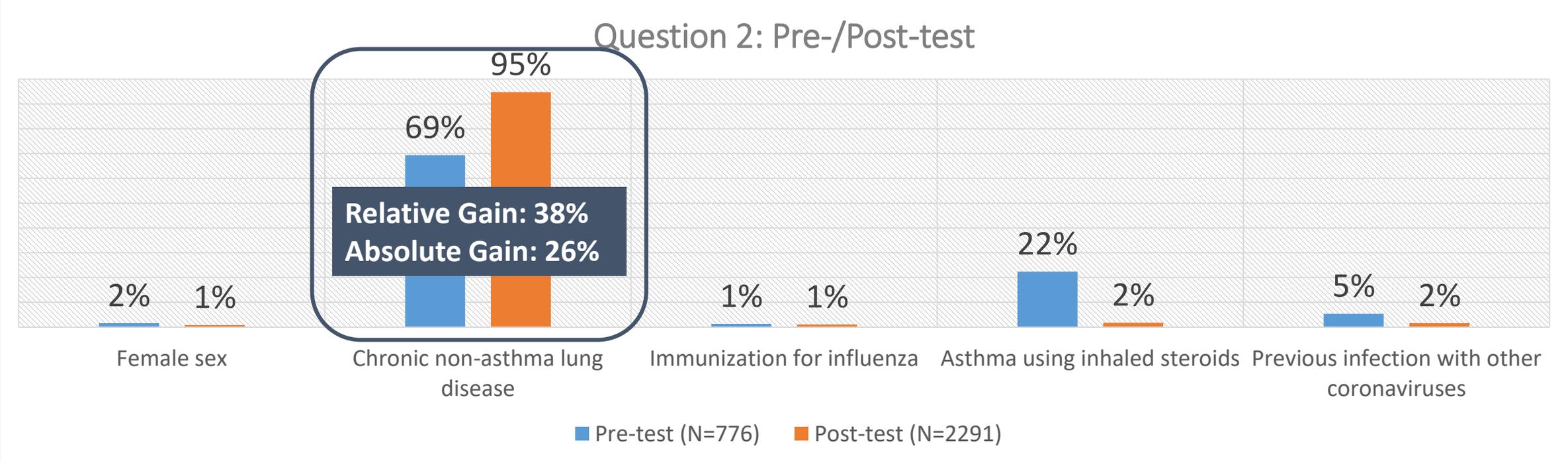
The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

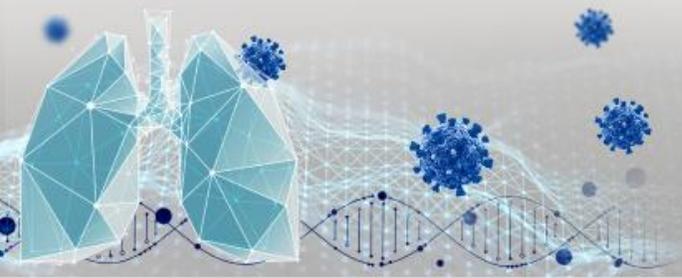
[Final Online Outcomes]

Level 3 Outcomes (Knowledge): Final Online Enduring Program: Question 2

Learning Objective: Describe clinical features and key concepts in the pathophysiology of COVID-19 and its interaction with the human immune response

Question 2: Other than older age, which of the following is a known risk factor with a hazard ratio of 1.5 or greater for developing severe COVID-19 disease?





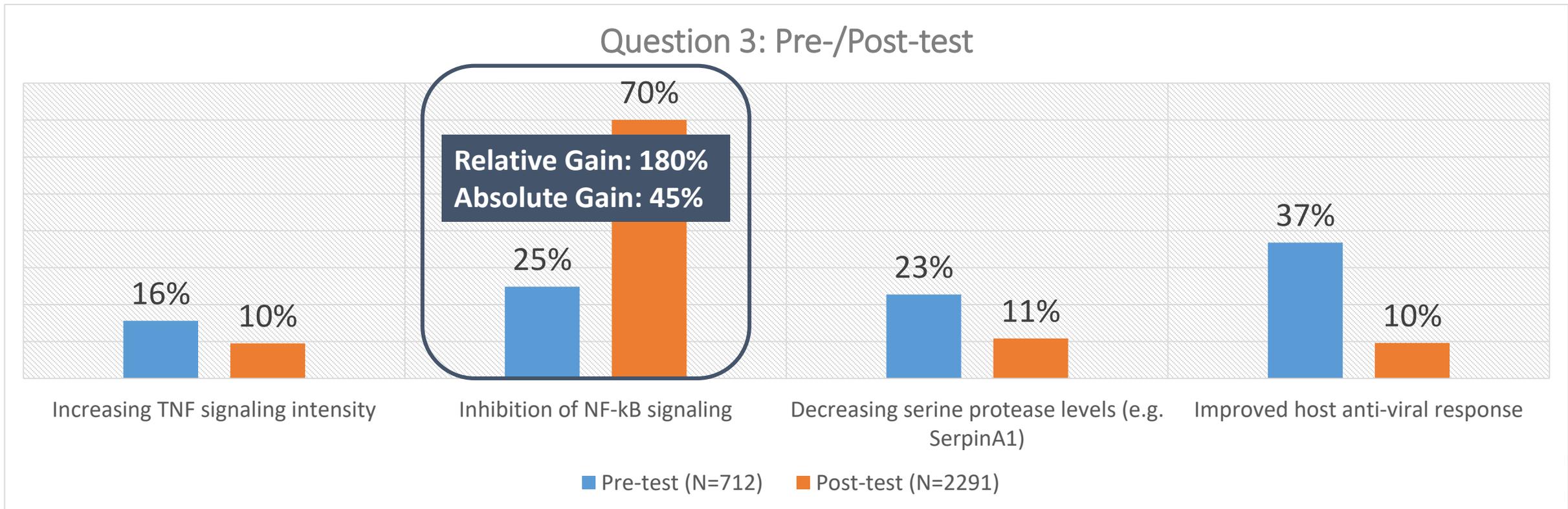
The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

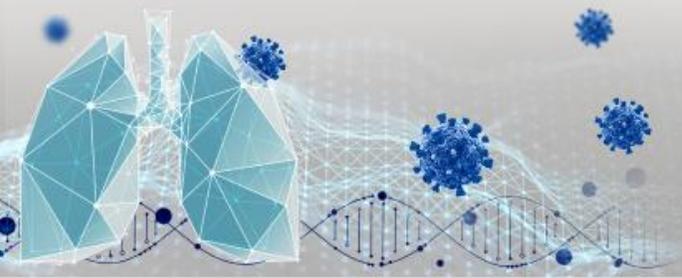
[Final Online Outcomes]

Level 3 Outcomes (Knowledge): Final Online Enduring Program: Question 3

Learning Objective: *Discuss strategies for managing patients with COVID-19 and chronic lung disease*

Question 3: Which of the following is likely to mediate efficacy of dexamethasone in COVID-19?





The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

[Final Online Outcomes]

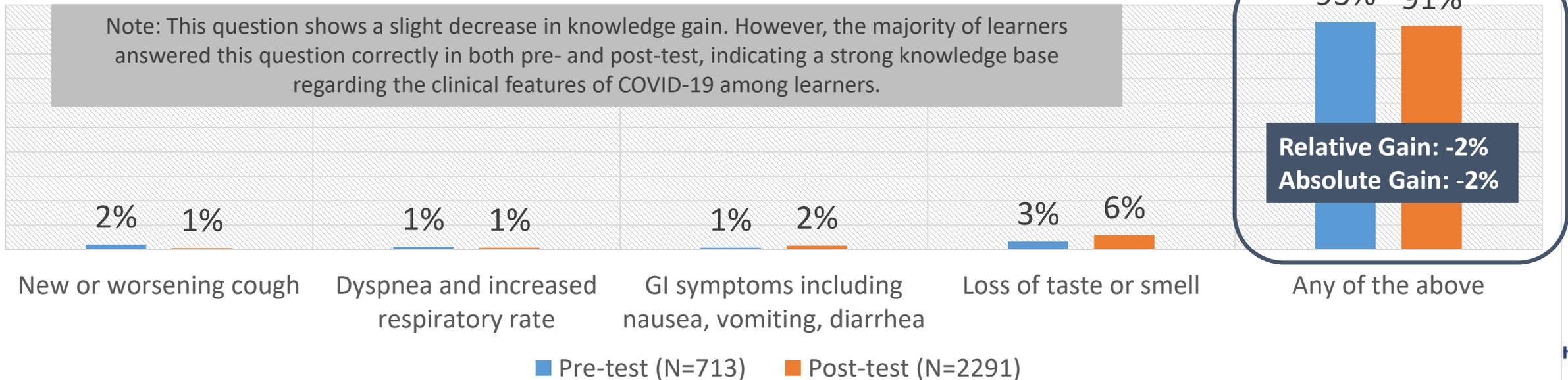
Level 3 Outcomes (Knowledge): Final Online Enduring Program: Question 4

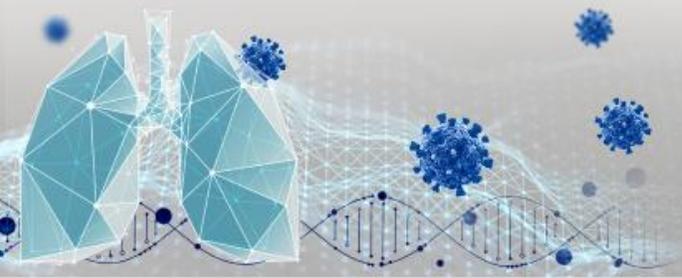
Learning Objective: *Describe clinical features and key concepts in the pathophysiology of COVID-19 and its interaction with the human immune response*

Question 4: What reported symptoms would make you suspect your patient had COVID?

Question 4: Pre-/Post-test

Note: This question shows a slight decrease in knowledge gain. However, the majority of learners answered this question correctly in both pre- and post-test, indicating a strong knowledge base regarding the clinical features of COVID-19 among learners.





The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

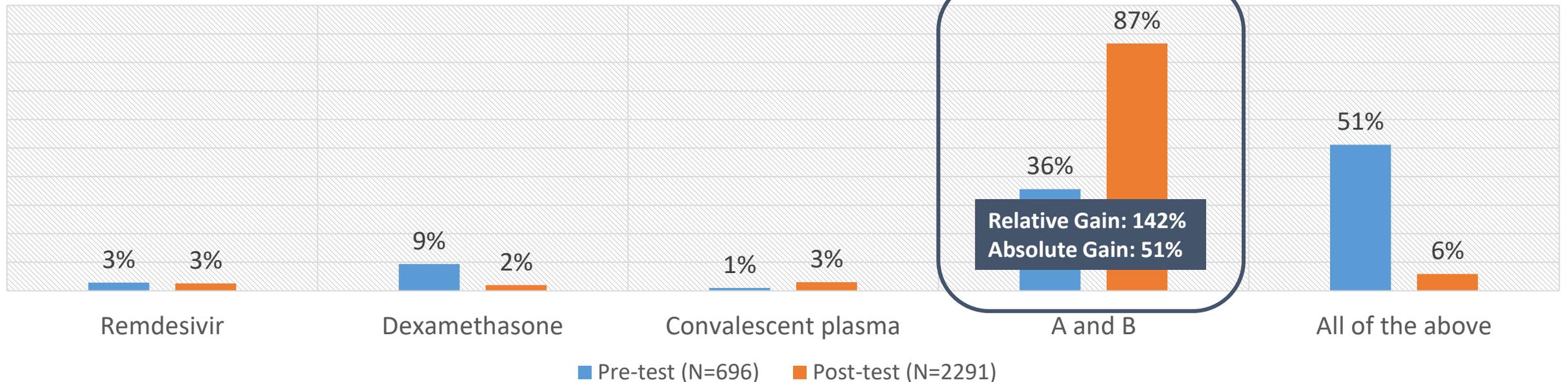
[Final Online Outcomes]

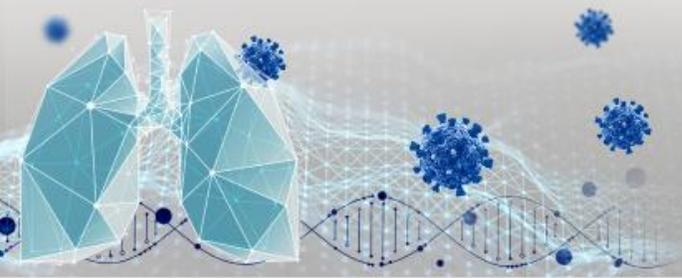
Level 3 Outcomes (Knowledge): Final Online Enduring Program: Question 5

Learning Objective: *Evaluate current and emerging therapies for patients with COVID-19 and chronic lung disease*

Question 5: Which of the following are currently recommended for use for inpatients with COVID-19 by the National Institutes of Health (NIH)?

Question 5: Pre-/Post-test





The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

[Final Online Outcomes]

Level 4 Outcomes (Competence): Final Online Enduring Program

An analysis of open-ended comments demonstrates the following changes learners intend to make:

88%

N=2168

Respondents intend to make changes to practice as a result of the activity

25%

Apply new knowledge of COVID-19 in practice and seek opportunities for continued learning

24%

Treatment and management of COVID-19

15%

Assessment of signs and symptoms of COVID-19

12%

Appropriate PPE and safety protocols

11%

Patient education on COVID-19 treatment and prevention

6%

Proper medication use based on current evidence

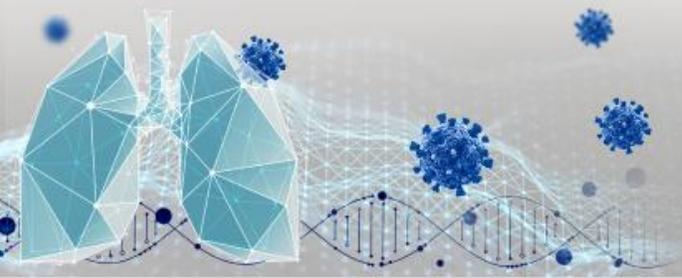
4%

Utilization of screening and testing

3%

Follow-up of post-COVID patients

N=1257



The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

[Final Online Outcomes]

Program Evaluation: Final Online Enduring Program

N=1476

98%

- Material presented in an objective manner and free of commercial bias

99%

- Content presented was evidence-based and clinically relevant

N=2168

Most important take-away:

Overall increase in knowledge & need to keep up-to-date with evolving data of COVID-19
(494 responses)

Treatment and management approaches for COVID-19
(411 responses)

Appropriate safety and prevention protocols, including vaccines
(156 responses)

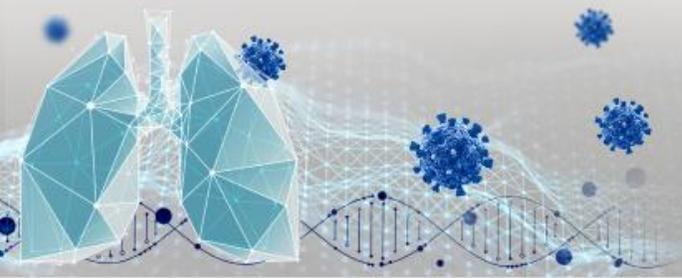
Keep underlying conditions in mind when evaluating
(125 responses)

Recognition of signs and symptoms of COVID-19
(114 responses)

Importance of testing and screening
(25 responses)

Use of medications based on evidence-based practices
(96 responses)

Educating the patient about the disease and prevention
(55 responses)



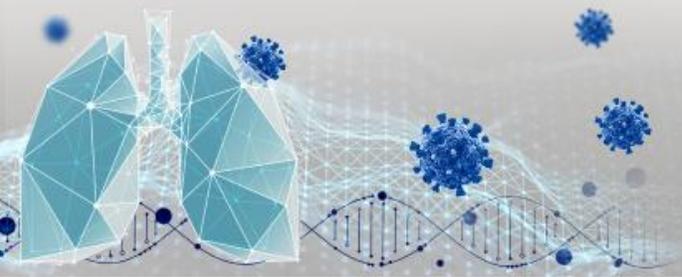
The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

[Final Online Outcomes]

Program Evaluation: Final Online Enduring Outcomes

What do you think is biggest challenge related to COVID-19?

Availability of testing	Patient compliance
Lack of PPE	Communication barrier with patients
Lack of resources	Result time of testing
Screening patients	Staffing
Asymptomatic patients	Lack of knowledge of disease
Rumors vs. facts when talking with patients	Treatment of immunosuppressed
Continually changing standards of care	Volume of patients
Cost and insurance coverage	Differentiating between COVID-19 and other conditions



The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

[Final Online Outcomes]

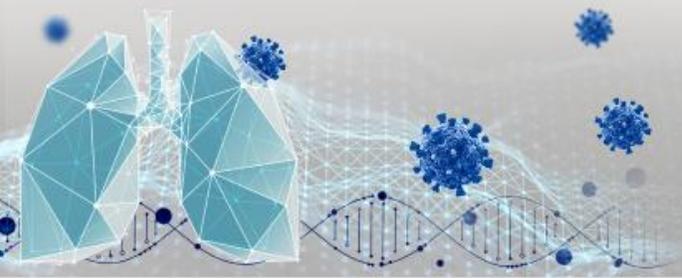
Program Evaluation: Final Online Enduring Program Strategies for Overcoming Barriers

- Implementation of telemedicine
- Help patients better understand COVID-19
- Safer strategies to conduct outpatient visits
- Use of drive-up clinics and phone triage
- Treatment and management strategies
- How to treat patients with chronic lung disease safely while taking care of COVID-19 patients
- Increase of knowledge about virus to educate staff

65%

N=2168

Evaluation respondents indicated the activity addressed strategies for overcoming barriers to optimal patient care



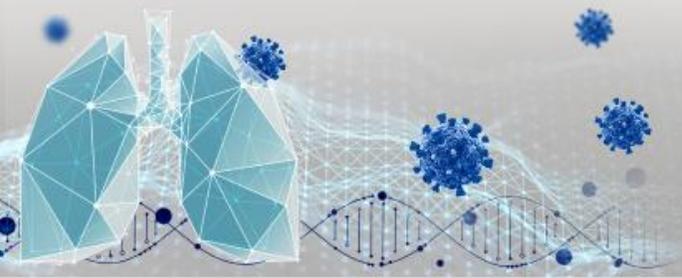
The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

[Final Online Outcomes]

Program Evaluation: Final Online Interim Outcomes

What topics would you like more information about in future educational activities?	
Continued updates on COVID-19 management	Inpatient critical care management
Lung ultrasound	Recurrence of COVID-19 infection
COVID-19 vaccine	Asthma
COPD	Proper time to test for COVID-19
Prevention of COVID infection	Emergency procedures
Long-term effects of COVID-19	Chronic lung disease
Geriatric population and COVID-19	Patient cases
COVID-19 variants	Current COVID-19 research

**An update on new evidence-based treatment options and the vaccines were added to the online enduring program.*



The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

[Final Live Outcomes]

Live Webinar Series Interim Outcomes Summary

Outpatient Management of Chronic Disease in the time of COVID

1. Everything about clinical workflow has changed
2. Healthcare workers are under a tremendous amount of stress
3. Patient visits are more challenging through a mask

STRESS

National Jewish Health

COVID-19 and Steroids - the beginning

• Results from SARS and MERS suggested harm from steroids

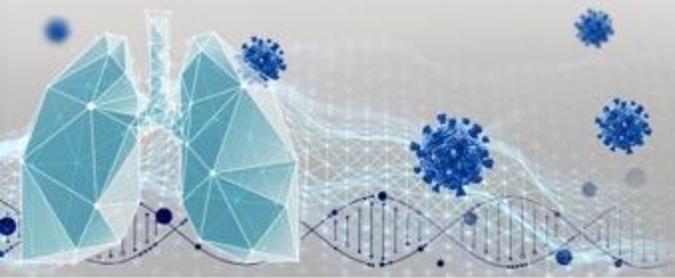
SARS

MERS

Variable	Steroids (n=151)	No Steroids (n=158)	P value
Ventilation	141 (93%)	121 (77%)	<0.0001
Visitors	134 (89%)	111 (70%)	<0.0001
ICU LOS, d	12.5	7	<0.0001

National Jewish Health

freeCME Live Webinar (1): July 21, 2020
freeCME Live Webinar (2): July 24, 2020



The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

[Final Live Outcomes]

Anthony N. Gerber, MD, PhD

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

Rebecca C. Keith, MD

Associate Professor
Department of Medicine
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Interstitial Lung Disease Program
Autoimmune Lung Center
National Jewish Health
Denver, CO

Joshua J. Solomon, MD

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



Live Webinar Series

Webinar (1) – targeted nationally
(7/21/2020): **346 Learners**

Webinar (2) – targeted nationally
(7/24/2020): **305 Learners**

Total Live Webinar Learners: 651

“The enthusiasm and commitment shown by these clinicians was truly inspiring. It was the most positive I have felt about the pandemic. Bravo! We will make it to the other side of this pandemic.”

- Live virtual session attendee

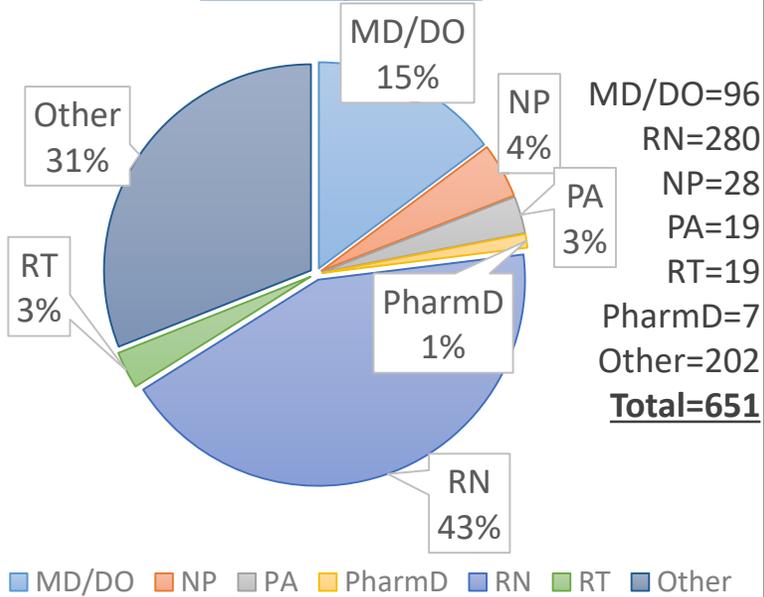


The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

[Final Live Outcomes]

Quantitative Educational Impact Summary: Live Virtual Grand Round Sessions

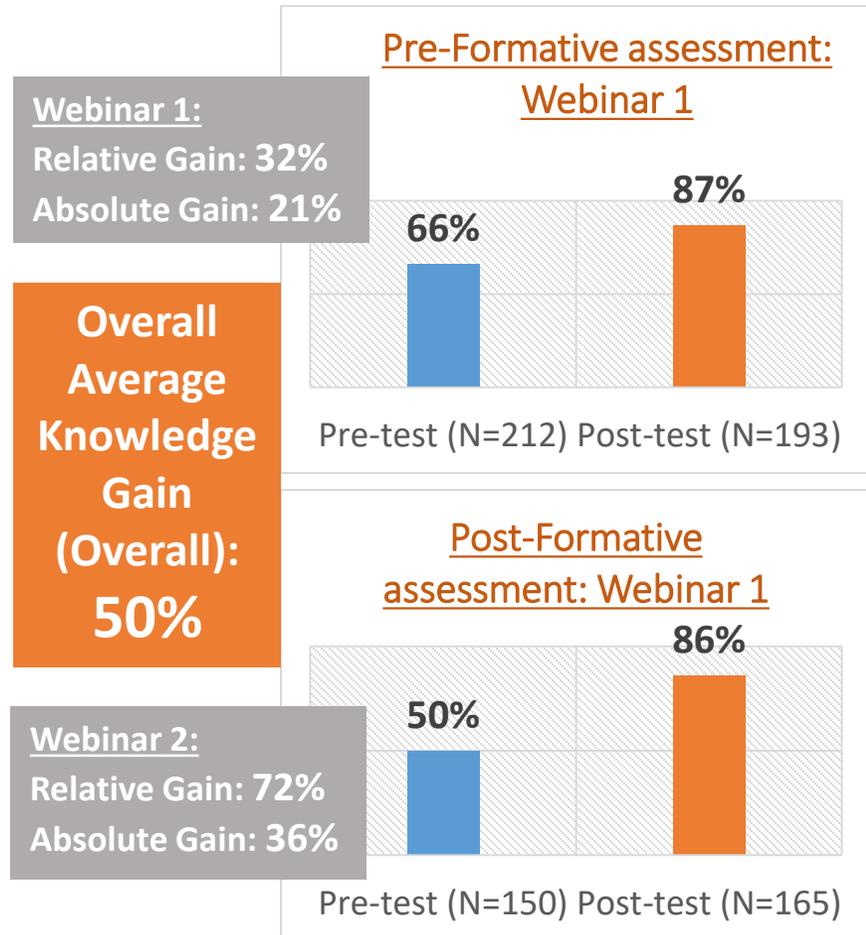
Participation



651
learners
501
completers

Potential Impact to **68,224** patient visits this year

Overall Knowledge Gain



Top 3 Intended Practice Changes

- 74%** reported they intend to make changes to their practice
- ✓ Educate colleagues on information learned from webinar
 - ✓ Implement appropriate PPE and safety protocols
 - ✓ Proper medication use based on current evidence

70%
N=351
Learners indicated the activity addressed strategies for overcoming barriers to optimal patient care

"Very interesting and relevant presentation. I learned a lot and really appreciate the doctors experiences with in their practice both inpatient and outpatient perspective."
- Live virtual session attendee



The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

[Final Live Outcomes]

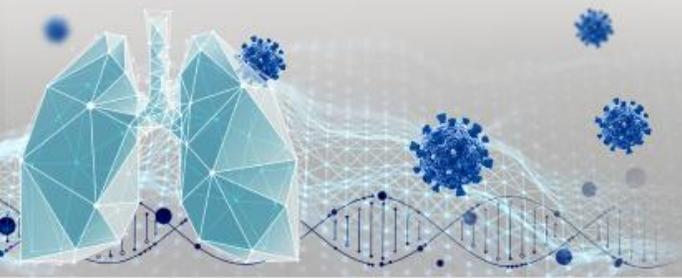
Qualitative Educational Impact Summary: Live Virtual Grand Rounds Sessions

Participants
651 Total Learners
Who see 1,312 COVID Patients Weekly
Which translates to 68,224 Potential patient Visits Annually

Educational Impact
28% relative knowledge gain seen from learners regarding describing clinical features and key concepts in the pathophysiology of COVID-19 and its interaction with the human immune response. [N=165]
296% relative knowledge gain seen from learners in regards to evaluating current and emerging therapies for patients with COVID-19 and chronic lung disease [N=165]
311% relative knowledge gain seen from learners in discussing strategies for managing patients with COVID-19 and chronic lung disease [N=165]

Practice Change
74% of evaluation respondents reported they intended to make changes to their practice as a result of the educational activity [N=351]
70% of evaluation respondents indicated the activity addressed strategies for overcoming barriers to optimal patient care [N=351]

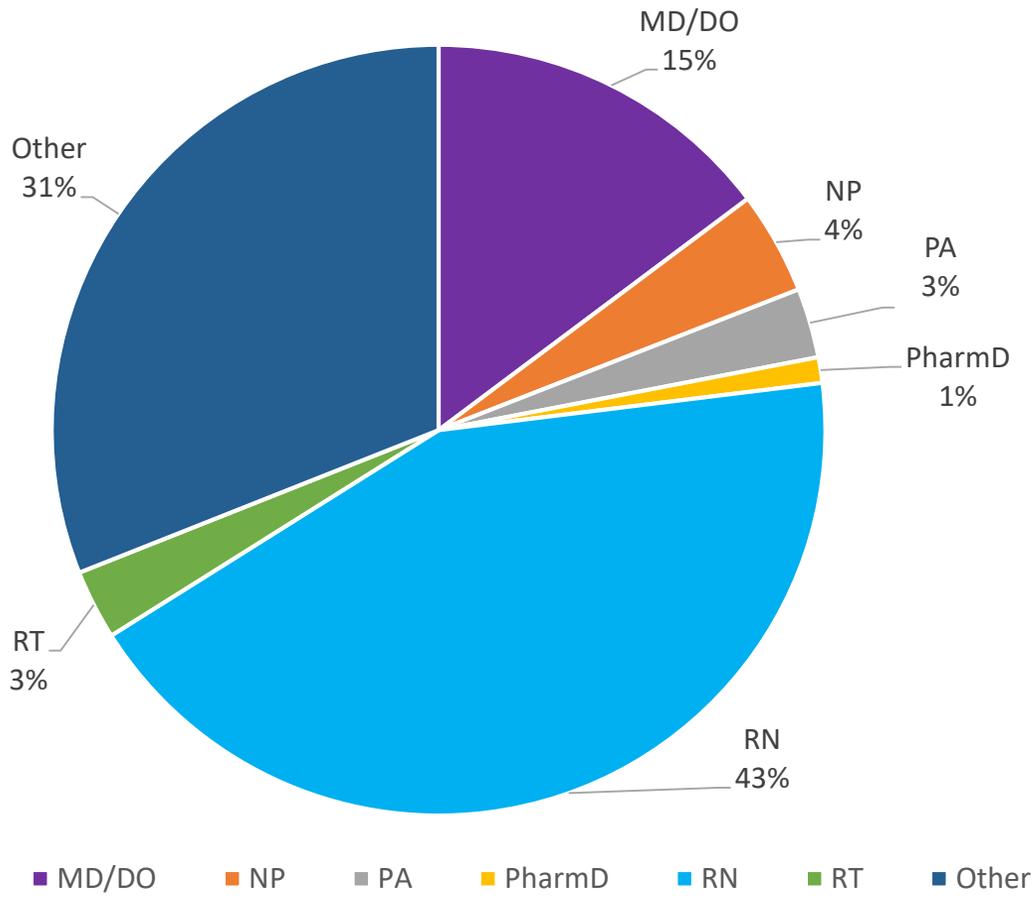
"I felt the presenters had a high degree of expertise and imparted useful information. I enjoyed the presentation." – Live virtual session attendee



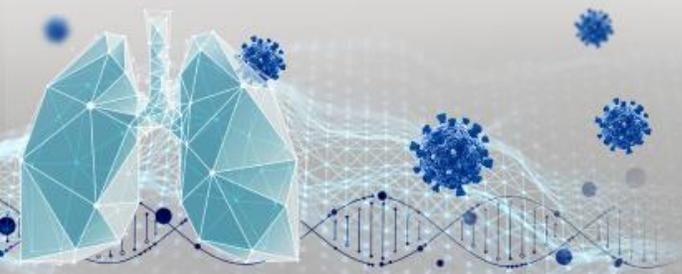
The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

[Final Live Outcomes]

Level 1 Outcomes: Live Virtual Grand Round Sessions: Participation by Degree



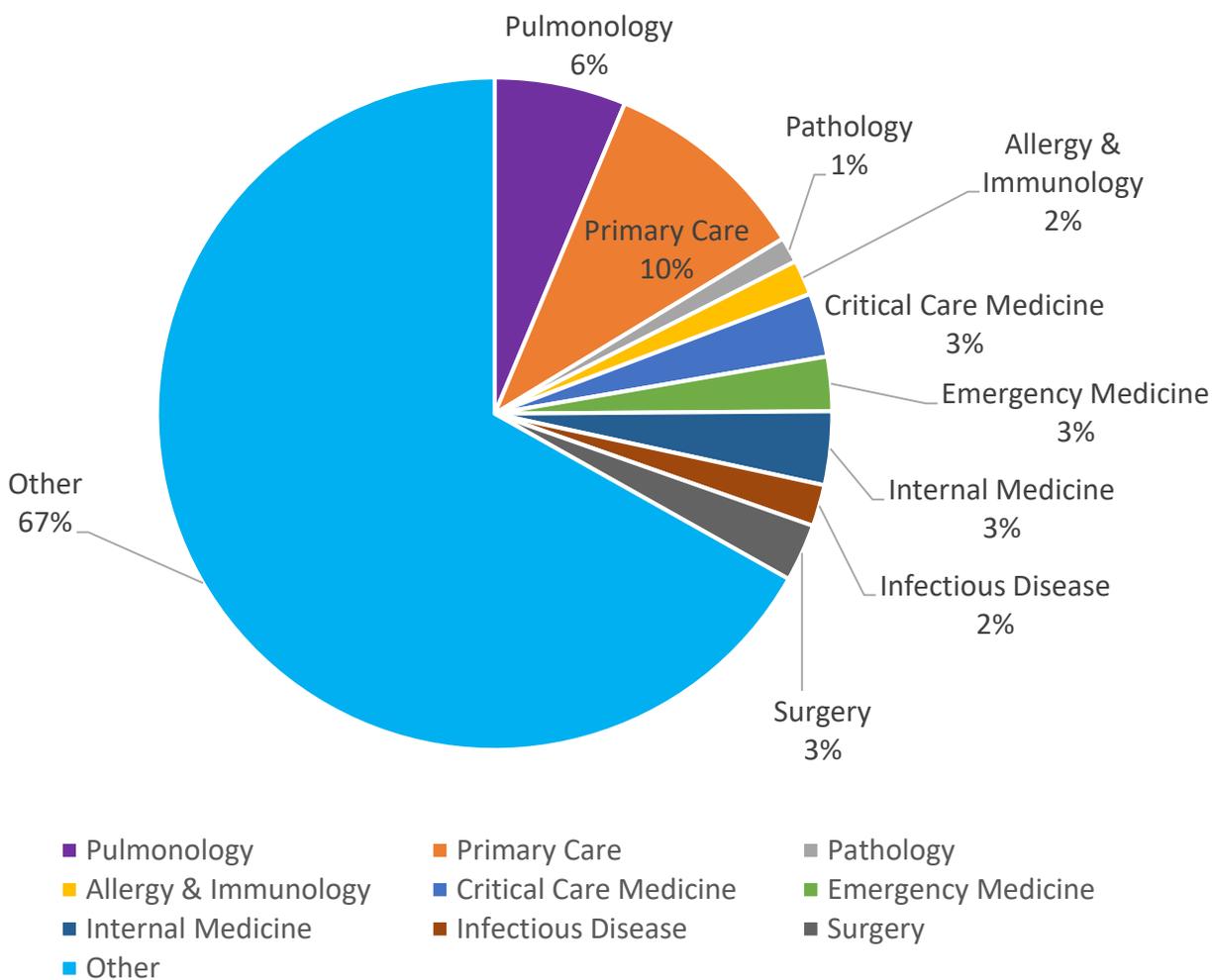
Degree	Total
MD/DO	96
RN	280
NP	28
PA	19
RT	19
PharmD	7
Other	202
Total	651



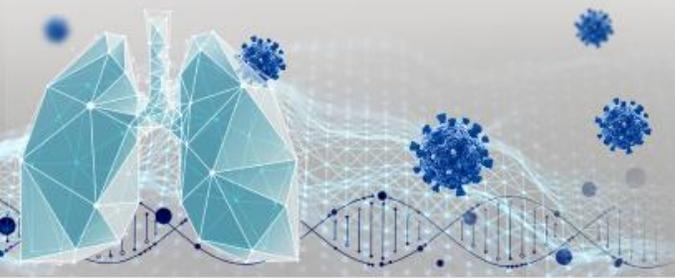
The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

[Final Live Outcomes]

Level 1 Outcomes: Live Virtual Grand Round Sessions: Participation by Specialty



Specialty	Total
Primary Care	65
Pulmonary	41
Internal Medicine	23
Critical Care Medicine	20
Surgery	18
Emergency Medicine	17
Infectious Disease	13
Allergy & Immunology	11
Pathology	8
Other	435
Total	651

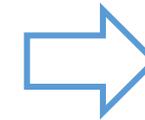
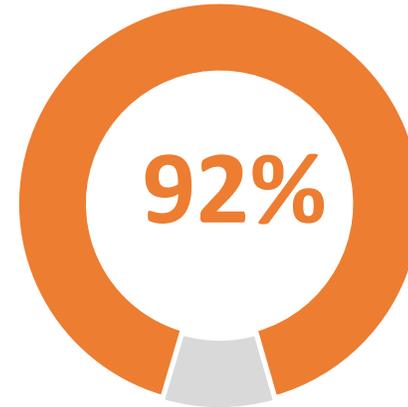
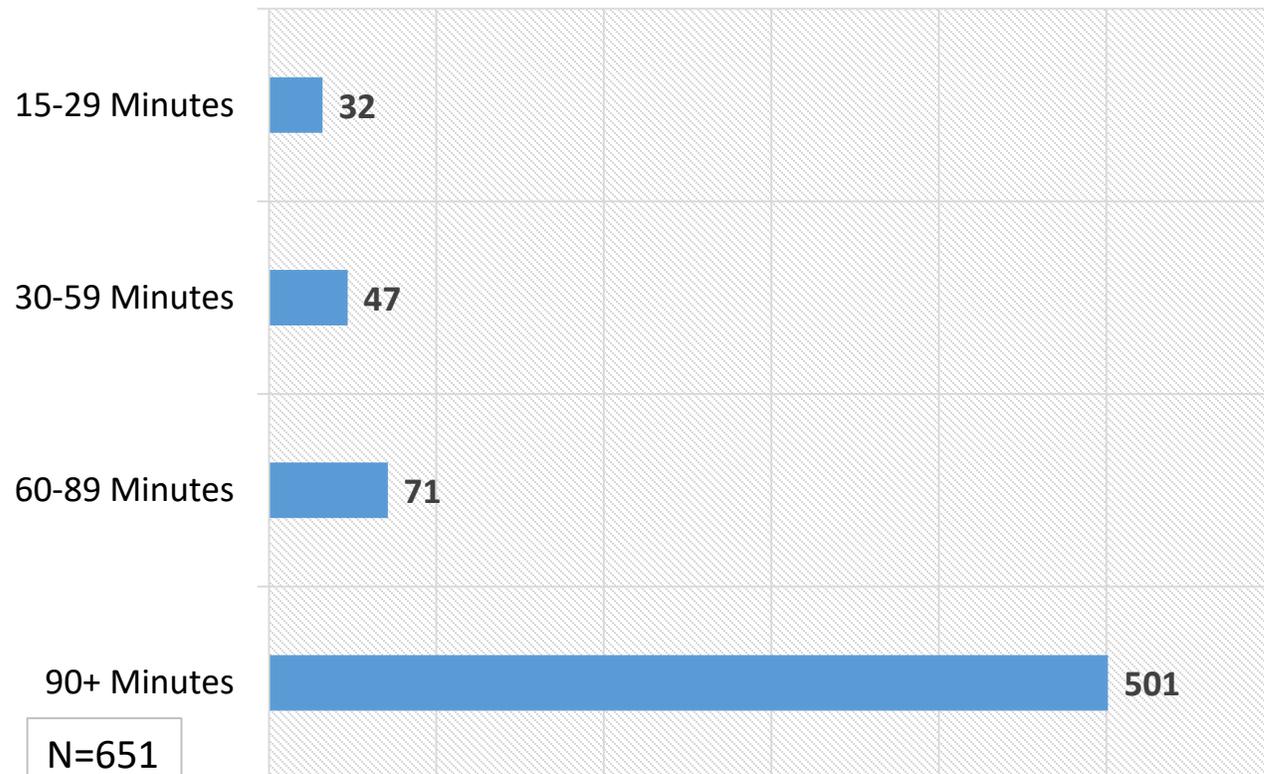


The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

[Final Live Outcomes]

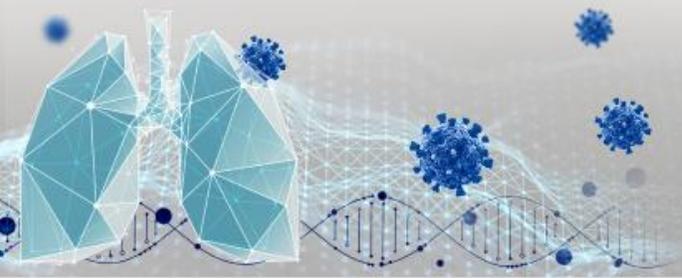
Level 1 Outcomes: Live Webinar Sessions: Participation by Engagement

Time in Webinar



Interest rating - the percentage of time the GoToWebinar player was the primary tab open on the participant's screen

501 Completers
77% of the 651 Total Learners
stayed on for the entire
90 minutes

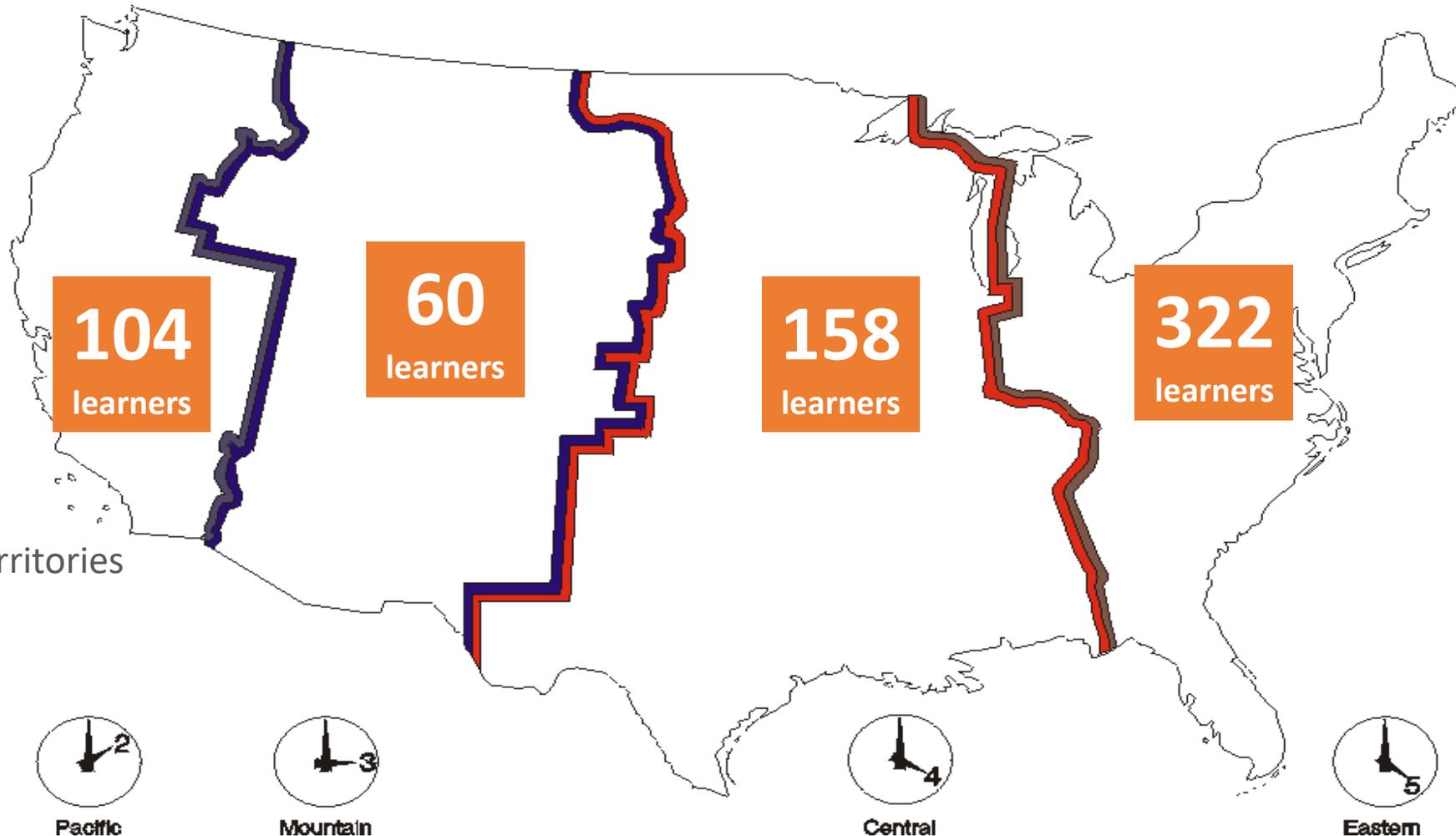


The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

[Final Live Outcomes]

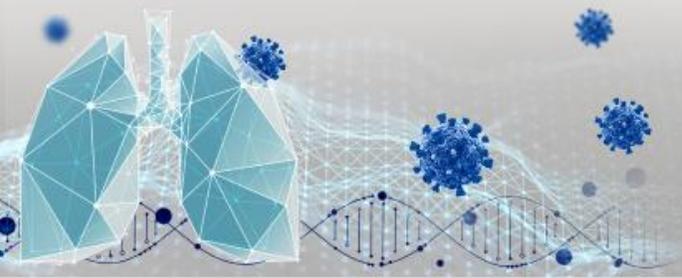
Level 1 Outcomes: Live Webinar Sessions: Participation by Region

N=651



Other

- Quebec
- Northwest Territories
- Yukon (3)
- Guam
- Puerto Rico



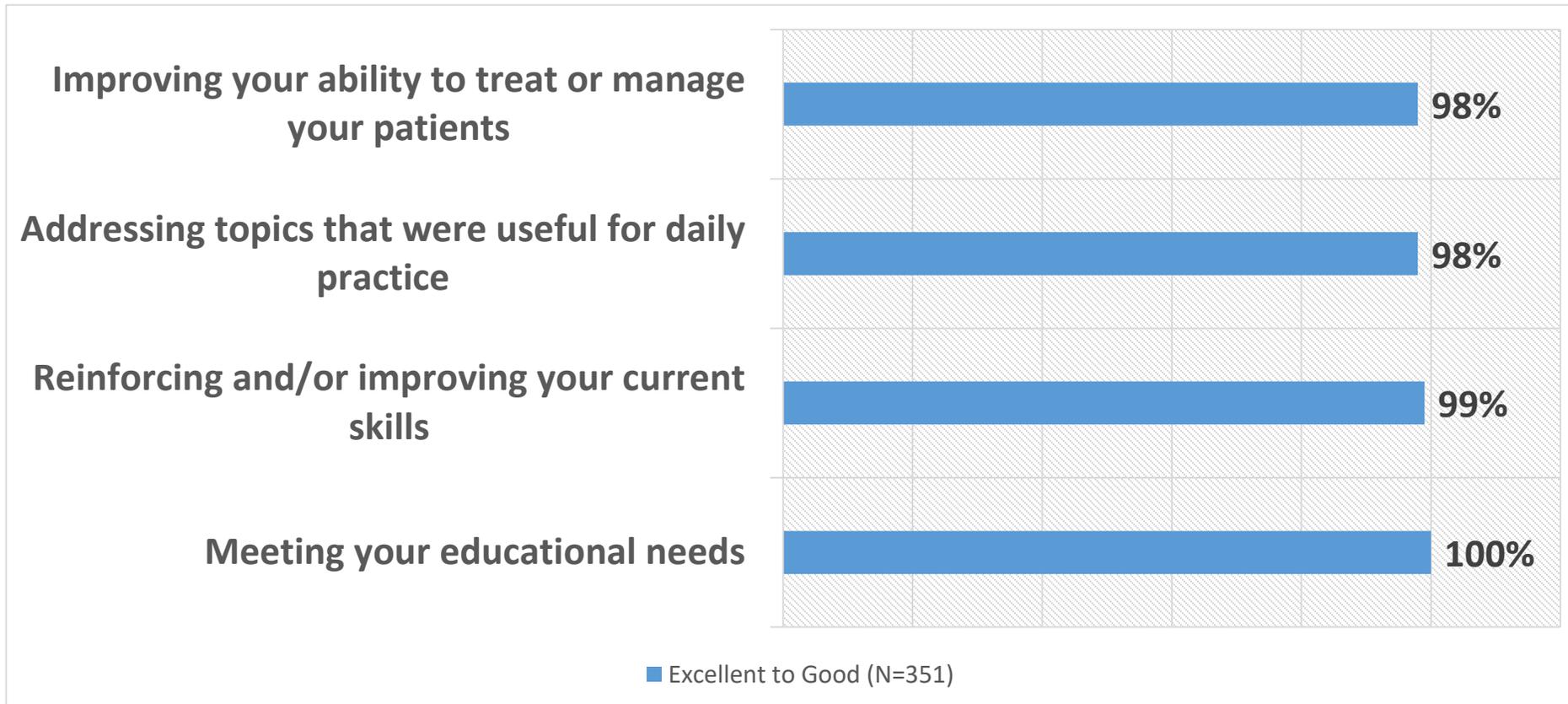
The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

[Final Live Outcomes]

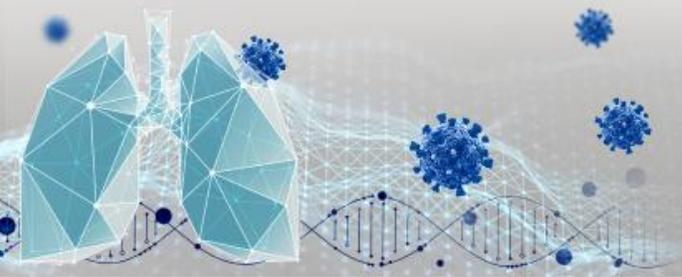
Level 2&3 Outcomes: Learning & Satisfaction - Live Webinar Sessions

Analysis of participant responses related to educational needs

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



Learners reported high levels of satisfaction related to the ability of the activity to impact practical applications



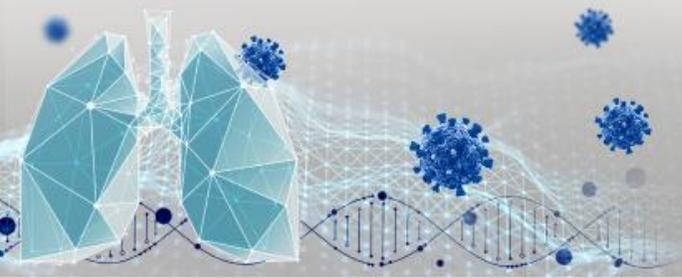
The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

[Final Live Outcomes]

Formative Assessment

National Jewish Health strives to offer the best possible education to physician and healthcare providers. Our gold standard approach to a series of live presentations includes formative assessment between sessions to support evidence-based refinement and improvement of subsequent presentations.

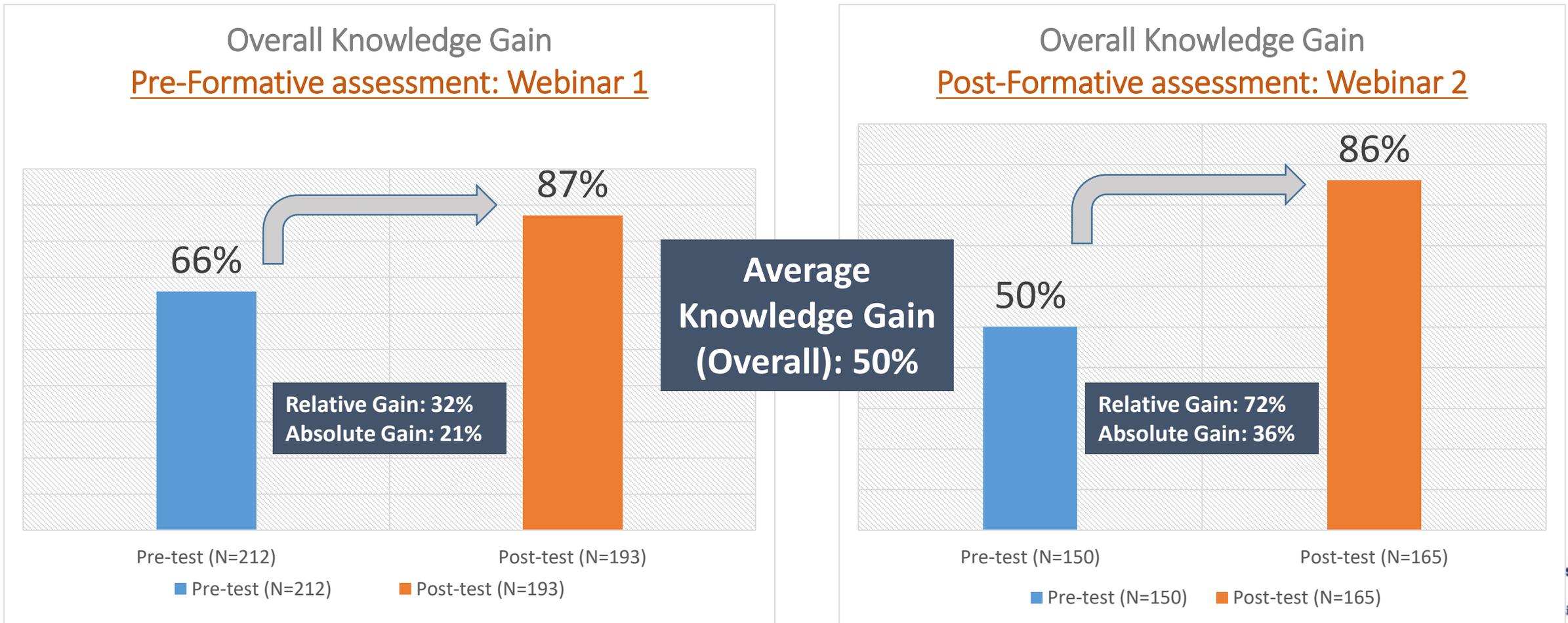
In this series, two pre-/post-test questions were revised as outlined on slides 39 and 40 after faculty recommendations and analysis. For the question on slide 40, this was also revised to better align with a different learning objective.

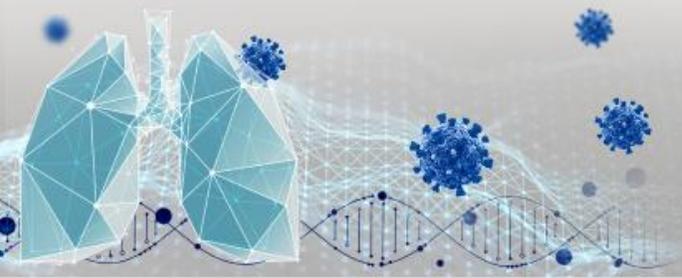


The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

[Final Live Outcomes]

Level 3 Outcomes (Knowledge): Live Webinar Sessions: Overall Knowledge Gain (Before & After Formative Assessment)





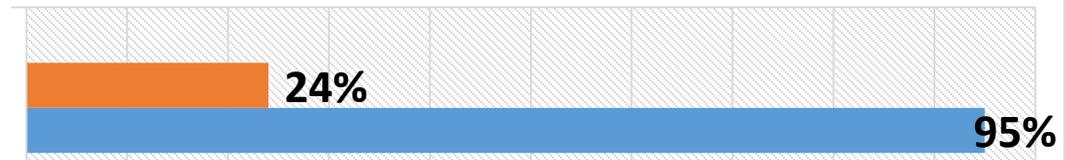
The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

[Final Live Outcomes]

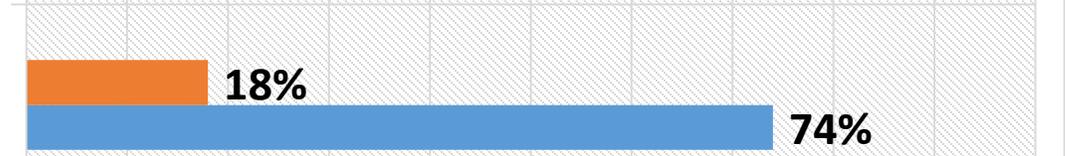
Level 3 Outcomes (Knowledge) - Live Webinar Sessions By Learning Objective (Post Formative Assessment)

Knowledge Gain by Learning Objectives

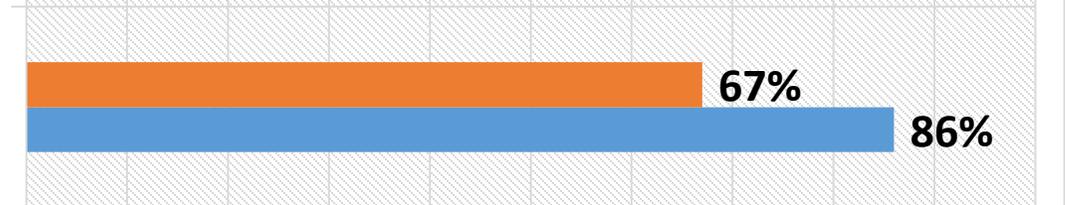
Evaluate current and emerging therapies for patients with COVID-19 and chronic lung disease



Discuss strategies for managing patients with COVID-19 and chronic lung disease



Describe clinical features and key concepts in the pathophysiology of COVID-19 and its interaction with the human immune response



■ Pre-test (AVG N=150) ■ Post-test (N=165)



The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

[Final Live Outcomes]

Level 3 Outcomes (Knowledge): Live Webinar Sessions: Question 1

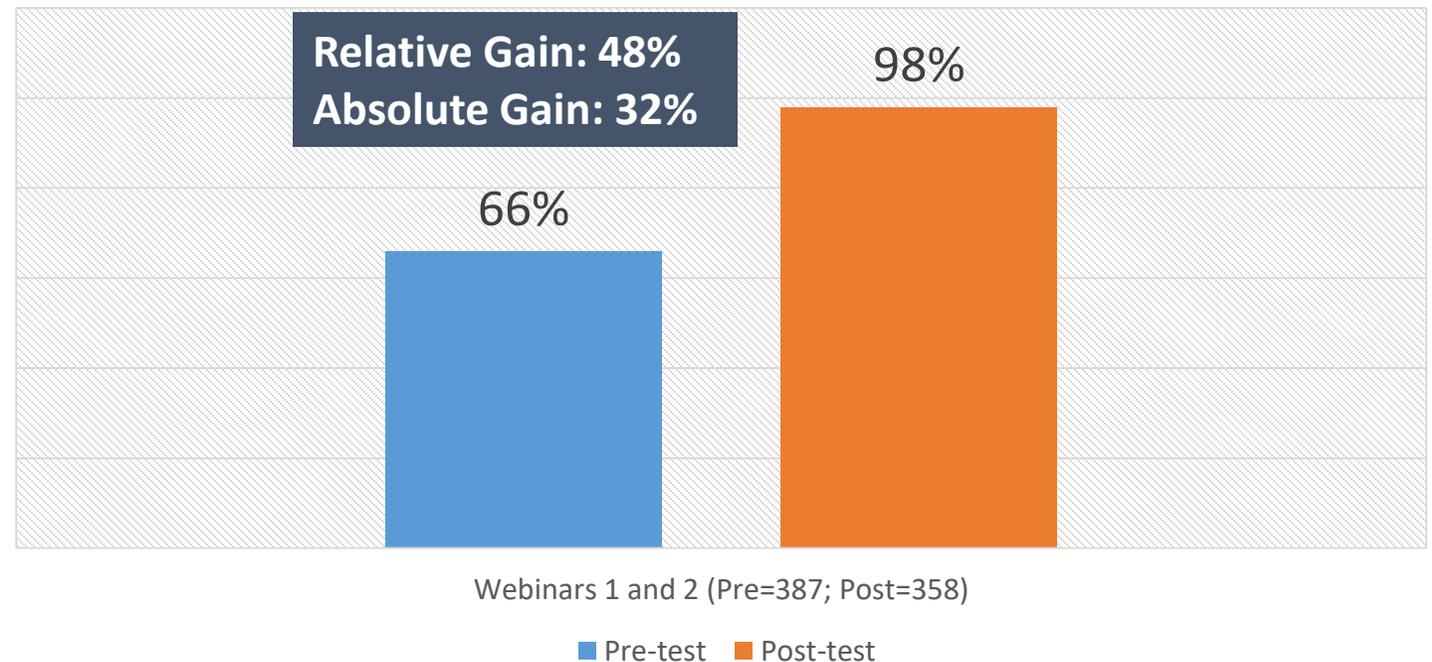
Learning Objective: Describe clinical features and key concepts in the pathophysiology of COVID-19 and its interaction with the human immune response

Question 1

Other than older age, which of the following is a known risk factor with a hazard ratio of 1.5 or greater for developing severe COVID-19 disease?

- a. Female sex
- b. Chronic non-asthma lung disease**
- c. Immunization for influenza
- d. Asthma using inhaled steroids
- e. Previous infection with other coronaviruses

Question 1: Pre-/Post-test





The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

[Final Live Outcomes]

Level 3 Outcomes (Knowledge): Live Webinar Sessions: Question 2

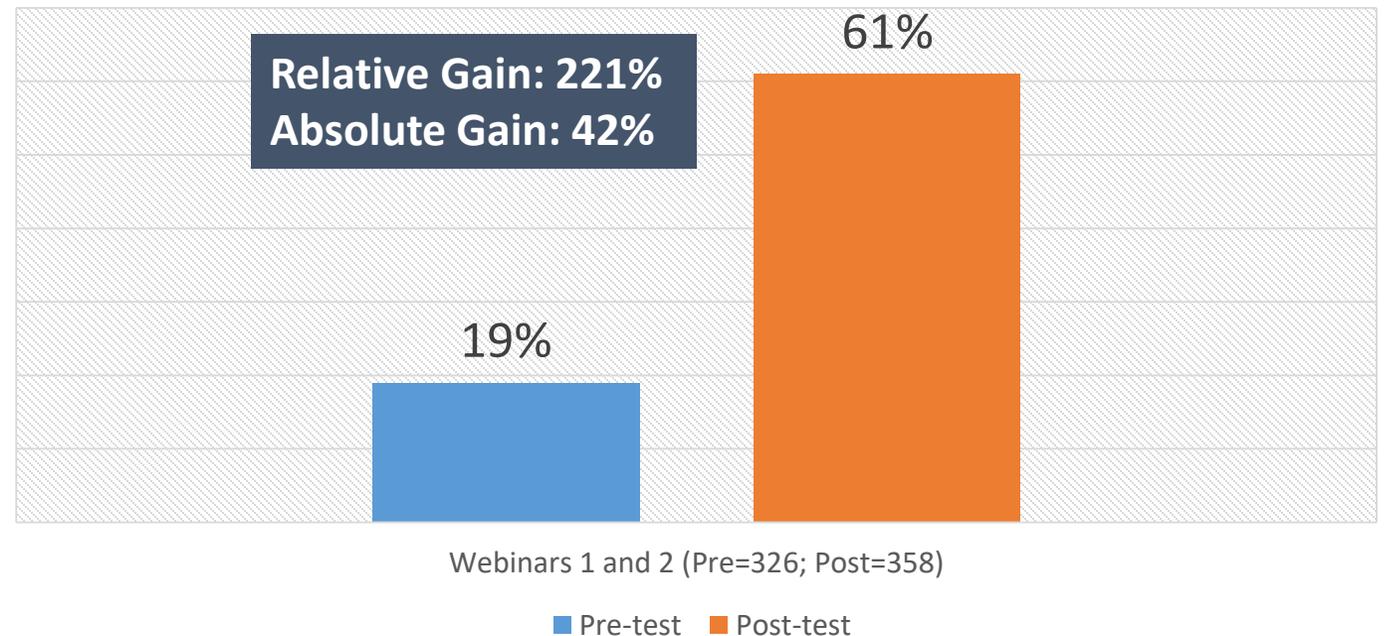
Learning Objective: *Discuss strategies for managing patients with COVID-19 and chronic lung disease*

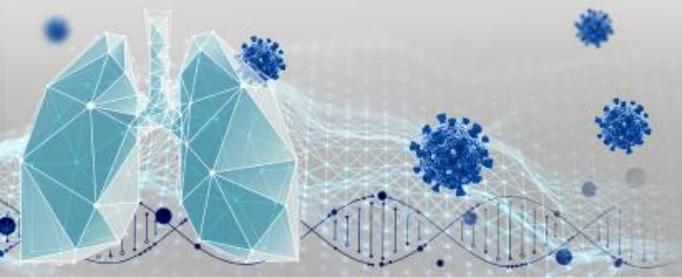
Question 2

Which of the following is likely to mediate efficacy of dexamethasone in COVID-19?

- a. Increasing TNF signaling intensity
- b. Inhibition of NF- κ B signaling**
- c. Decreasing serine protease levels (e.g. SerpinA1)
- d. Improved host anti-viral response

Question 2: Pre-/Post-test





The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

[Final Live Outcomes]

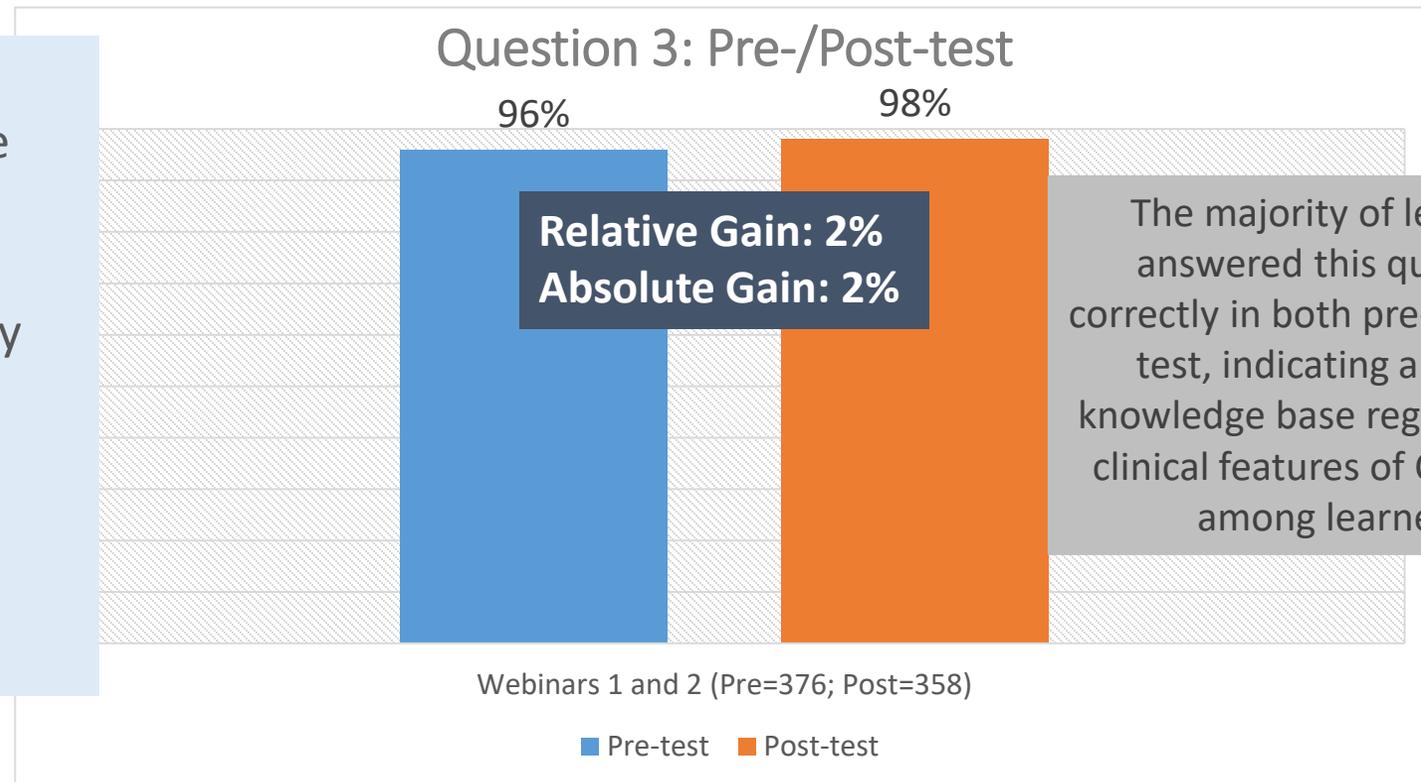
Level 3 Outcomes (Knowledge): Live Webinar Sessions: Question 3

Learning Objective: *Describe clinical features and key concepts in the pathophysiology of COVID-19 and its interaction with the human immune response*

Question 3

What reported symptoms would make you suspect your patient had COVID?

- a. New or worsening cough
- b. Dyspnea and increased respiratory rate
- c. GI symptoms including nausea, vomiting, diarrhea
- d. Loss of taste or smell
- e. **Any of the above**





The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

[Final Live Outcomes]

Level 3 Outcomes (Knowledge): Live Webinar Sessions: Question 4

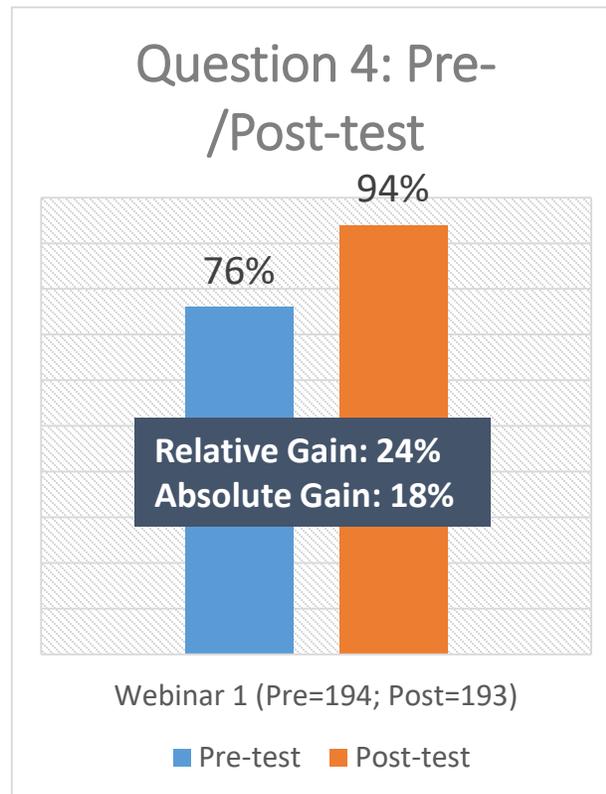
Learning Objective: *Describe clinical features and key concepts in the pathophysiology of COVID-19 and its interaction with the human immune response*

Question revised after Webinar 1 according to faculty recommendation and analysis

Question 4 (Pre-formative assessment)

Which of the following is true with respect to disease transmission of COVID-19?

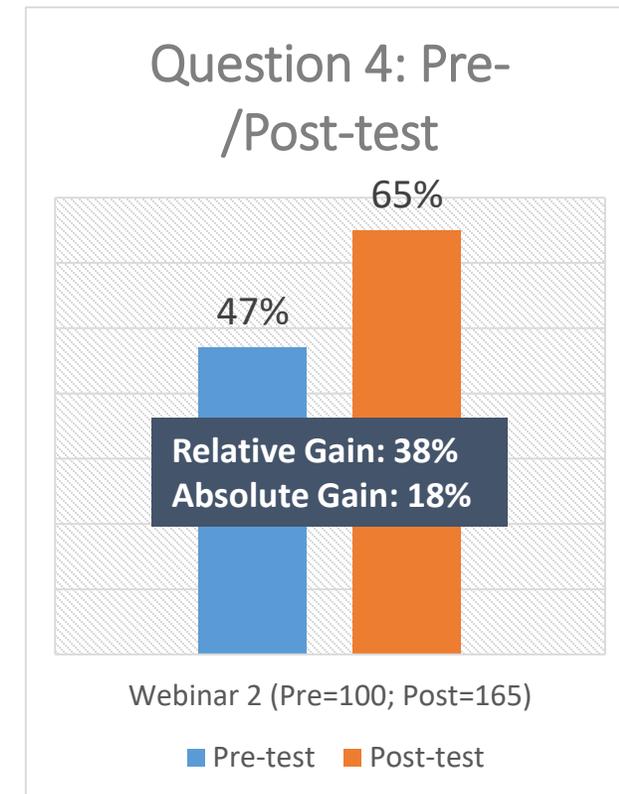
- a. R0 is the number of cases in the population with COVID-19
- b. **The R0 can be influenced by public health measures**
- c. Since the basic R0 for COVID-19 is 2-3, no one person can infect more than 5 other people

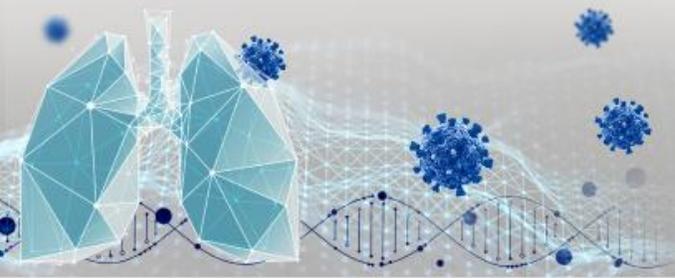


Question 4 (Post-formative assessment)

Which of the following is true with respect to disease transmission of COVID-19?

- a. R0 is the prevalence of infectious COVID-19 cases in the population
- b. The basic R0 for SARS-CoV-2 is estimated at 4-5
- c. **The basic R0 can change with viral mutations**
- d. If the R0 is reduced to 1.1 with social distancing and vaccination, herd immunity will essentially eliminate spread of the virus





The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

[Final Live Outcomes]

Level 3 Outcomes (Knowledge): Live Webinar Sessions: Question 5

Learning Objective (**pre assessment**): Describe clinical features and key concepts in the pathophysiology of COVID-19 and its interaction with the human immune response

Learning Objective (**post assessment**): Evaluate current and emerging therapies for patients with COVID-19 and chronic lung disease

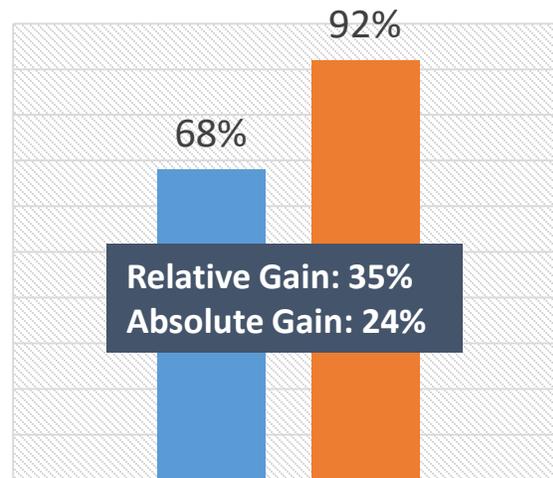
Question revised and mapped to a different LO after Webinar 1 according to faculty analysis and recommendation

Question 5 (Pre-formative assessment)

Which of the following has not been shown to increase your risk of poor outcomes with COVID-19 (based on current data)?

- a. Hypertension
- b. Diabetes
- c. Chronic Obstructive Pulmonary Disease (COPD)
- d. **Asthma**
- e. Advanced Age

Question 5: Pre-
/Post-test



Webinar 1 (Pre=245; Post=193)

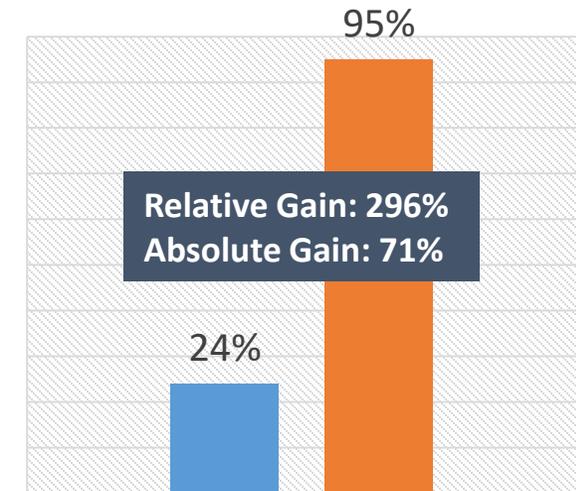
■ Pre-test ■ Post-test

Question 5 (Post-formative assessment)

Which of the following are currently recommended for use for inpatients with COVID-19 by the National Institutes of Health (NIH)?

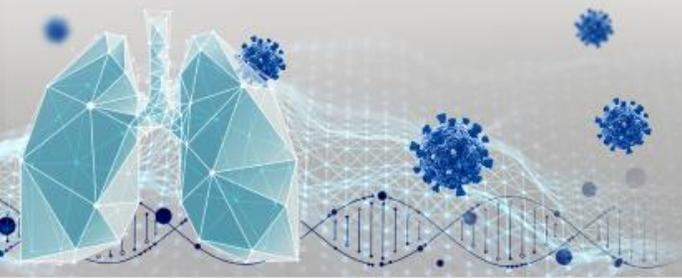
- a. Hydroxychloroquine
- b. Remdesivir
- c. Dexamethasone
- d. Convalescent plasma
- e. **B and C**
- f. All of the above

Question 5: Pre-
/Post-test



Webinar 2 (Pre=182; Post=165)

■ Pre-test ■ Post-test



The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

[Final Live Outcomes]

Level 4 Outcomes (Competence): Live Webinar Sessions

An analysis of open-ended comments demonstrates the following changes learners intend to make:

74%

N=351

Learners intend to make changes to practice as a result of the activity

17%

Educate colleagues of information learned

17%

Apply new knowledge of COVID-19 in practice and seek opportunities for continued learning

14%

Proper medication use based on current evidence

14%

Appropriate PPE and safety protocols

11%

Assessment and management of COVID-19

10%

Assessment of patients with underlying conditions

8%

Understanding signs and symptoms of COVID-19

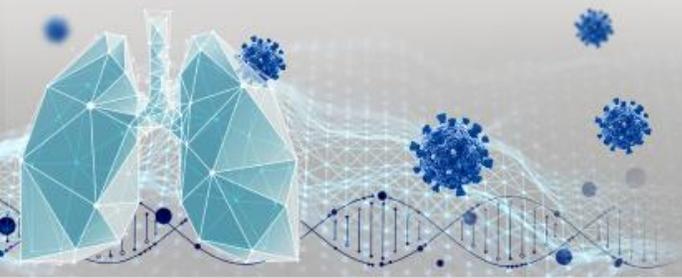
6%

Ability to answer patient questions

N=281

3%

Utilization of testing



The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

[Final Live Outcomes]

Program Evaluation: Live Webinar Sessions

99%

- Material presented in an objective manner and free of commercial bias

99%

- Content presented was evidence-based and clinically relevant

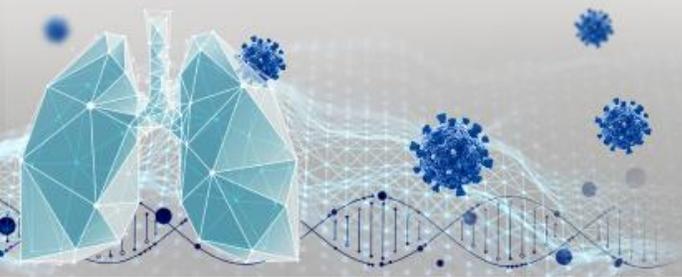
N=351

“This webinar was extremely informative and increased my knowledge of COVID-19/CLD tremendously.”

–Live Webinar Participant

N=301





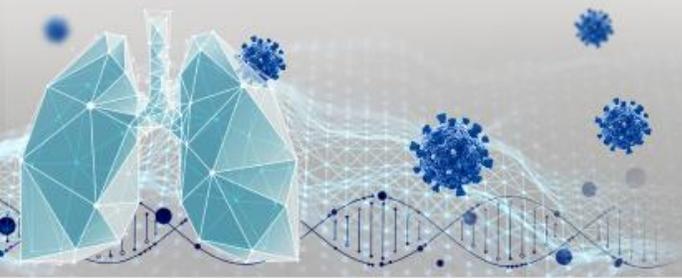
The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

[Final Live Outcomes]

Program Evaluation: Live Webinar Sessions

What do you think is biggest challenge related to COVID-19?

Keeping informed and up-to-date with evolving data	Testing
Difficulty communicating with patients	Fatigue
Anxiety surrounding exposure	Resources such as adequate supplies like PPE, ventilators, etc.
Protecting patients and staff	ICU capacity
No definitive treatment	Consistent safety protocols
Financial issues	Contact tracing
Misinformation spread by media	Variability of response to COVID-19
Compliance with CDC guidelines	Accessibility to patients



The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

[Final Live Outcomes]

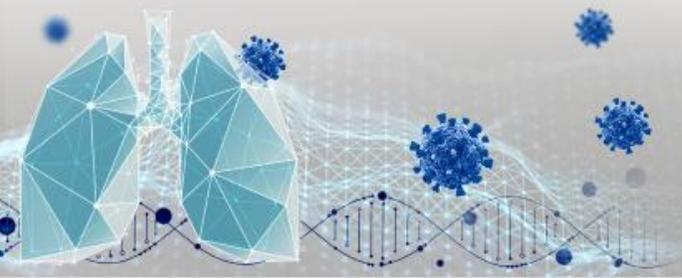
Program Evaluation: Live Webinar Sessions Strategies for Overcoming Barriers

- Types of medications and therapeutics available
- Better insight into understanding the disease
- Adaptation of working environment for better management of care and safety protocols
- Better understanding on where the healthcare community is at in relation to treating COVID-19 in the short and long term
- Screening processes to implement
- Post care of COVID-19 treatment
- Recognition of patient apprehension with regards to necessary procedures
- Telemedicine
- Implementation of phone triage

70%

N=351

Learners indicated the activity addressed strategies for overcoming barriers to optimal patient care

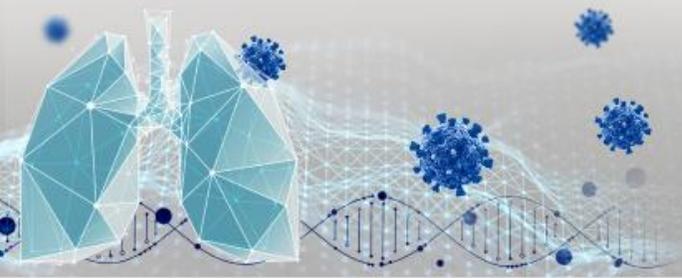


The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

[Final Live Outcomes]

Program Evaluation: Live Webinar Sessions

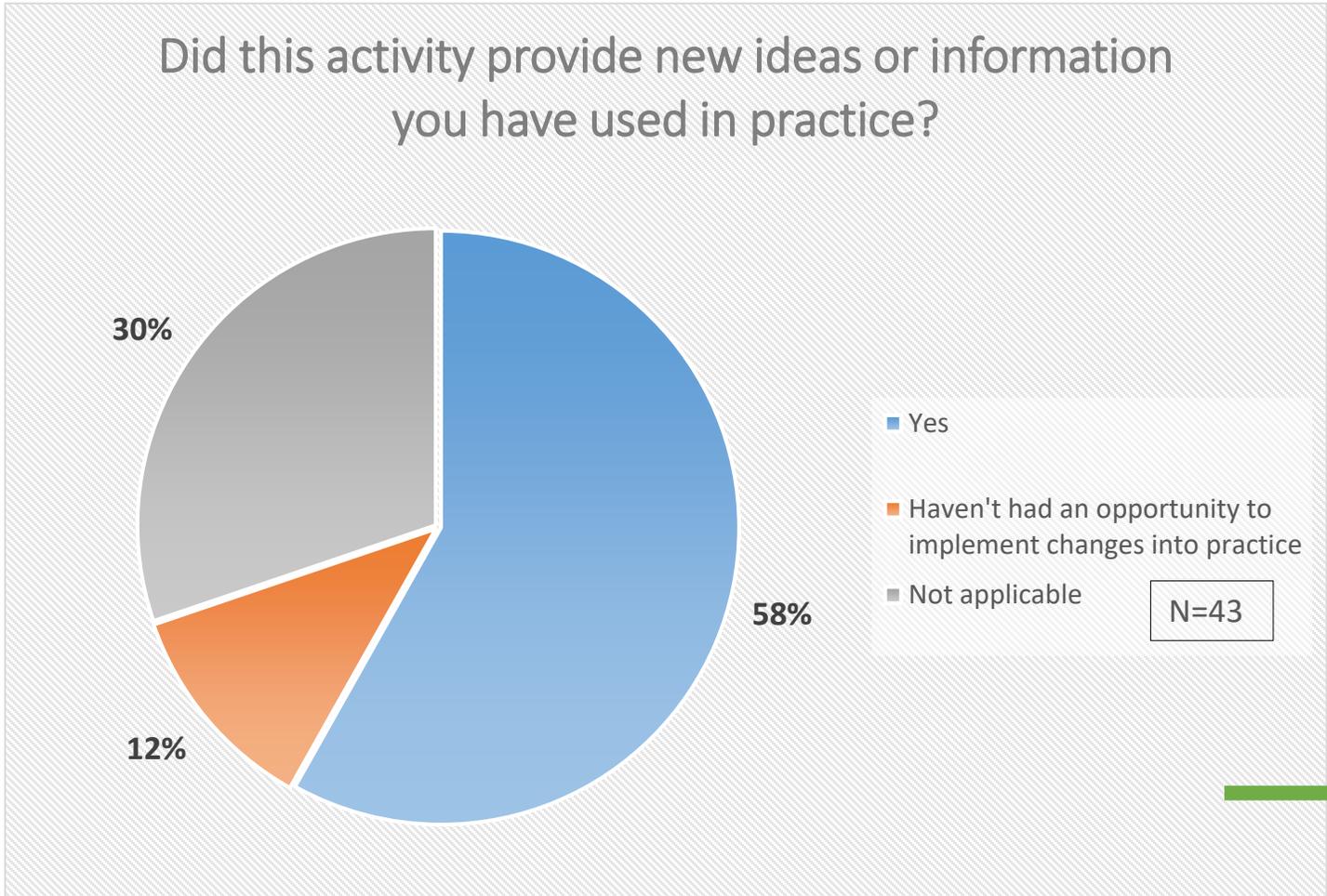
What topics would you like more information about in future educational activities?	
COVID-19 vaccine updates	Effects on “long haul” survivors
Pediatric COVID-19	Asthma
Auto immune diseases	Acute kidney injury
Cardiology	Sleep medicine
Depression due to quarantine	Ethics related to COVID-19 management
Lung disease	Infection prevention
COVID-19 and COPD	COVID-19 data updates
Effects of isolation on elderly	NTM infections
Vaping	OBGYN patients



The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

[Final Live Outcomes]

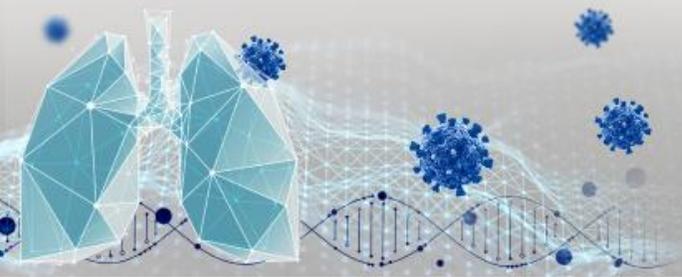
45-day Follow-up Survey: Live Webinar Sessions



60%

N=5

Of those who indicated they hadn't implemented changes into practice are still committed to making changes

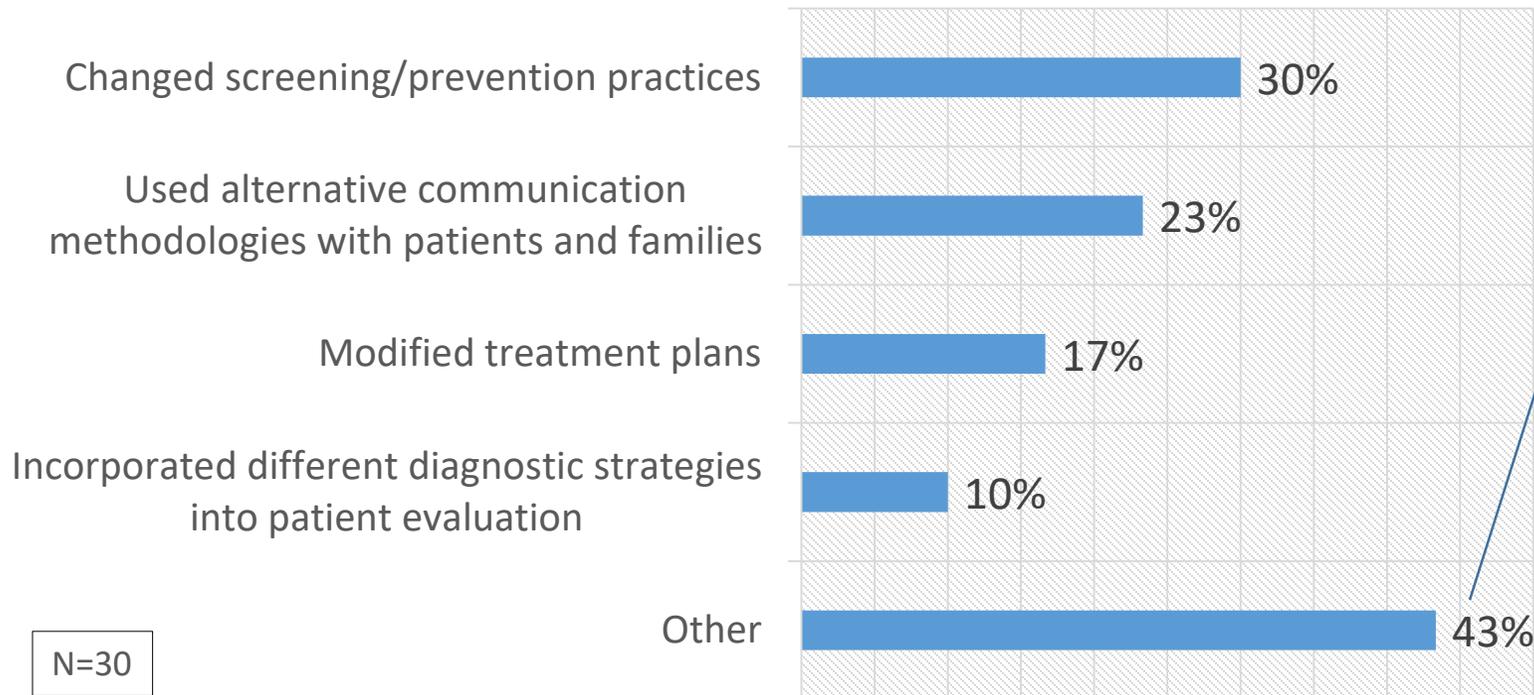


The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

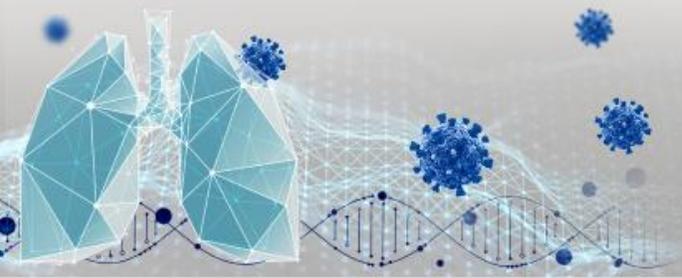
[Final Live Outcomes]

45-day Follow-up Survey: Live Webinar Sessions

What change(s) have you incorporated into practice as result of the activity?



- Review of COVID-19 symptoms, travel, testing history with patients upon every interaction
- Phone screen day before appointment
- More follow-up care for post-COVID patients
- App on phone to directly connect with family
 - Patient education

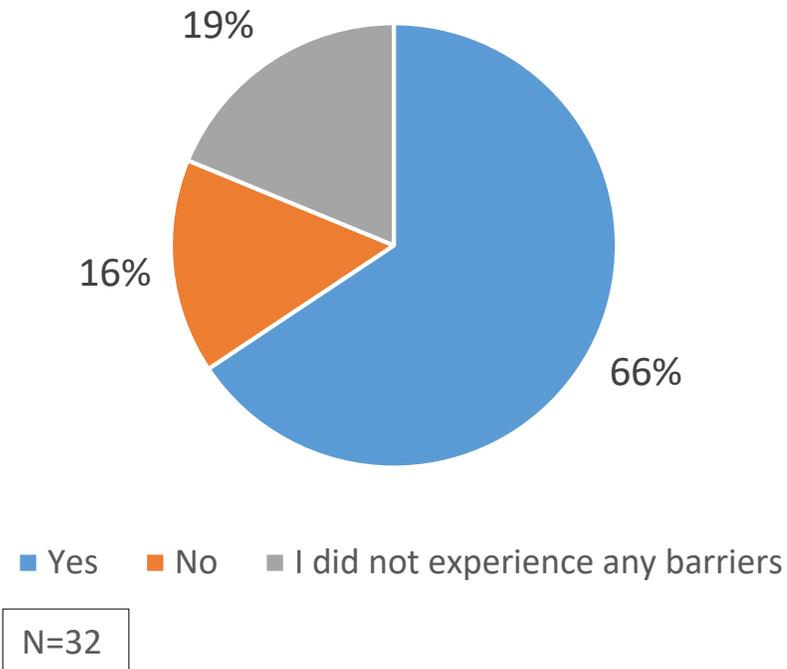


The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

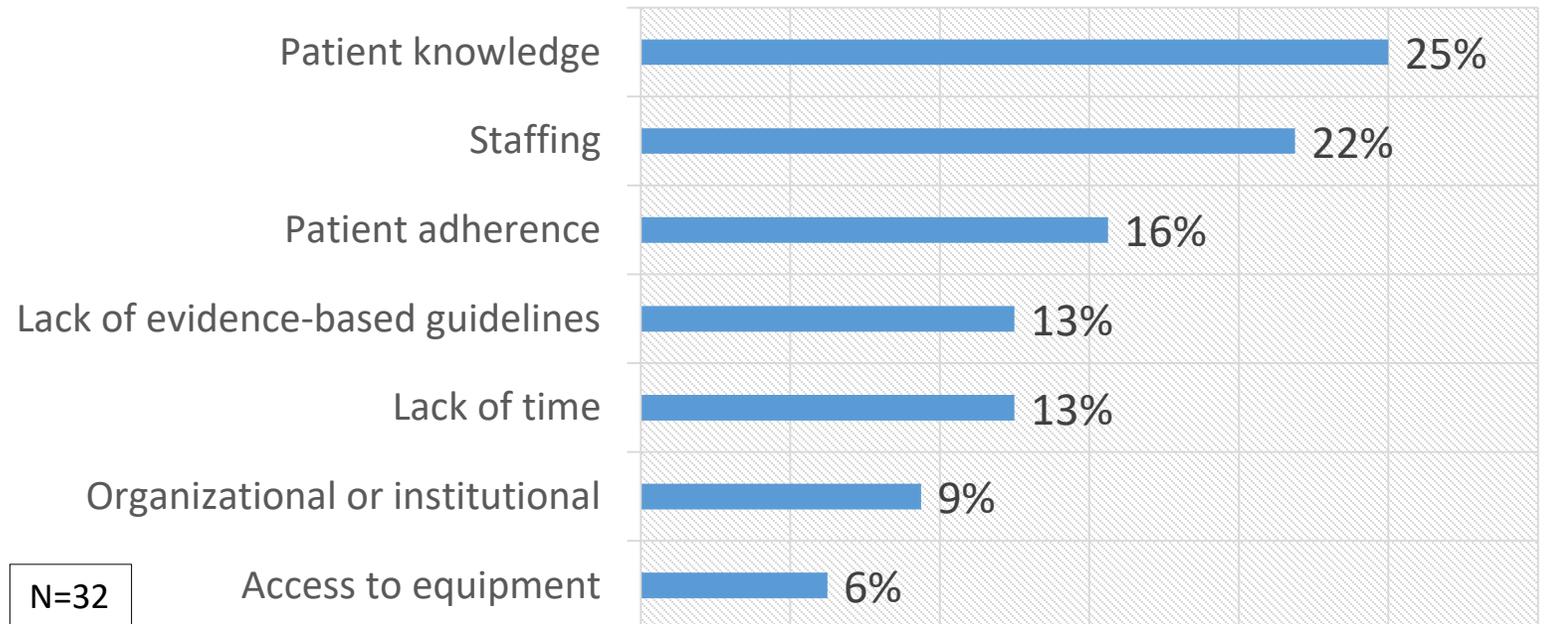
[Final Live Outcomes]

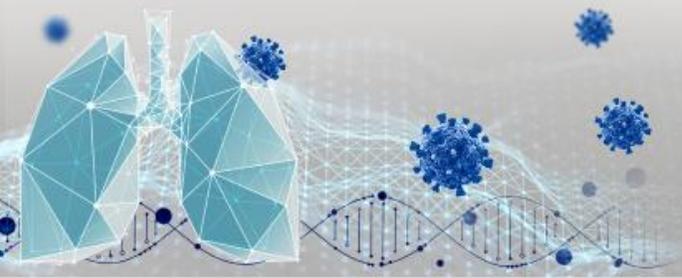
45-day Follow-up Survey: Live Webinar Sessions

Did the activity provide information, education, tools or resources to be able to address these barriers?



What barriers have you experienced since this activity that may impact patient outcomes or optimal patient care?



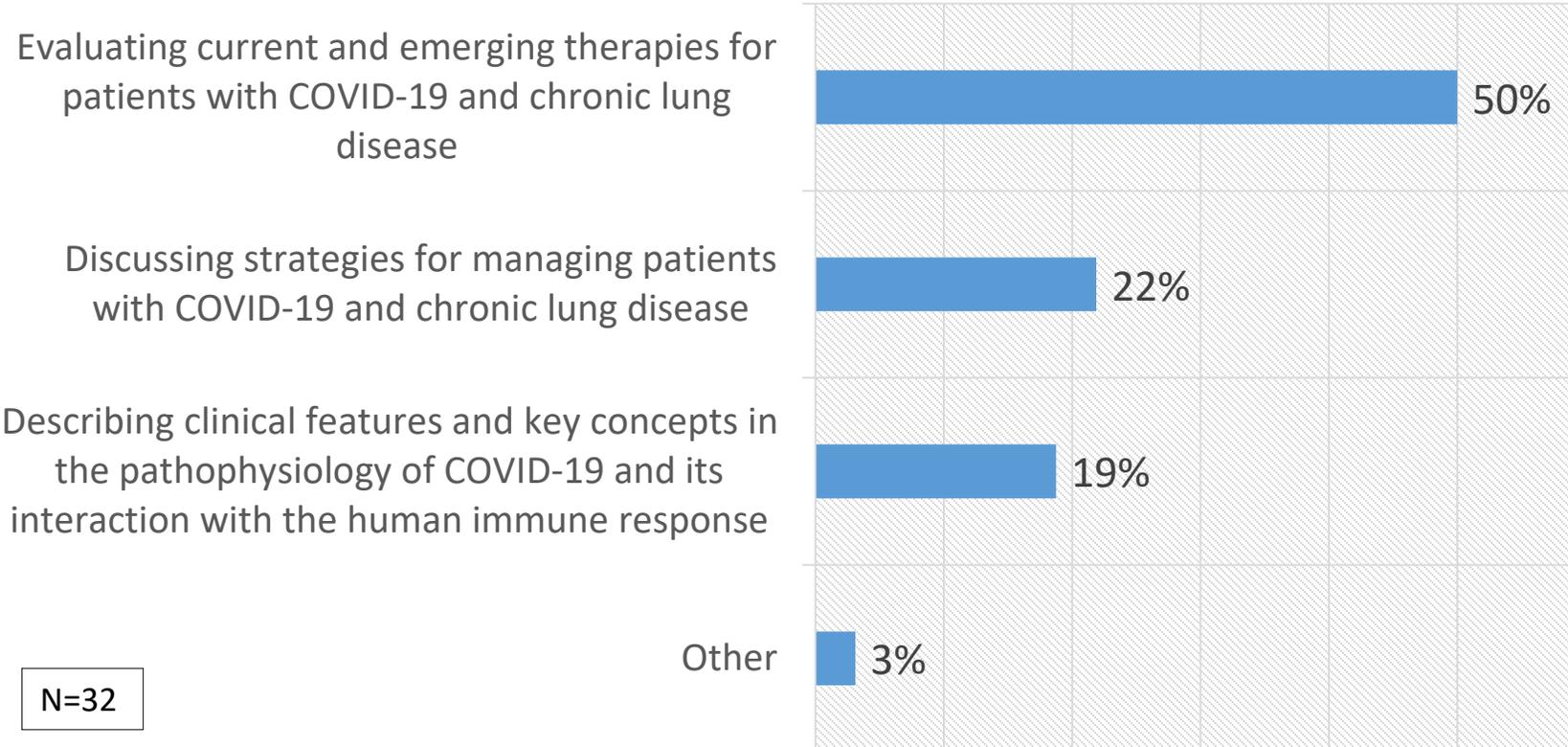


The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

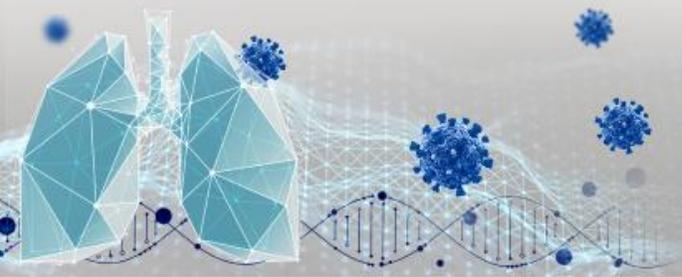
[Final Live Outcomes]

45-day Follow-up Survey: Live Webinar Sessions

In which areas do you feel you need more education?



25% of respondents indicated no additional education is needed



The Intersection of COVID-19 and Chronic Lung Disease: Treating Real World Issues with Evolving Data

[Final Outcomes]

Accreditation

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.

Live Webinars

NJH designates this live activity for a maximum of 1.5 *AMA PRA Category 1 Credits™*.

Provider approved by the California Board of Registered Nursing, Provider Number 12724 for 1.5 nursing contact hours.

Online Enduring

NJH designates this enduring material for a maximum of 1.5 *AMA PRA Category 1 Credits™*.

Provider approved by the California Board of Registered Nursing, Provider Number 12724 for 1.5 nursing contact hours.

