



# Conversations in Dermatology 2019

## Final Outcomes Report



### Pemphigus Vulgaris: Practice Pearls and Therapeutic Updates

Genentech, Inc. • G-73818

December 19, 2019



716  
Participants



1 Activity



601 certificates  
issued to date

The findings reveal that this education has the potential to impact

## 1,787,136

patients on an annual basis.

30,931-37,805  
Patients Weekly

2019 Conversations Activity

Date

Participants

Conversations in Dermatology 2019

6/8/19

716

Speaker

Pemphigus Vulgaris: Practice Pearls and Therapeutic Updates

Cost: Free

Start Date: 07/01/2019

Expiration

Date: 06/30/2020

Target Audience:

Dermatologists

Format: Webcast

Estimated Time To

Complete CME

Activity: 1.0 Hour

Credit(s):

1.0 AMA PRA Category

1 Credit™

1.0 AANP Contact hour

which includes 0.50

pharmacology hours

Hardware/Software

Requirements: Any web

browser



Jacob O. Levitt, MD, FAAD

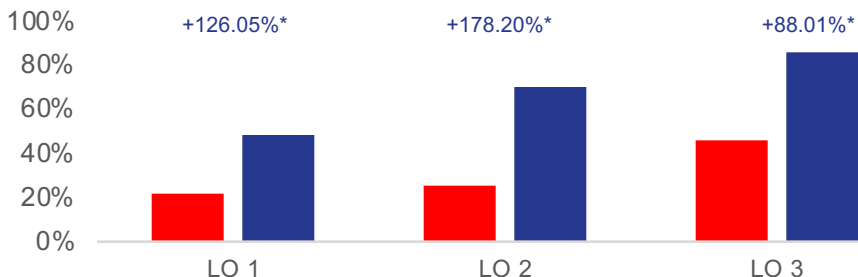
Professor

Vice Chair, Dermatology

Icahn School of Medicine at Mount Sinai

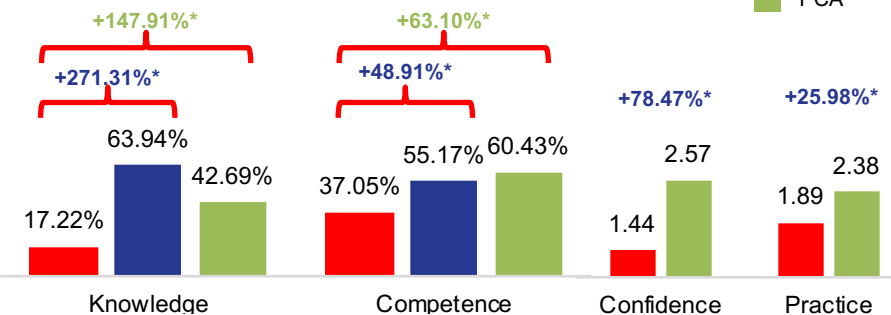
New York, NY

## Learning Gains Across Objectives



- ❖ **LO 1:** Describe the clinical presentation and evaluation of pemphigus vulgaris
- ❖ **LO 2:** Discuss the data on established and emerging therapies for pemphigus vulgaris
- ❖ **LO 3:** Optimize treatment strategies for pemphigus vulgaris based on clinical presentation

## Learning Domain Analysis



- ❖ A statistically significant net gain was measured from Pre-Test to the Post Curriculum Assessment (PCA) in both Knowledge (148%) and Competence (63%)
- ❖ Competence scores continued to increase from Post-Test to the PCA, while Knowledge scores fell, illustrating an opportunity for further declarative and fact based reinforcement in this area
- ❖ In Confidence and practice strategy, which were measured at Pre-Test and follow-up, low scores were observed, reflecting a level of confidence and practice behavior consistent with low scores in Knowledge and Competence

## Persistent Learning Gaps/Needs

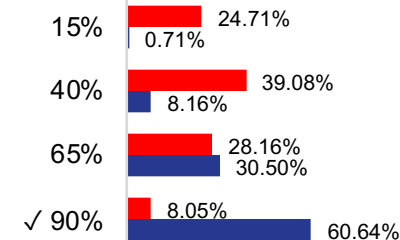
### Clinical presentation and diagnosis of PV

On a Knowledge and a Competence item, learners struggled to correctly identify the presentation of PV in a clinical setting, both on skin biopsy and in imaging.

### Remission of pemphigus in patients treated with rituximab in addition to prednisone

On a Knowledge item discussing the outcome of clinical trials on the addition of rituximab to existing prednisone therapy for PV patients, learners struggled at Post-Test to correctly identify the rate of remission for this treatment.

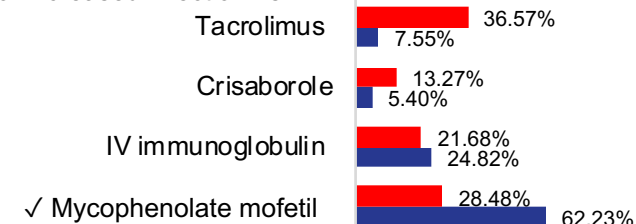
In a randomized trial in patients with pemphigus that compared rituximab plus prednisone to prednisone alone, approximately what percentage of subjects in the rituximab group achieved remission?



### Efficacy and side effects of mycophenolate mofetil

On a Knowledge item, learners struggled to correctly identify mycophenolate mofetil as an effective treatment option for PV with increased infection risk as a key side effect.

Which of the following agents has demonstrated efficacy for the treatment of pemphigus vulgaris and has a key side effect of increased infection risk?



# Curriculum Patient Impact

In the evaluation, learners (N = 284) were asked to report how many patients they see in any clinical setting per week by selecting a range. The resulting distribution of learner responses was then extrapolated to reflect the total number of learners who have attended the onsite and online meetings.

The findings reveal that this education has the potential to impact

**1,787,136**  
patients on an annual basis.

30,931–37,805 patients on a weekly basis

30,931–  
37,805

## **Course Director**

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Professor and Vice Chair  
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# Conversations in Dermatology 2019

## Commercial Support

The Conversations in Dermatology: 2019 series of CME activities were supported through educational grants or donations from the following companies:

- ❖ Genentech, Inc.
- ❖ Sanofi Genzyme and Regeneron Pharmaceuticals

# Overview

# Learning Objectives

- ❖ Describe the clinical presentation and evaluation of pemphigus vulgaris
- ❖ Discuss the data on established and emerging therapies for pemphigus vulgaris
- ❖ Optimize treatment strategies for pemphigus vulgaris based on clinical presentation



## One Live Virtual CME Symposium



## Enduring CME Symposium Webcast

<https://www.naceonline.com/courses/pemphigus-vulgaris-practice-pearls-and-therapeutic-updates>

### Speaker



Jacob O. Levitt, MD, FAAD  
Professor  
Vice Chair, Dermatology  
Icahn School of Medicine at Mount Sinai  
New York, NY

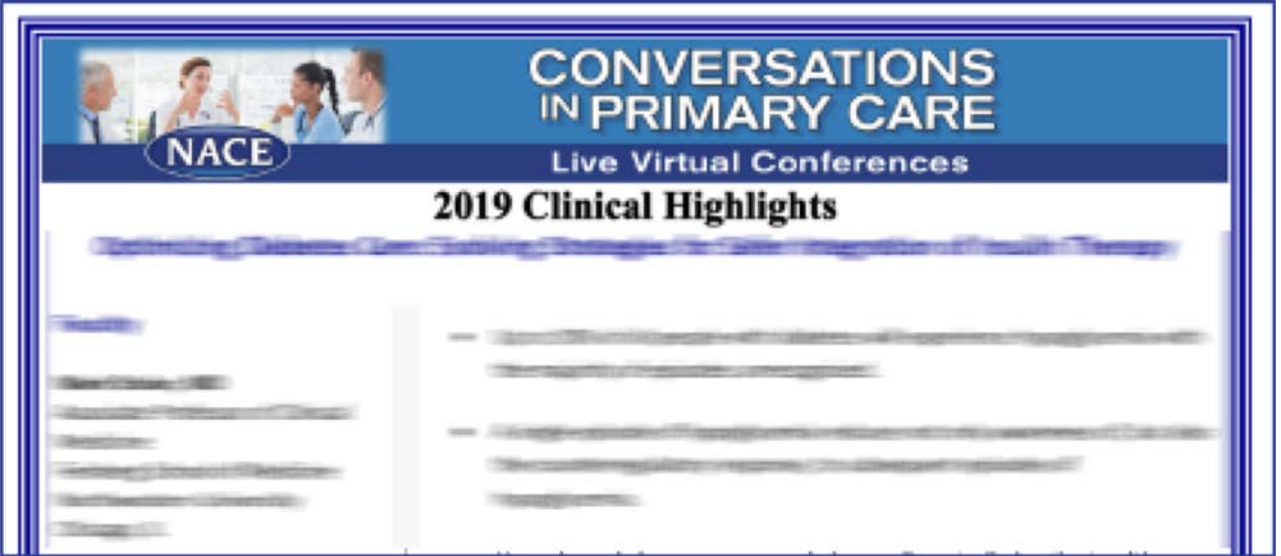
### Pemphigus Vulgaris: Practice Pearls and Therapeutic Updates



Cost: Free  
Start Date: 07/01/2019  
Expiration Date: 06/30/2020  
Target Audience: Dermatologists  
Format: Webcast  
Estimated Time To Complete CME Activity: 1.0 Hour  
Credit(s): 1.0 AMA PRA Category 1 Credit™, 1.0 AANP Contact hour which includes 0.50 pharmacology hours  
Hardware/Software Requirements: Any web browser

## Clinical Highlights eMonograph

eMonograph, containing key teaching points from the CME activity, was distributed 1 week after the meeting to all attendees.





# Outcomes Methodology

Learning outcomes were measured using matched Pre-Test and Post-Test scores for Knowledge, Performance, Confidence, and practice strategy and across all of the curriculum's Learning Objectives.

Outcomes Metric	Definition	Application
<b>Percentage change</b>	This is how the score changes resulting from the education are measured. The change is analyzed as a relative percentage difference by taking into account the magnitude of the Pre-Test average.	Differences between Pre-Test, Post-Test, and PCA score averages
<b>P value (p)</b>	This is the measure of the statistical significance of a difference in scores. It is calculated using dependent or independent samples t-tests to assess the difference between scores, taking into account sample size and score dispersion. Differences are considered significant for when $p \leq .05$ .	Significance of differences between Pre-Test, Post-Test, and PCA scores and among cohorts
<b>Effect size (d)</b>	This is a measure of the strength/magnitude of the change in scores (irrespective of sample size). It is calculated using Cohen's d formula, with the most common ranges of d from 0-1: d < .2 is a small effect, d=.2-.8 is a medium effect, and d > .8 is a large effect.	Differences between Pre-Test and Post-Test score averages
<b>Power</b>	This is the probability (from 0 to 1) that the "null hypothesis" (no change) will be appropriately rejected. It is the probability of detecting a difference (not seeing a false negative) when there is an effect that is dependent on the significance (p), effect size (d), and sample size (N).	Differences between Pre-Test and Post-Test score averages
<b>Percentage non-overlap</b>	This is the percentage of data points at the end of an intervention that surpass the highest scores prior to the intervention. In this report, it will reflect the percentage of learners at Post-Test who exceed the highest Pre-Test scores.	Differences between Pre-Test and Post-Test score averages

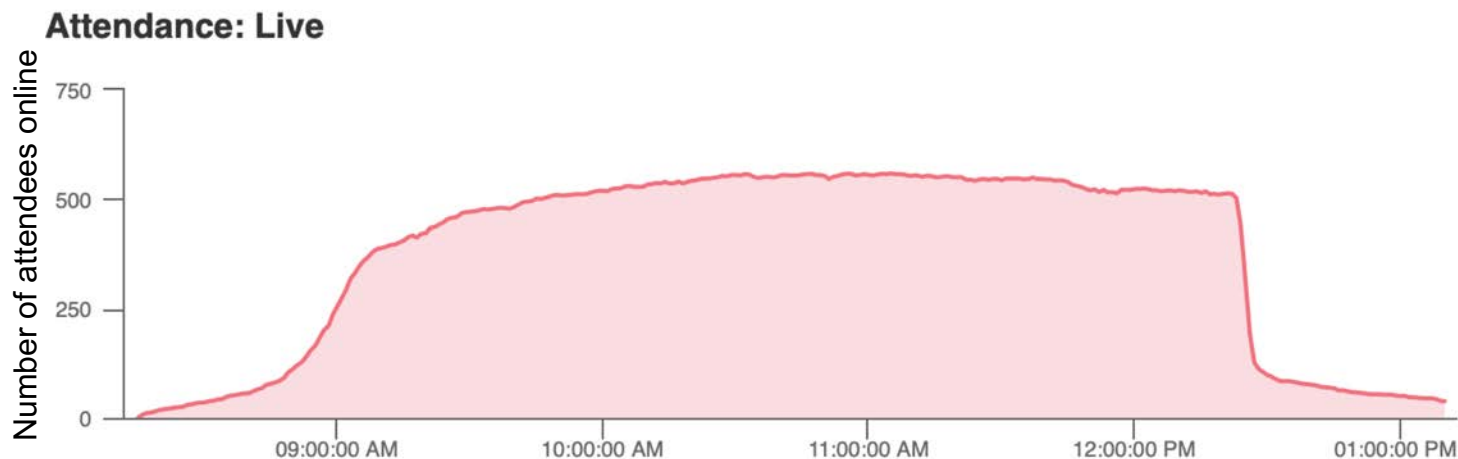
# 2<sup>nd</sup> Annual Conversations in Dermatology 2019 Participation

## Activity Date: Saturday, June 8, 2019

- ❖ 3.0 credit live online CME/CE virtual symposium
- ❖ 2 topics and faculty Q and A segment
- ❖ **Avg. live learner engagement: 2 hrs. 49 minutes**
- ❖ 10,117 Pre and post test responses
- ❖ 243 questions from the live clinician audience

716  
Attendees

## Dedicated, Engaged, Clinician Attendees



## Outstanding Audience Engagement

616 out of 716 live attendees (86%) Achieved an Engagement Score of 9/10 or 10/10



Widgets Opened



Time in Webcast



Questions Asked



Polls Answered



Surveys Submitted



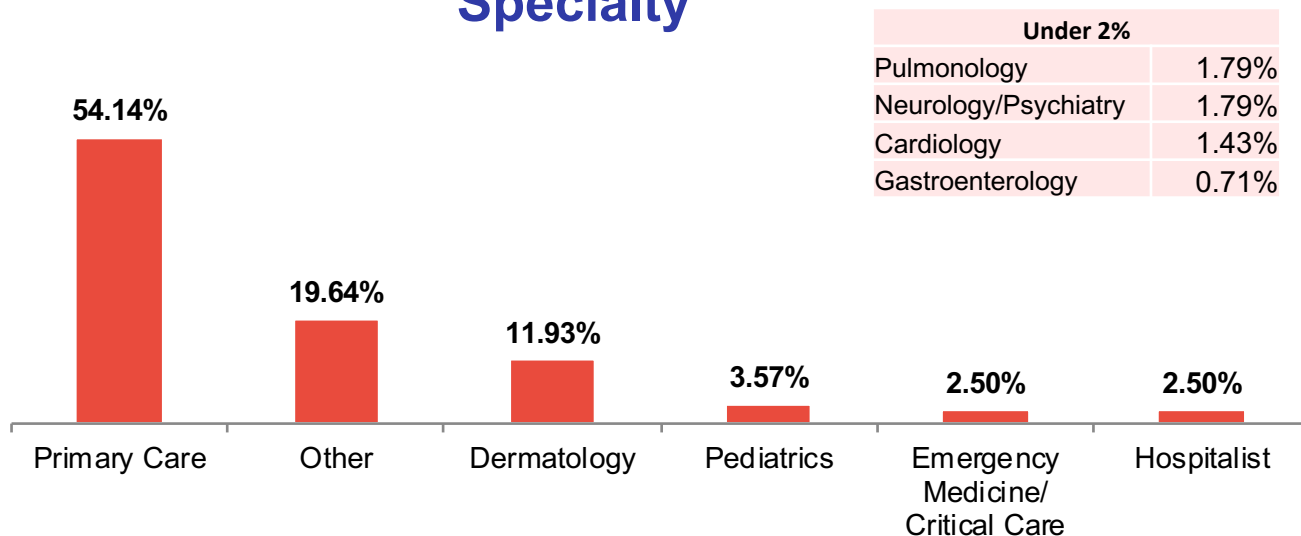
Resources Viewed

### Engagement Score Index Contributors:

- Length of time watching the webcast (up to 4.5)
- Number of polls answered (up to 2.0)
- Number of questions asked (up to 1.5)
- Number of complementary resources viewed (up to 1.0)
- Number of widgets opened on the console (up to 1.0)

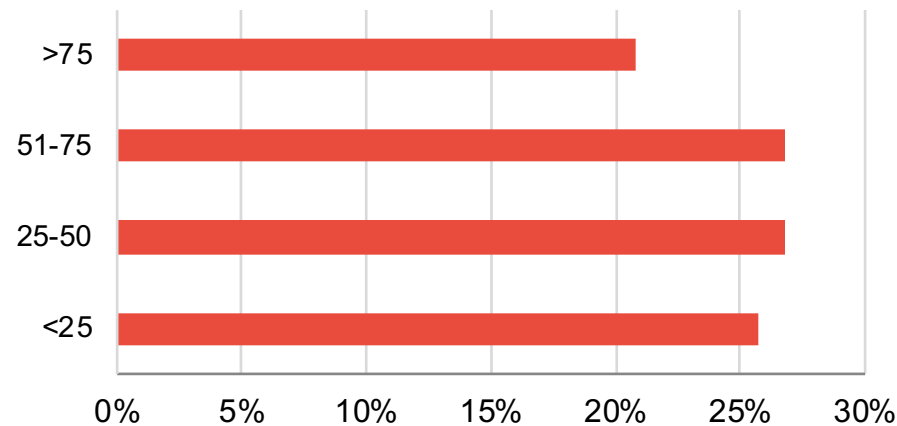
# Level 1: Demographics and Patient Reach

## Specialty



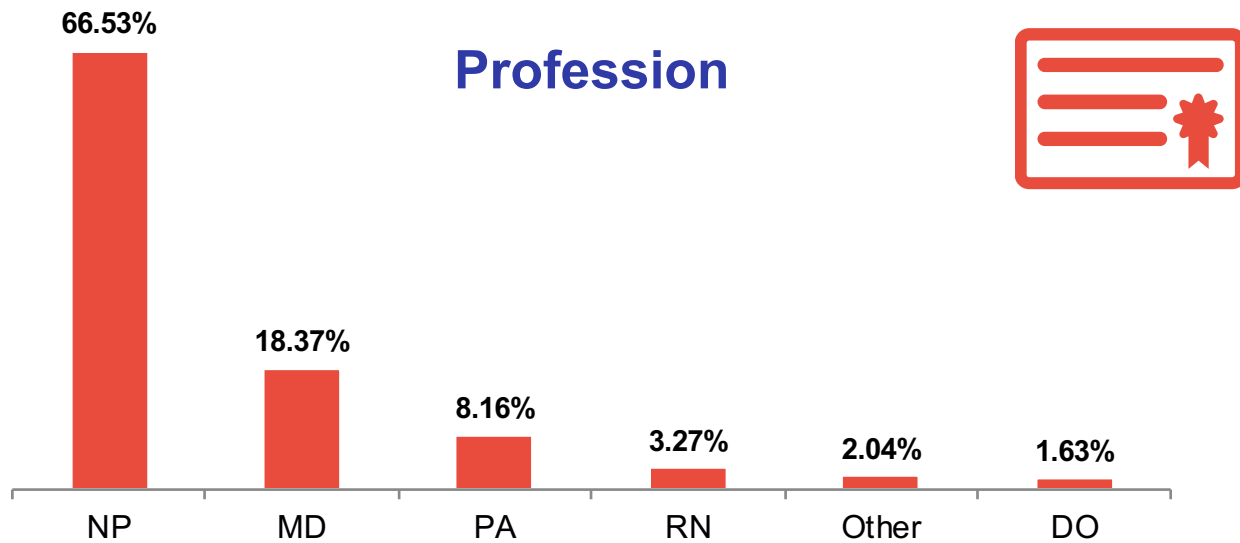
Patient Care Focus: 91%

## Patients seen each week, in any clinical setting:

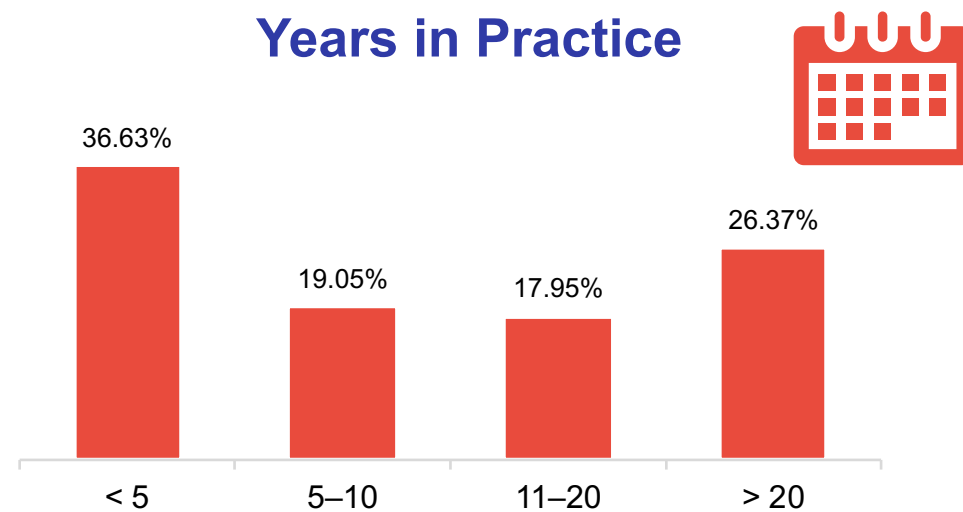


Average number of patients seen each week per clinician: 48

## Profession



## Years in Practice

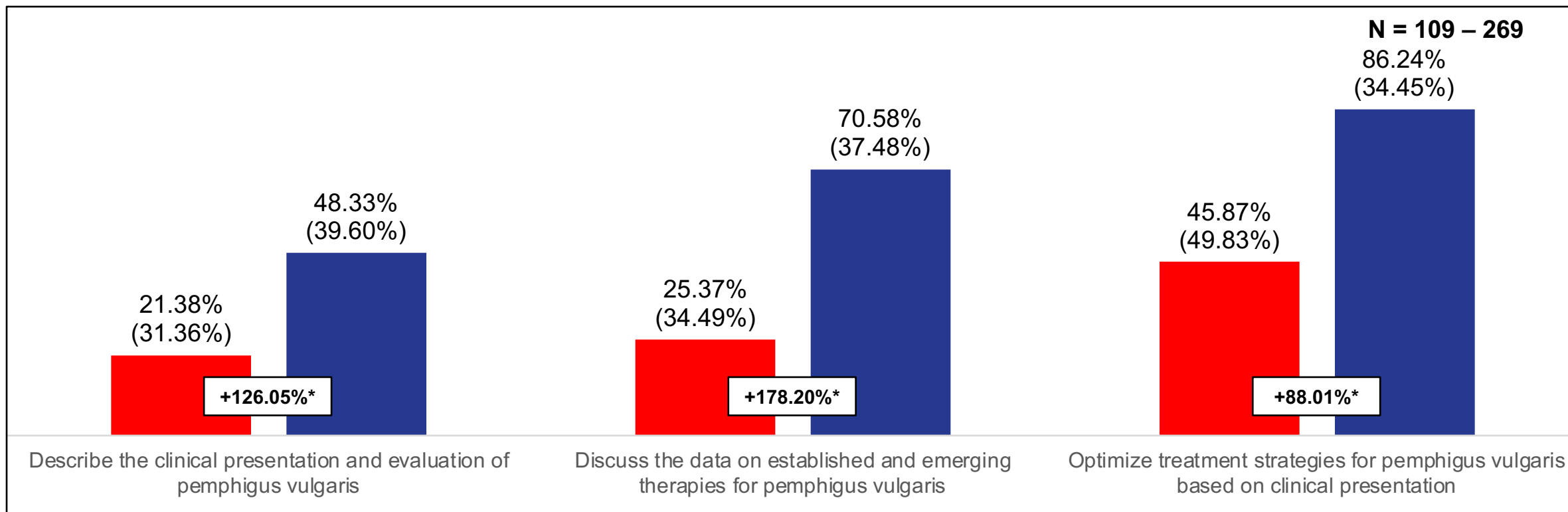




**Level 2-5:  
Outcomes Metrics**

# Learning Objectives Analysis

Pre-Test  
Post-Test



- ❖ On all three curriculum Learning Objectives, learners achieved substantial and significant improvements from low Pre-Test scores at Post-Test
- ❖ Post-Test scores remained low in describing the clinical presentation and evaluation of PV, due to low scores on both the knowledge and the competence item in this area

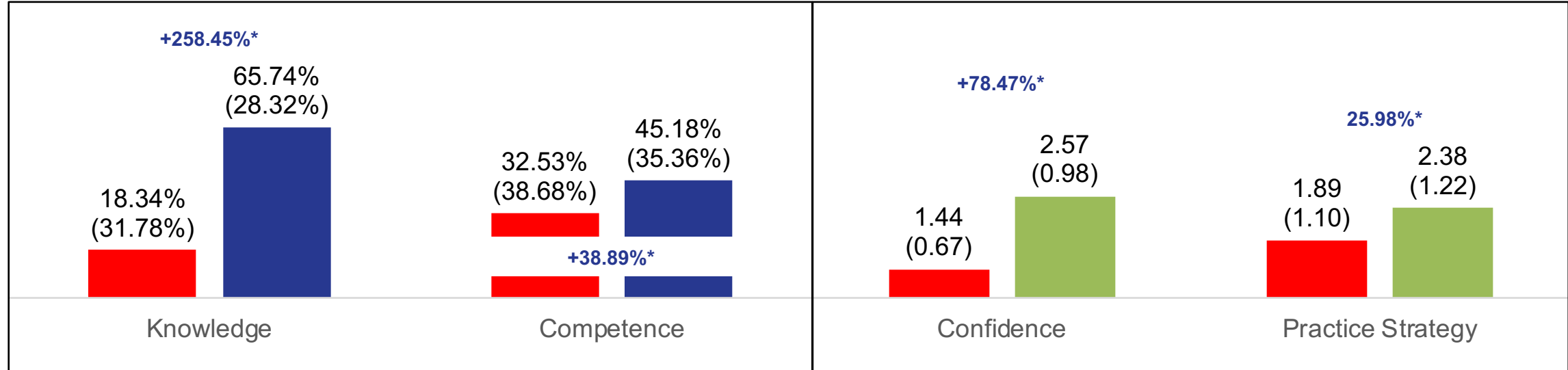
Note: data are matched.

\* indicates significance,  $p < 0.05$ .

# Learning Domain Analysis

Pre-Test Post-Test PCA

(N = 221–269)



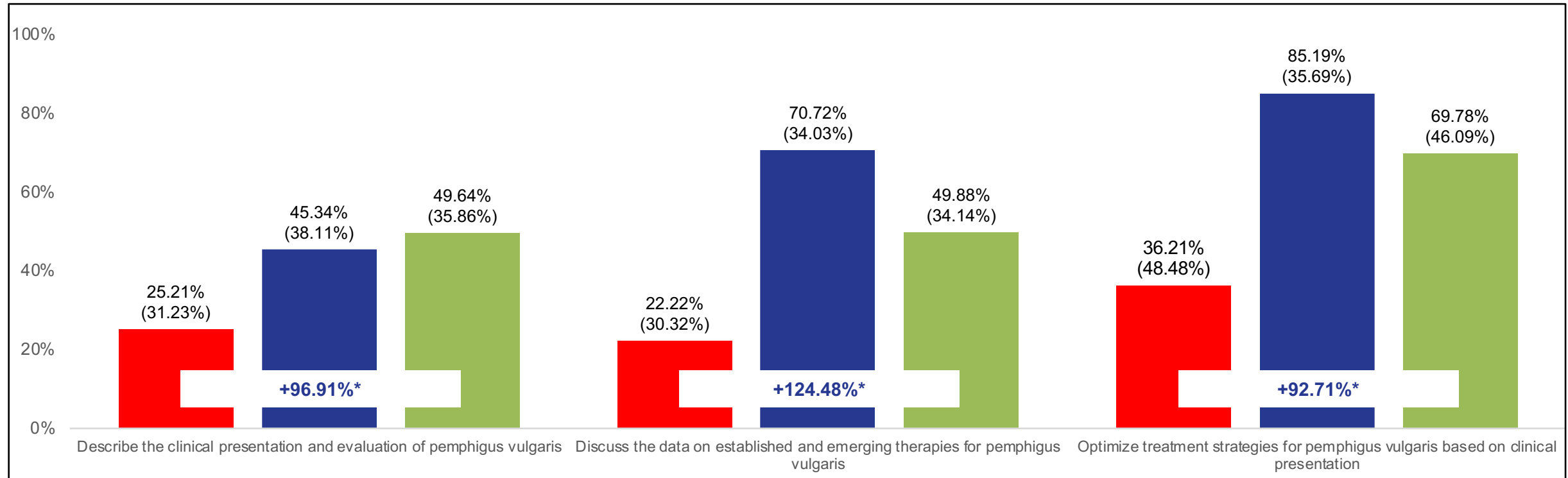
- ❖ Learners demonstrated strong and significant improvements from Pre- to Post-Test in Knowledge and Competence
  - ❖ Moderate Post-Test scores in Knowledge were uniform across all three curriculum Knowledge items
  - ❖ Low Post-Test scores in Competence were due to very low scores (30%) on a case based item where the majority of learners incorrectly identified PV as the diagnosis for the patient, while the correct diagnosis was bullous pemphigoid
- ❖ In Confidence and practice strategy, which were measured at Pre-Test and follow-up, low scores were observed, reflecting a level of confidence and practice behavior consistent with low scores in Knowledge and Competence
  - ❖ A decrease in average practice strategy rating was due to decreases in learners' stated use of high-dose prednisone as monotherapy to manage patients with PV

\*significant at the  $p \leq 0.05$  level, matched data

# Learning Objectives Retention Analysis

Pre-Test Post-Test PCA

(N = 139)



- ❖ Substantial and significant gains were measured in all three curriculum Learning Objectives, from Pre-Test to the Post Curriculum Assessment (PCA), which learners were prompted to take four to six weeks after the activity
- ❖ Though Post-Test scores were low, learners continued to improve by the PCA in describing the clinical presentation of PV
- ❖ On the other two Learning Objectives, score decreases from Post-Test to PCA were measured to low and moderate values (50% and 70%), reflecting the need for additional reinforcement in emerging therapies and optimizing treatment strategies for PV

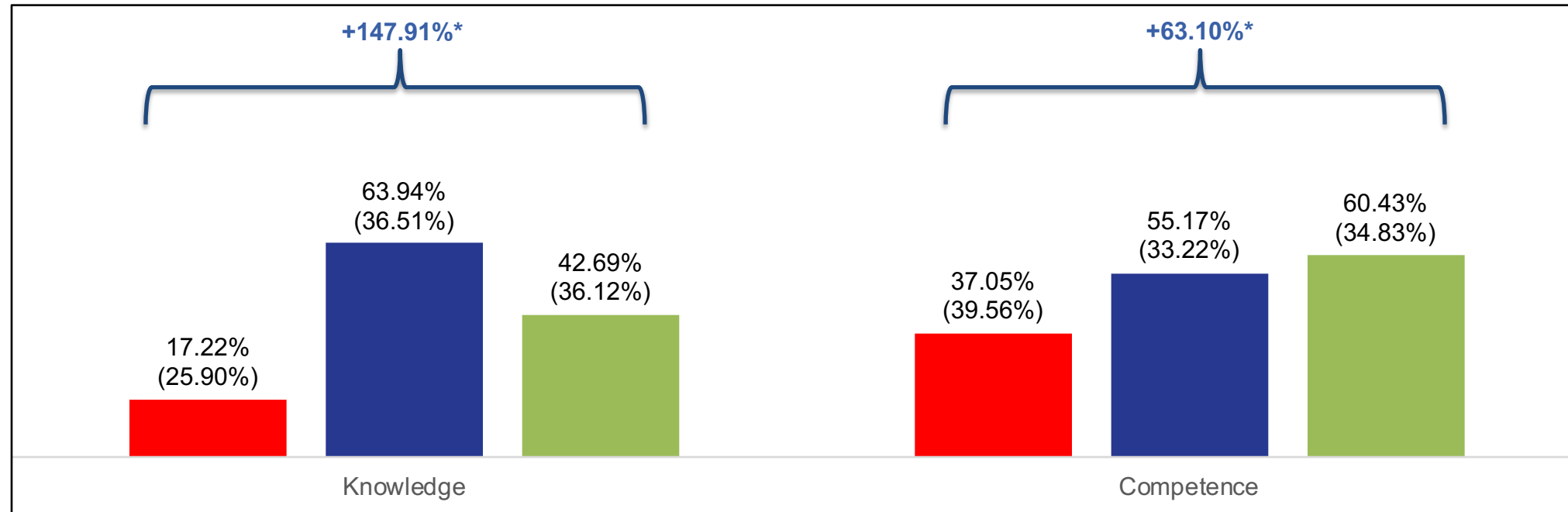
*Note: data is matched; learners with a score for the given domain on both the Pre-Test and PCA are included*

*\*significant at the  $p \leq 0.05$  level*

# 4-Week Retention Analysis: Learning Domains

Pre-Test Post-Test PCA

(N = 139)



At follow-up:

- ❖ A statistically significant net gain was measured from Pre-Test to the Post Curriculum Assessment (PCA) in both Knowledge (148%) and Competence (63%)
- ❖ Competence scores continued to increase from Post-Test to the PCA, while Knowledge scores fell, illustrating an opportunity for further declarative and fact based reinforcement in this area

*Note: data is matched; learners with a score for the given domain on both the Pre-Test and PCA are included*

*\*significant at the  $p \leq 0.05$  level*



## Cohort Comparison by Profession: Learning Objectives

Learning Objective	Nurse Practitioners				Physicians			
	<i>N</i>	Pre-Test	Post-Test	% Change	<i>N</i>	Pre-Test	Post-Test	% Change
Describe the clinical presentation and evaluation of pemphigus vulgaris	120	20.00% (29.15%)	47.50% (39.18%)	+137.50%*	43	26.74% (34.69%)	53.49% (37.96%)	+100.04%*
Discuss the data on established and emerging therapies for pemphigus vulgaris	111	19.67% (30.53%)	69.97% (34.93%)	+255.72%*	41	29.27% (36.40%)	79.67% (37.99%)	+172.19%*
Optimize treatment strategies for pemphigus vulgaris based on clinical presentation	50	36.00% (48.00%)	84.00% (36.66%)	+133.33%*	20	60.00% (48.99%)	90.00% (30.00%)	+50.00%*

- ❖ Both nurse practitioners and physicians demonstrated substantial and significant improvements, from Pre- to Post-Test, on all three curriculum Learning Objectives
- ❖ For all three Learning Objectives, physicians had moderately higher Pre- and Post-Test scores, compared to nurse practitioners

## Cohort Comparison by Profession: Learning Domain

Learning Domain	Nurse Practitioners				Physicians			
	N	Pre-Test	Post-Test	% Change	N	Pre-Test	Post-Test	% Change
Knowledge	118	13.98% (24.26%)	66.24% (32.36%)	+373.82%*	44	20.83% (33.36%)	74.24% (37.01%)	+256.41%*
Competence	110	31.82% (39.15%)	39.09% (41.77%)	+22.85%*	43	39.53% (41.14%)	52.33% (44.40%)	+32.38%*

- ❖ Nurse practitioners and physicians both achieved significant improvements in both Knowledge and Competence, from Pre- to Post-Test
- ❖ Physicians had higher Pre- and Post-Test scores than nurse practitioners in both Knowledge and Competence

## Identified Learning Gap, 1 of 3: *Clinical presentation and diagnosis of PV*

On a Knowledge and a Competence item, learners struggled to correctly identify the presentation of PV in a clinical setting, both on skin biopsy and in imaging.

**Knowledge: On indirect immunofluorescence, pemphigus vulgaris is always characterized by positive staining for which of the following?**

### **Results:**

- At Post-Test, only 62% of learners correctly answered: “Desmoglein 3”

**Competence: An 84-year-old man presents with blisters and erosions on the trunk and extremities. He has no relevant medical history and takes no medications. Skin biopsy is performed, which shows splitting at the dermo-epidermal junction. Based on these findings, which of the following is the most likely diagnosis?**

### **Results:**

- At Post-Test, only 30% of learners correctly answered: “Bullous pemphigoid”
- At Post-Test, 59% of learners **incorrectly** answered: “Pemphigus vulgaris”

## Identified Learning Gap, 2 of 3:

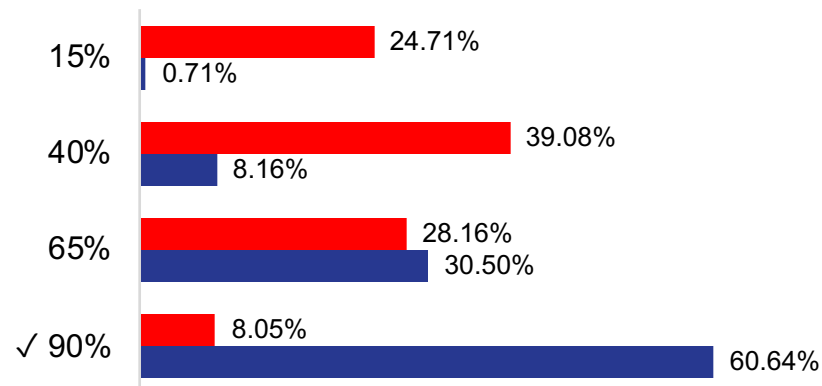
### *Remission of pemphigus in patients treated with rituximab in addition to prednisone*

On a Knowledge item discussing the outcome of clinical trials on the addition of rituximab to existing prednisone therapy for PV patients, learners struggled at Post-Test to correctly identify the rate of remission for this treatment.

**Knowledge:** In a randomized trial in patients with pemphigus that compared rituximab plus prednisone to prednisone alone, approximately what percentage of subjects in the rituximab group achieved remission?

#### Results:

- At Post-Test, only 61% of learners correctly answered: “90%”



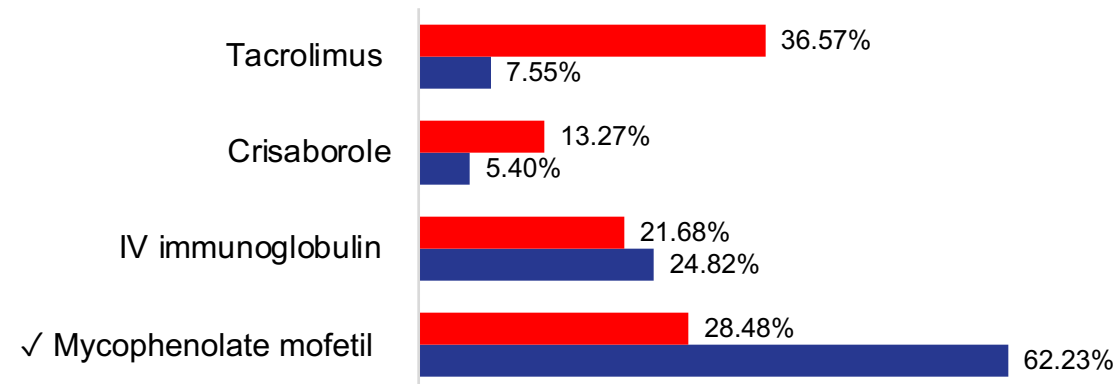
## Identified Learning Gap, 3 of 3: *Efficacy and side effects of mycophenolate mofetil*

On a Knowledge item, learners struggled to correctly identify mycophenolate mofetil as an effective treatment option for PV with increased infection risk as a key side effect.

**Knowledge: Which of the following agents has demonstrated efficacy for the treatment of pemphigus vulgaris and has a key side effect of increased infection risk?**

### Results:

- At Post-Test, only 62% of learners correctly answered: "Mycophenolate mofetil"



# Overall Educational Impact

- ❖ Significant increases in score were measured in both Knowledge and Competence, from Pre- to Post-Test
  - The highest Post-Test scores (88%) were on a Competence item asking learners to identify the most appropriate first-line therapy for a patient presenting with lesions covering much of her body and a biopsy and ELISA identifying PV
  - Knowledge scores were uniformly low at Post-Test (61% to 62%)
  - Significant increases on all curriculum Learning Objectives were measured from Pre-Test to Post-Test
    - These improvements were sustained at follow-up, with scores in describing the clinical presentation and evaluation of PV increasing between Post-Test and PCA
  - Confidence and practice strategy ratings, measured at Pre-Test and PCA, were low, reflecting learner confidence and practice behavior consistent with low scores in Knowledge and Competence. There was improvement in confidence at the PCA but participants remain unclear on the appropriateness of high-dose prednisone monotherapy to manage patients with Pemphigus Vulgaris
- ❖ The analysis of scored items in the curriculum identified a **three persistent learning gaps related to clinical presentation and diagnosis of PV, remission of pemphigus in patients treated with rituximab in addition to prednisone, and efficacy and side effects of mycophenolate mofetil. These should be addressed in future activities.**
  - Learners struggled on a Knowledge item and a Competence item to correctly identify the presentation of PV in a clinical setting, by biopsy and imaging
  - On a Knowledge item discussing the outcome of clinical trials on the addition of rituximab to existing prednisone therapy, learners struggled to identify the rate of remission
  - On another Knowledge item, learners struggled to correctly identify mycophenolate mofetil as an effective treatment for PV with increased infection risk

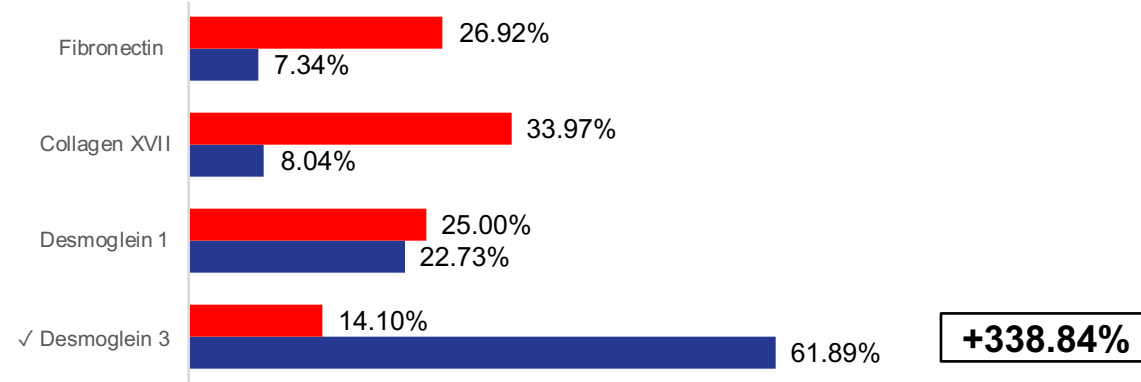
# Appendix

# Knowledge Items

Pre-Test  
Post-Test

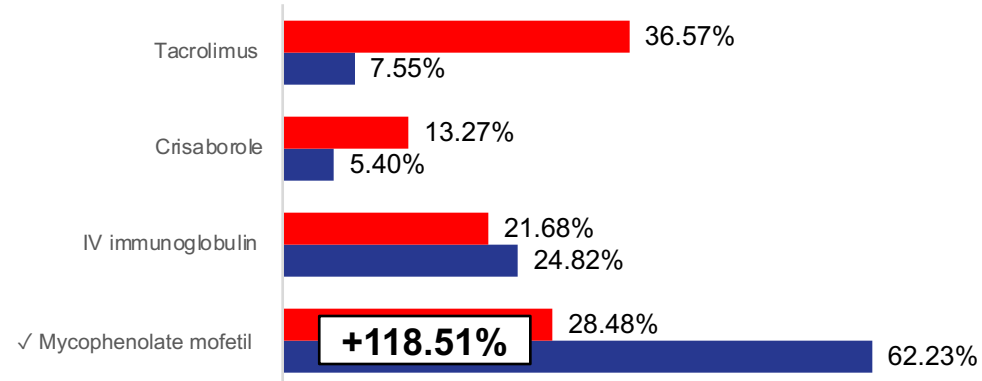
On indirect immunofluorescence, pemphigus vulgaris is always characterized by positive staining for which of the following?

N = 286 – 312



Which of the following agents has demonstrated efficacy for the treatment of pemphigus vulgaris and has a key side effect of increased infection risk?

N = 278 – 309



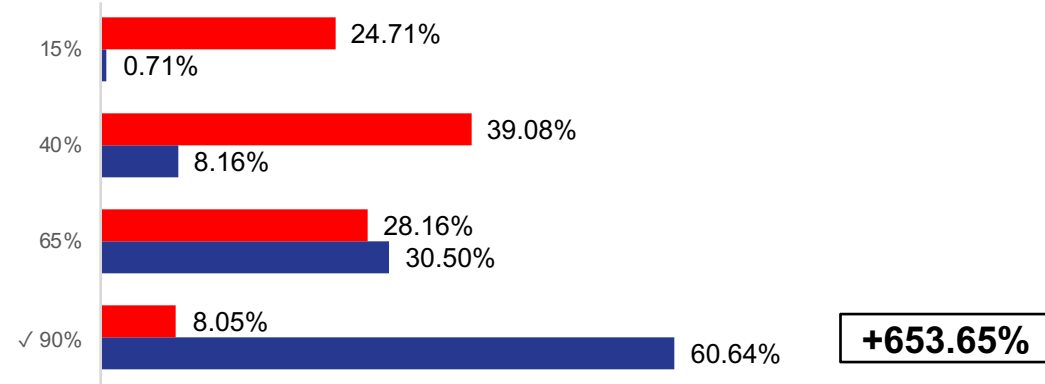


# Knowledge Items

Pre-Test  
Post-Test

In a randomized trial in patients with pemphigus that compared rituximab plus prednisone to prednisone alone, approximately what percentage of subjects in the rituximab group achieved remission?

N = 174 – 282

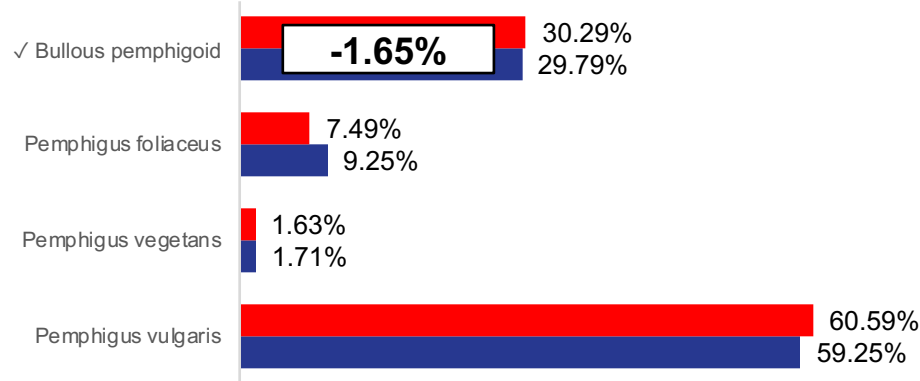


# Competence Items

Pre-Test  
Post-Test

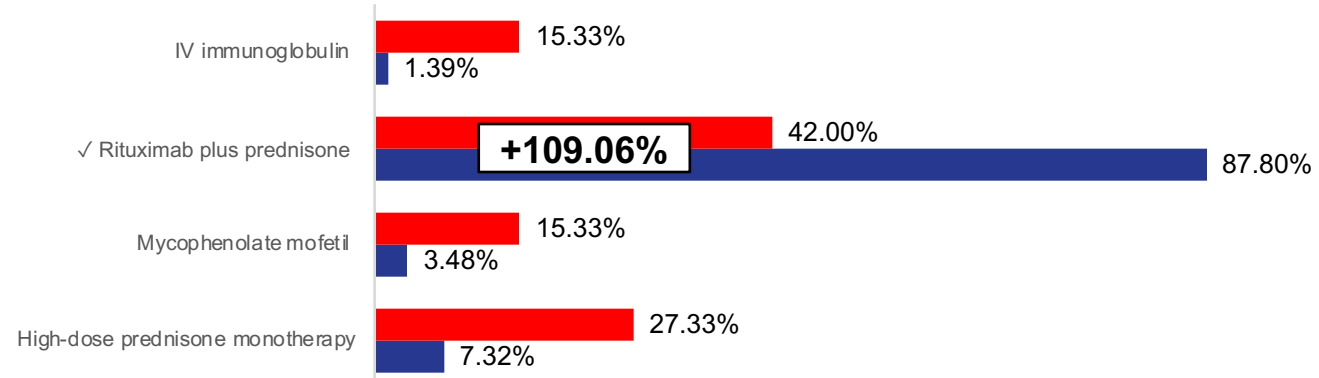
An 84-year-old man presents with blisters and erosions on the trunk and extremities. He has no relevant medical history and takes no medications. Skin biopsy is performed, which shows splitting at the dermo-epidermal junction. Based on these findings, which of the following is the most likely diagnosis?

N = 292 – 307



A 33-year-old woman presents with lesions in her mouth and on her lips, trunk, and upper thighs. She reports significant pain and notes that she cannot brush her teeth. She has no relevant medical history and takes no medications. Workup, including biopsy and ELISA, identify pemphigus vulgaris. Which of the following should be considered as first-line treatment for this patient?

N = 150 – 287



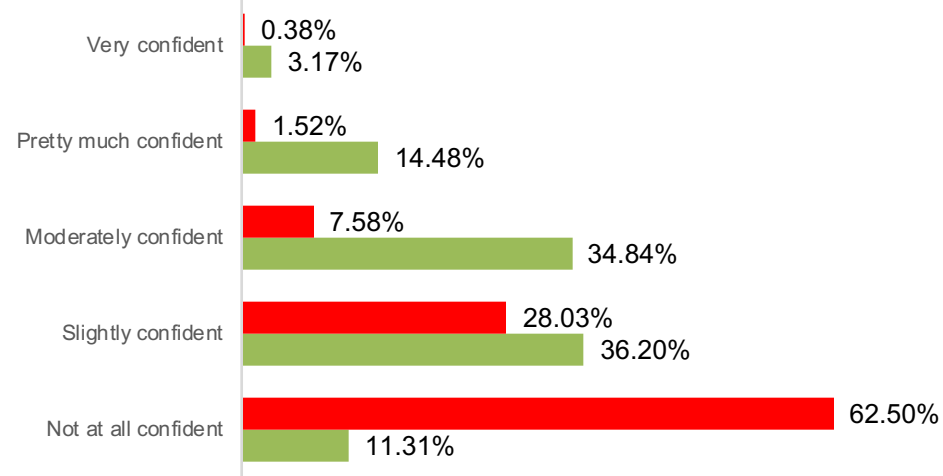
Note: data are matched.  
Correct answer is designated by a ✓.

# Confidence Items

Pre-Test  
PCA

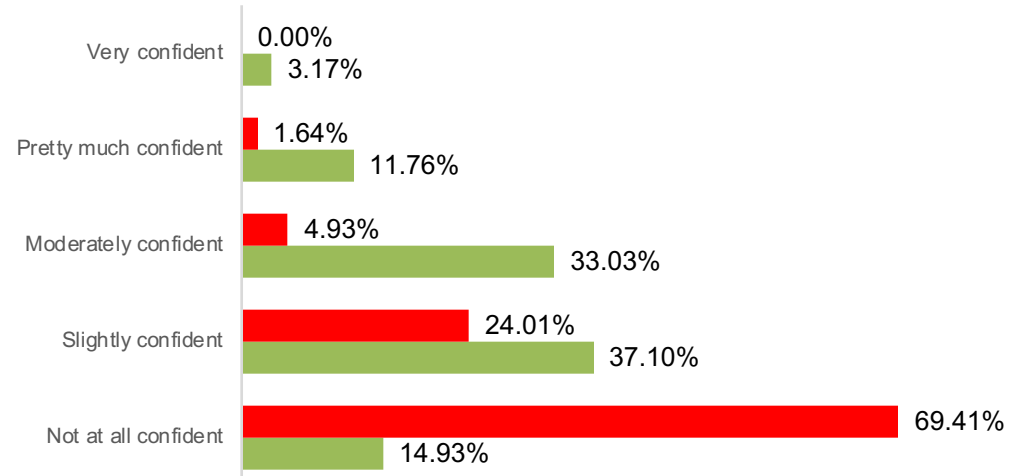
How confident are you in your ability to diagnose Pemphigus Vulgaris?

N = 221 – 264



How confident are you in your ability to manage Pemphigus Vulgaris?

N = 221 – 304



# Practice Strategy Items

Pre-Test  
PCA

How often do you use high-dose prednisone as monotherapy to manage patients with Pemphigus Vulgaris?

N = 221 – 299

