NACE *Conversations* in Primary Care 2019

Final Live Outcomes Report

Improving Outcomes in ADHD: It Can be Done in Primary Care!

Shire • IME-23006

October 23, 2019

RealCME

NACE

Improving Outcomes in ADHD: It Can be Done in Primary Care!

NACE *Conversations* in Primary Care 2019

1,659 Attendees

2 Activities

1,278 certificates issued to date

This education has the potential to impact **1,705,200** patients with ADHD on an annual basis.

26,561-32,792 Weekly

Paired pre/post Responses:
N = 482 – 661
PCA responses
N=410 (24.7%)

2019 Conversations Activity	Date	Participants
Conversations In Primary Care 2019 Episode 1	2/9/19	867
Conversations In Primary Care 2019 Episode 2	3/2/19	792
Total		**1,659**

Speaker

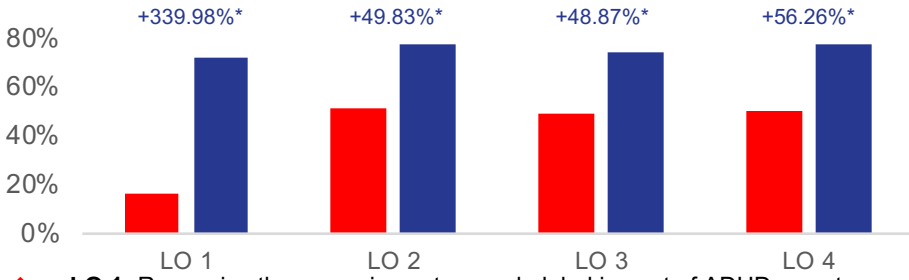
Greg Mattingly, MD
Associate Clinical Professor
Department of Psychiatry
Washington University School of Medicine
St. Louis, MO

Improving Outcomes in ADHD: It Can be Done in Primary Care!

COURSE SUMMARY

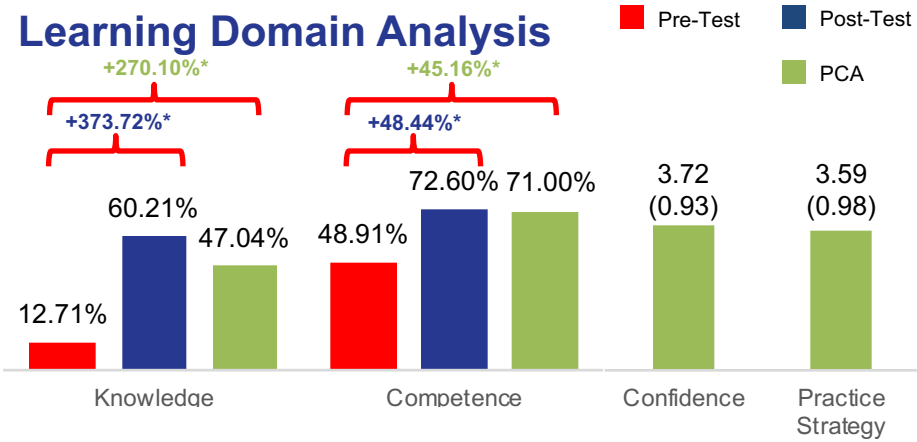
Cost: Free
Start Date: 02/19/2019
Expiration Date: 02/18/2020
Target Audience: Primary Care Physicians, Nurse Practitioners, Physician Assistants
Format: Webcast
Estimated Time To Complete CME Activity: 1.0
Credits: 1.0 *AMA PRA Category 1 Credit*™ 1.0 AANP Contact hour which includes 0.50 pharmacology hours
Hardware/Software Requirements: Any web browser

Learning Gains Across Objectives



- **LO 1:** Recognize the pervasive nature and global impact of ADHD symptoms throughout the day
- **LO 2:** Describe the physical and psychologic morbidity and mortality associated with ADHD
- **LO 3:** Use ADHD assessment tools to aid in diagnosis, track, and measure changes in ADHD symptoms to optimize pharmacologic treatment, non - pharmacologic treatment, and symptom control throughout the day 4.
- **LO 4:** Implement appropriate and individualized treatment regimens for patients with ADHD

Learning Domain Analysis



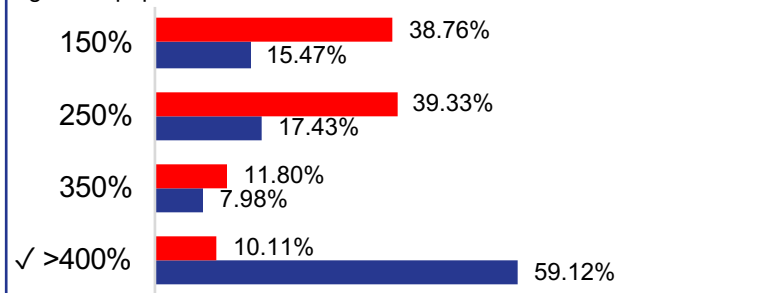
- A substantial and statistically significant net gain was measured from Pre-Test to the Post Curriculum Assessment (PCA) in both Knowledge (270%) and Competence (45%)
- Learners achieved very strong improvements in Knowledge, from uniformly low scores on Knowledge items at Pre-Test, at Post-Test and PCA
- Competence was well retained, with no meaningful change in score from Post-Test to PCA
- Confidence and practice strategy scores, collected at follow-up, were moderate

Persistent Learning Gaps/Needs

Diagnosis of ADHD in adult patients
On a Knowledge item on use of a rating scale to evaluate and monitor patients with ADHD and possible ADHD, Post-Test scores were low.

Mortality risk of patients with ADHD
On a Knowledge item on the mortality rate for adults with ADHD, learners continued to underestimate the extent of elevated risk at Post-Test.

In a Danish registry study, what was the approximate mortality percentage rate ratio for adults with ADHD, compared to the general population?



Therapy intensification for adult ADHD patients
On a Competence item presenting the case of a newly diagnosed adult patient with ADHD, learners struggled at Post-Test to identify the most appropriate modification to his therapy.

A 41-year-old man who was diagnosed with ADHD 6 months ago presents for a checkup. He reports improved symptoms of distractibility and forgetfulness since starting treatment with mixed amphetamine extended-release (2 beads). However, he notes persistent trouble focusing at work in the afternoons. What might be appropriate at this time?
At Post-Test, only 61% of learners correctly answered: "Add a third bead of mixed amphetamine"

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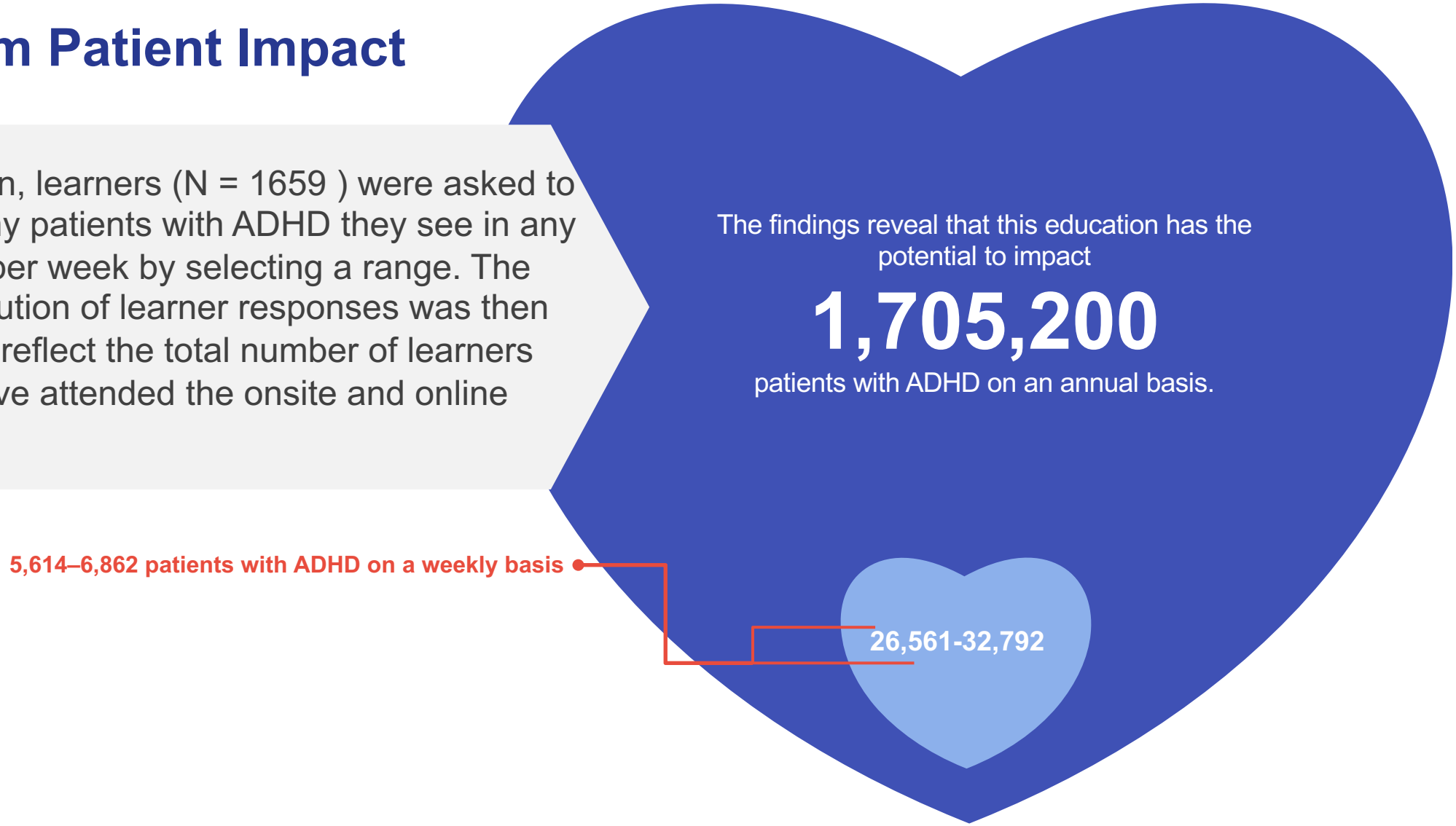
Curriculum Patient Impact

In the evaluation, learners (N = 1659) were asked to report how many patients with ADHD 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 (1,659) who have attended the onsite and online meetings.



Course Director

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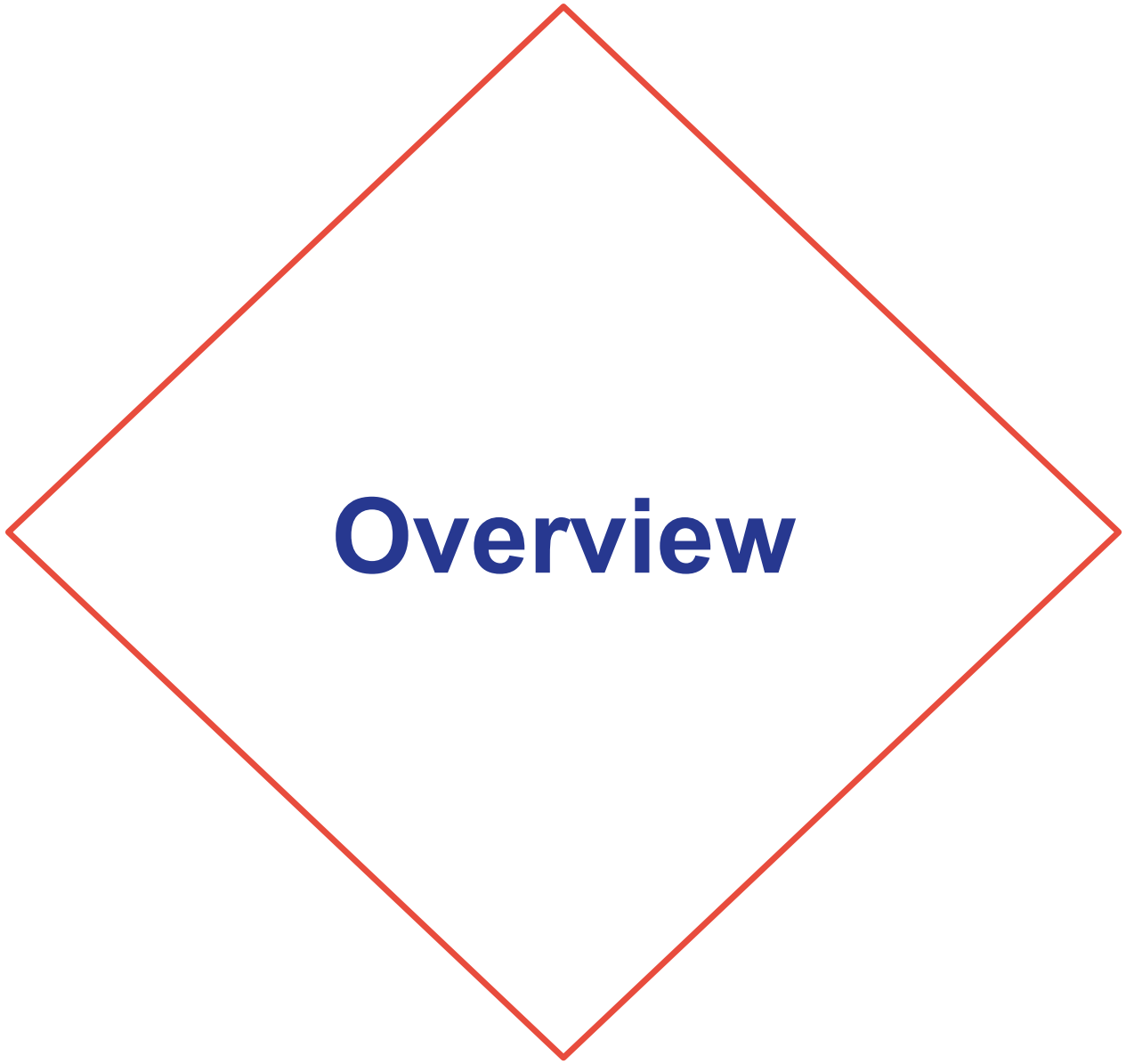
Commercial Support

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

- Actelion Pharmaceuticals US, Inc.
- Intercept Pharmaceuticals
- Avanir Pharmaceuticals
- Takeda Pharmaceuticals U.S.A., Inc. and Lundbeck
- Novo Nordisk, Inc.
- Intercept Pharmaceuticals, Inc.
- Sanofi Genzyme and Regeneron Pharmaceuticals
- Sanofi US and Regeneron Pharmaceuticals
- Shire
- Lilly USA, LLC


Overview

Learning Objectives

- Recognize the pervasive nature and global impact of ADHD symptoms throughout the day
- Describe the physical and psychologic morbidity and mortality associated with ADHD
- Use ADHD assessment tools to aid in diagnosis, track, and measure changes in ADHD symptoms to optimize pharmacologic treatment, non - pharmacologic treatment, and symptom control throughout the day
- Implement appropriate and individualized treatment regimens for patients with ADHD

NACE *Conversations* in Primary Care 2019

2019 Curriculum Overview

Three Live Virtual CME Symposia

Enduring CME Symposium Webcast

https://www.naceonline.com/courses/improving-outcomes-in-adhd-it-can-be-done-in-primary-care

Speaker

Improving Outcomes in ADHD: It Can be Done in Primary Care!

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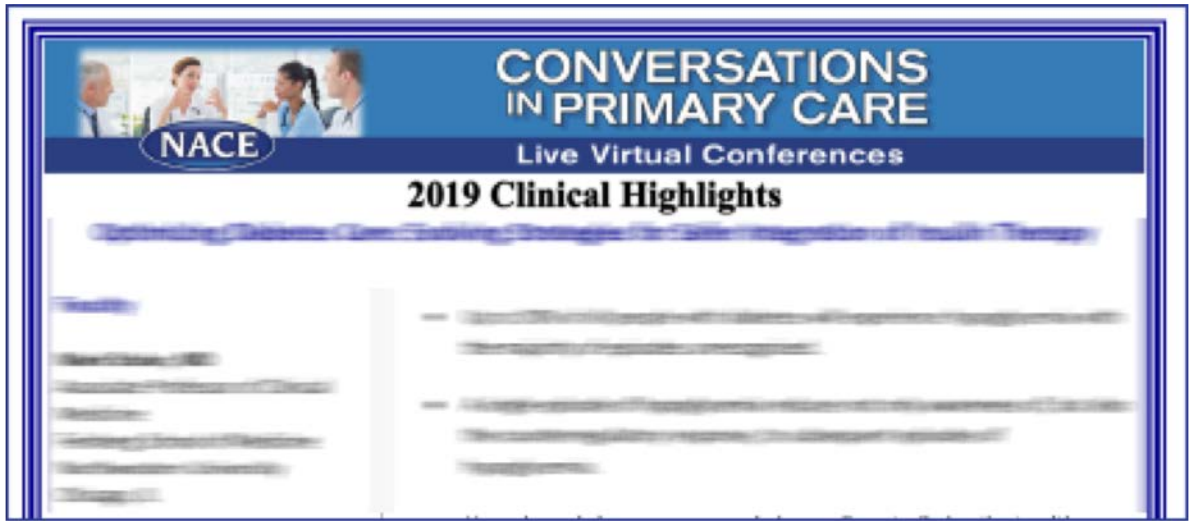
Hardware/Software Requirements: Any web browser

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
Percentage change	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
P value (p)	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
Effect size (d)	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
Power	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
Percentage non-overlap	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

Participation

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Level 1
Participation
Demographics
Patient Reach

Participation

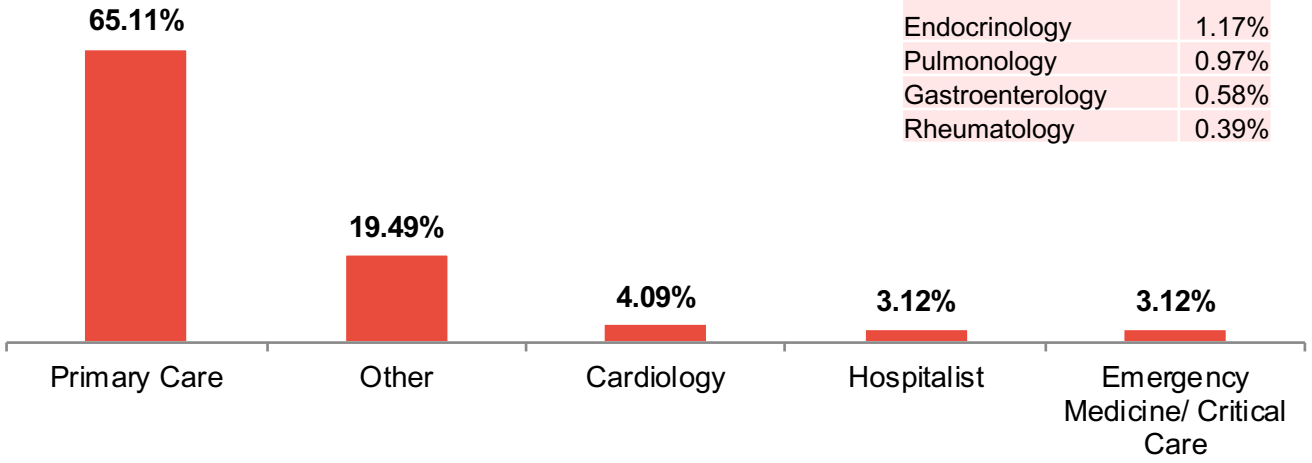
1,659
Total Attendees

2 Activities

N = 655

Level 1: Demographics and Patient Reach

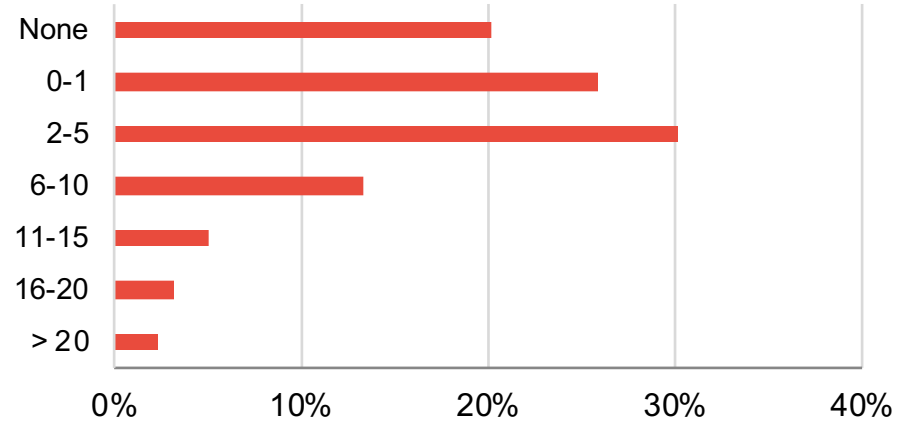
Specialty



Under 2%	
Neurology/Psychiatry	1.95%
Endocrinology	1.17%
Pulmonology	0.97%
Gastroenterology	0.58%
Rheumatology	0.39%

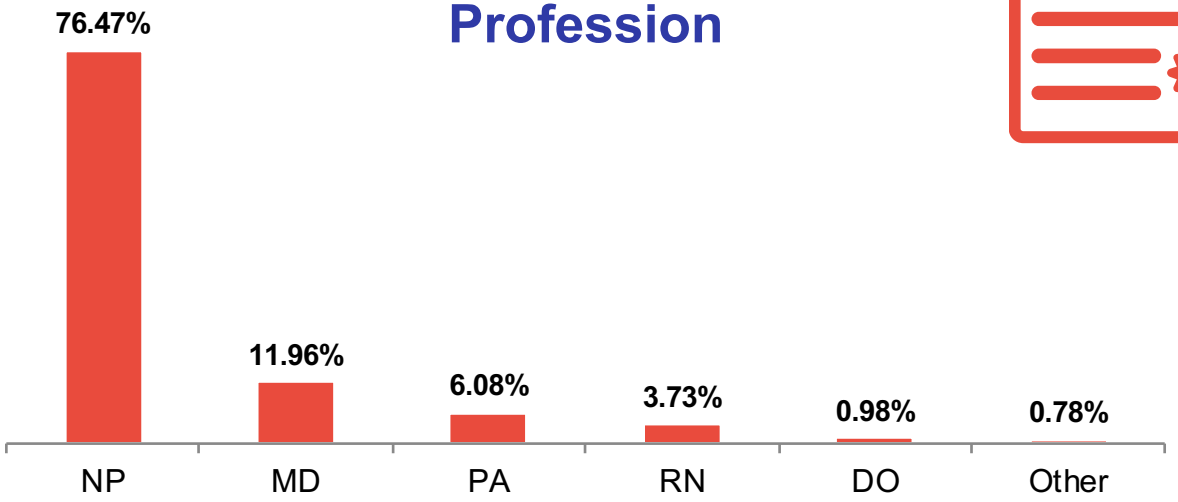
Patient Care Focus: 94%

Patients with ADHD seen each week, in any clinical setting:

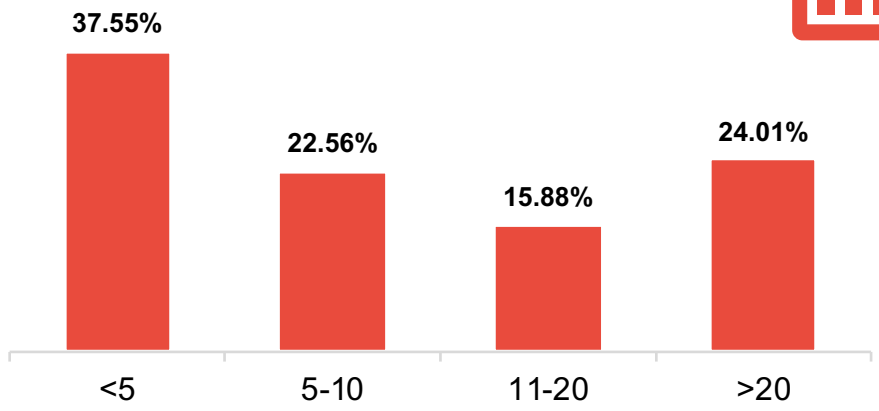


Average number of patients with ADHD seen each week per clinician: 4

Profession

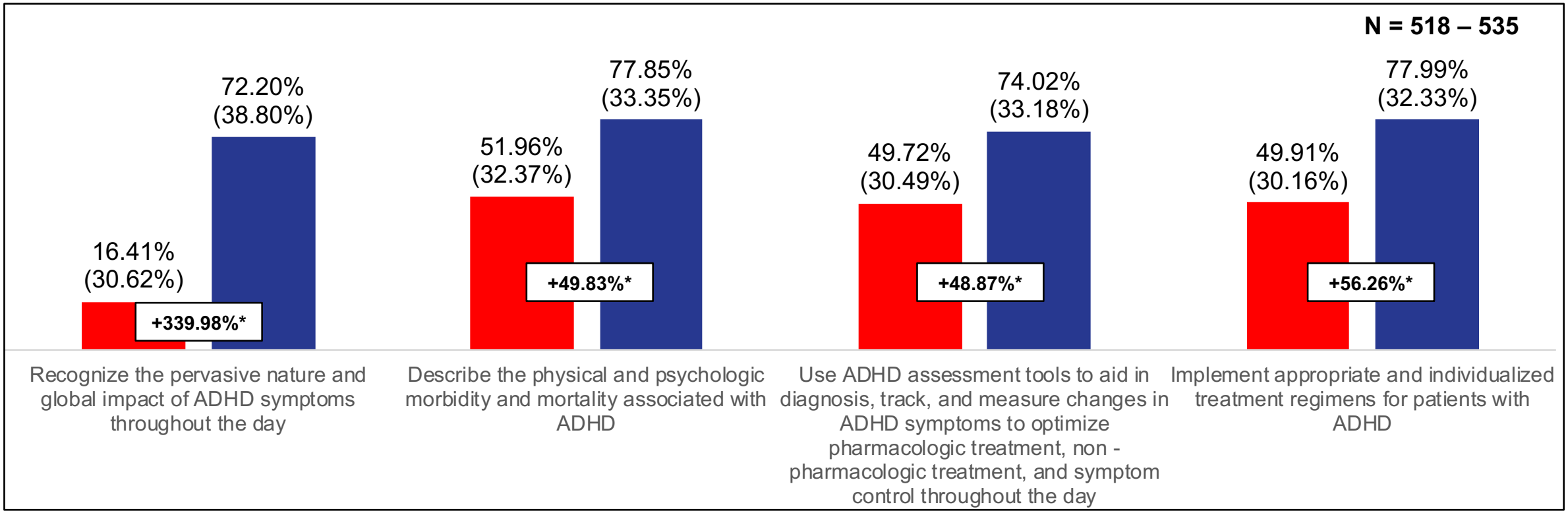


Years in Practice



Level 2-5:
Outcomes Metrics

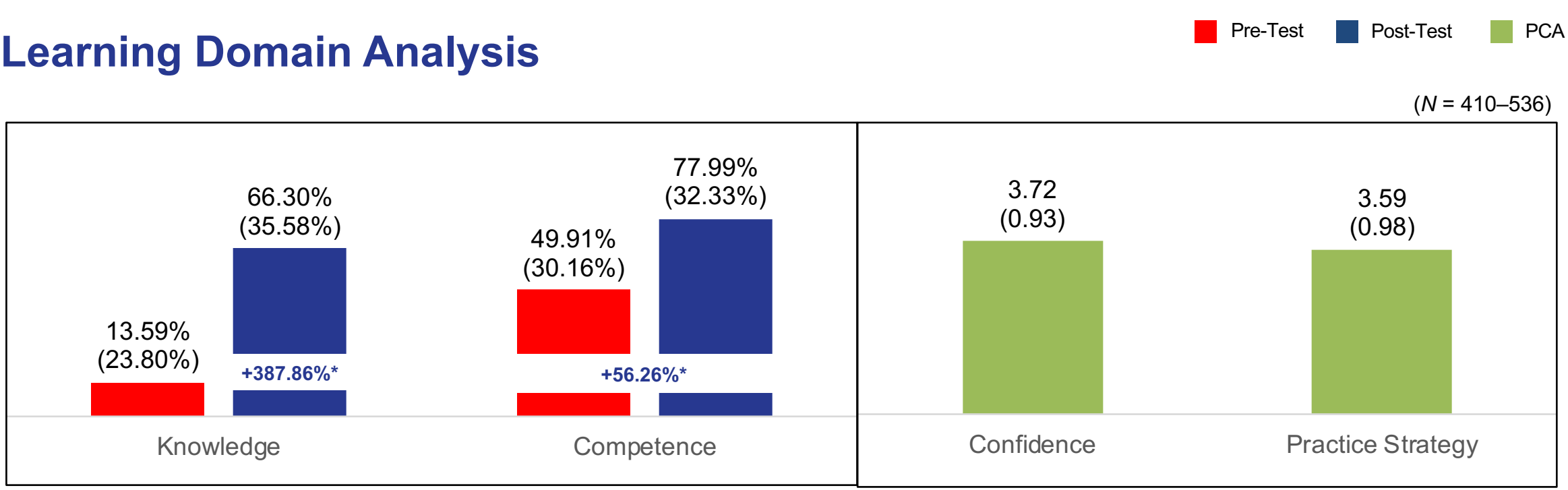
Learning Objectives Analysis



- Substantial and significant improvements in score on all four curriculum Learning Objectives were measured, from Pre- to Post-Test
- The strongest score increases (of 340%) were measured in recognizing the pervasive nature and global impact of ADHD symptoms, due to gains on both a Knowledge item on ADHD symptoms (+209%) and on a Competence item on drug therapy intensification (+458%)

Note: data are matched.
* indicates significance, $p < 0.05$.

Learning Domain Analysis

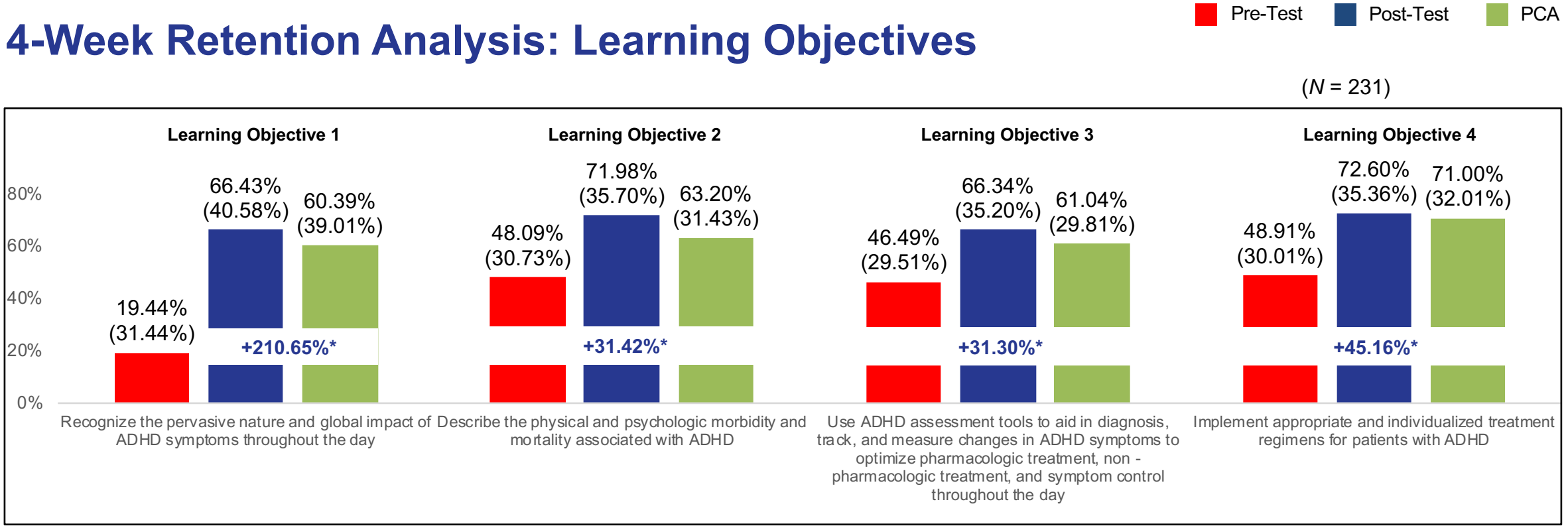


- A substantial and statistically significant net gain was measured from Pre- to Post-Test in both Knowledge (388%) and Competence (56%)
- Learners achieved very strong improvement (374%) in Knowledge, from uniformly low scores on all three Knowledge items (8% to 25%) at Pre-Test
- Pre- and Post-Test scores (84% and 89%) on a Competence item on ADHD screening were much higher than those on the other (11% to 61%), on intensification of drug therapy
- Scores in Confidence and practice strategy, collected only at follow-up, were moderate

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

significant at the p ≤ 0.05 level, matched data

4-Week Retention Analysis: Learning Objectives

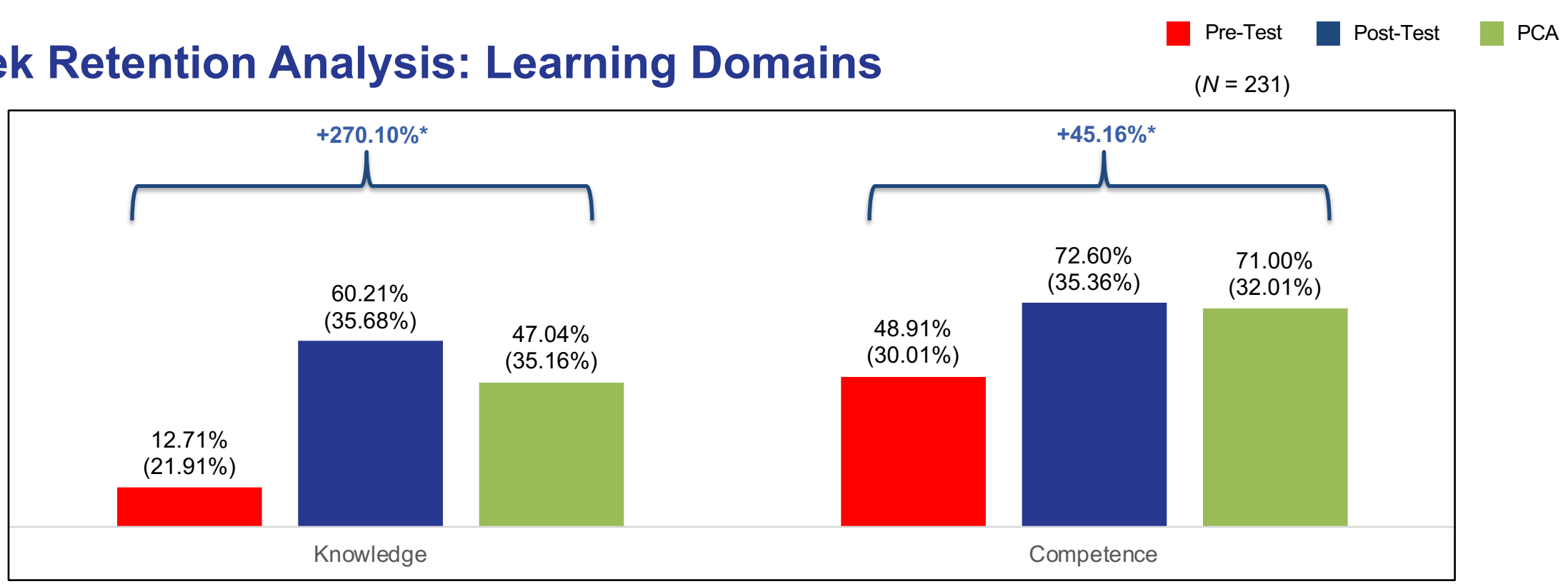


- In addition to collecting Confidence and Practice data for the curriculum, the Post Curriculum Assessment (PCA) repeated questions from the Knowledge and Competence domains
- On all four curriculum Learning Objectives, significant gain were retained from Pre-Test to the PCA
- Some slippage in score on all four Objectives following the Post-Test was measured to low and moderate (60% to 71%) PCA scores, reflecting a need for additional 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 ≤ 0.05 level**

4-Week Retention Analysis: Learning Domains



At follow-up:

- A substantial and statistically significant net gain was measured from Pre-Test to the Post Curriculum Assessment (PCA) in both Knowledge (270%) and Competence (45%)
- Learners achieved very strong improvement (270%) in Knowledge on the PCA, from uniformly low scores on Knowledge items at Pre-Test
- Competence was well retained, with no meaningful change in score from Post-Test to PCA

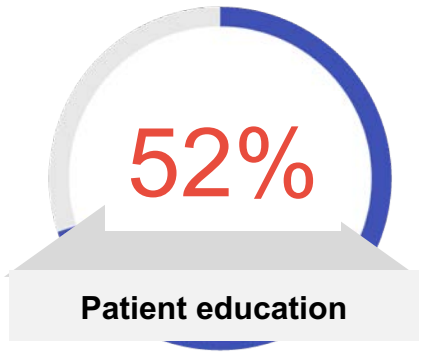
Note: data is matched; learners with a score for the given domain on both the Pre-Test and PCA are included

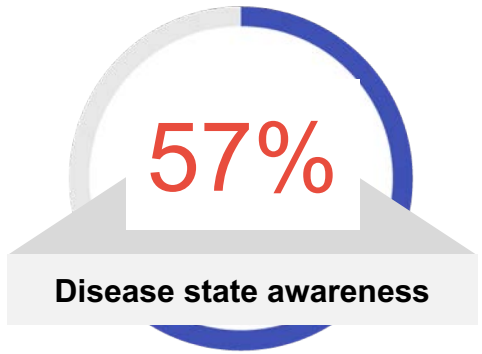
***significant at the p ≤ 0.05 level**

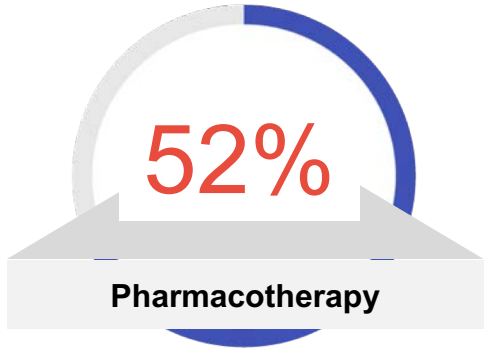
(4-week Post Assessment)

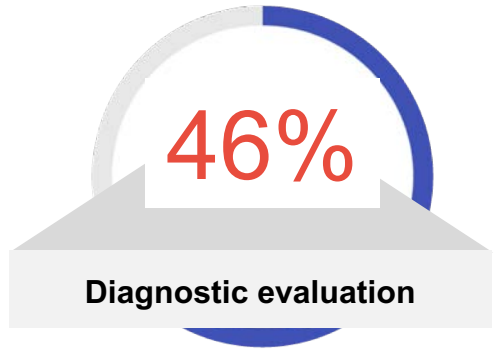
Please select the specific areas of *skills, or practice behaviors*, you have improved regarding the treatment of patients with ADHD since this CME activity. (Select all that apply.)

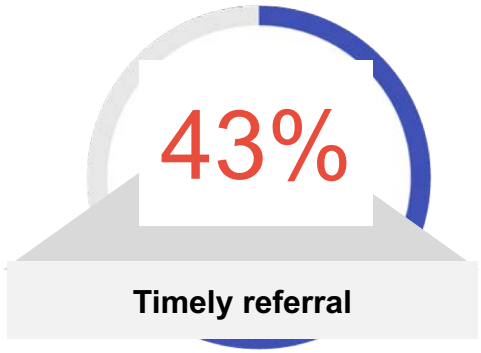
N=408

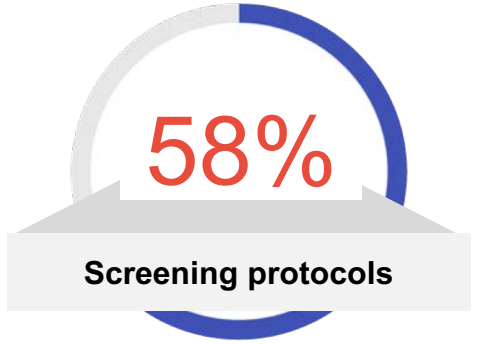


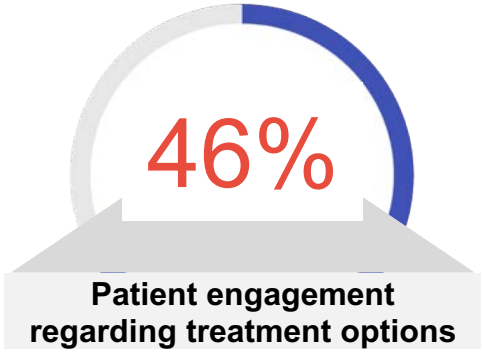








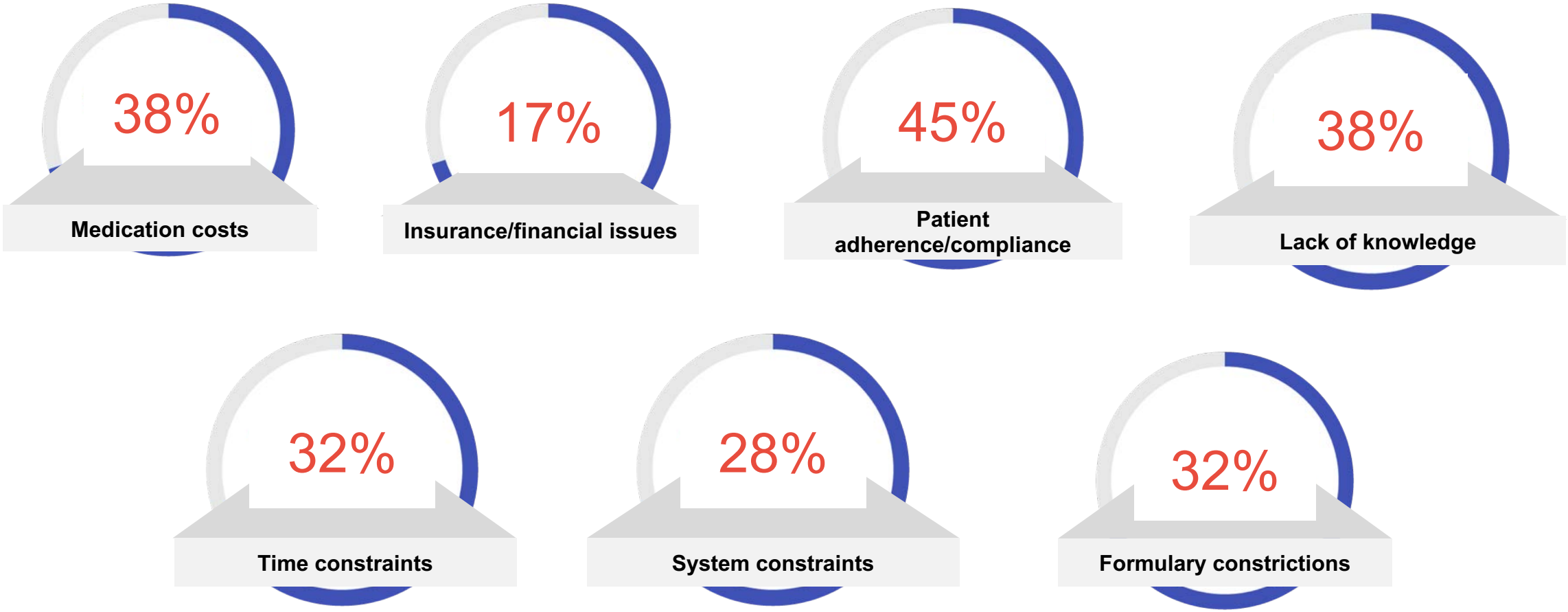




(4-week Post Assessment)

What specific *barriers* have you encountered that may have prevented you from successfully implementing strategies for patients with ADHD since this CME activity? (Select all that apply.)

N=408



Cohort Comparison by Profession: Learning Objectives

Learning Objective	Nurse Practitioners				Physicians			
	N	Pre-Test	Post-Test	% Change	*N*	Pre-Test	Post-Test	% Change
Recognize the pervasive nature and global impact of ADHD symptoms throughout the day	227	15.42% (30.49%)	71.81% (39.52%)	+365.69%*	45	22.22% (34.25%)	81.11% (33.81%)	+265.03%*
Describe the physical and psychologic morbidity and mortality associated with ADHD	232	54.74% (30.43%)	80.39% (31.37%)	+46.86%*	48	52.08% (32.21%)	83.33% (31.18%)	+60.00%*
Use ADHD assessment tools to aid in diagnosis, track, and measure changes in ADHD symptoms to optimize pharmacologic treatment, non - pharmacologic treatment, and symptom control throughout the day	232	51.72% (27.80%)	76.29% (31.46%)	+47.51%*	47	47.87% (30.87%)	73.40% (33.98%)	+53.33%*
Implement appropriate and individualized treatment regimens for patients with ADHD	236	52.12% (28.67%)	79.87% (30.32%)	+53.24%*	47	48.94% (30.05%)	86.17% (28.62%)	+76.07%*

- Nurse practitioners and physicians both demonstrated strong and statistically significant improvements on all four curriculum Learning Objectives, from Pre- to Post-Test
- Physicians had greater gains on all Objectives except recognizing the pervasive nature and global impact of ADHD symptoms, compared to nurse practitioners

Cohort Comparison by Profession: Learning Domains

Learning Domain	Nurse Practitioners				Physicians			
	N	Pre-Test	Post-Test	% Change	*N*	Pre-Test	Post-Test	% Change
Knowledge	221	12.22% (22.18%)	65.99% (34.09%)	+440.02%*	44	17.80% (28.29%)	70.83% (34.66%)	+297.92%*
Competence	236	52.12% (28.67%)	79.87% (30.32%)	+53.24%*	47	48.94% (30.05%)	86.17% (28.62%)	+76.07%*

- Nurse practitioners and physicians both demonstrated strong and significant improvements in score in both Knowledge and Competence, from Pre- to Post-Test
- Nurse practitioners had greater improvements in declarative Knowledge, while physicians had greater improvements in Competence

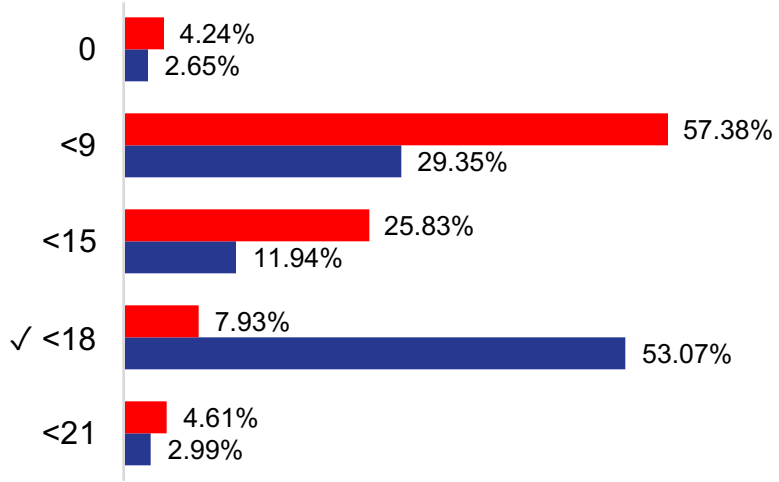
Identified Learning Gap:
Diagnosis of ADHD in adult patients

On a Knowledge items on use of a rating scale to evaluate and monitor patients with ADHD and possible ADHD, Post-Test scores were low.

Knowledge: The ADHD-RS screening tool is useful to monitor treatment of ADHD. To achieve optimal reduction in ADHD symptoms, and minimize functional, impairment, the survey score should be:

Results:

- At Post-Test, only 53% of learners correctly answered: “< 18”



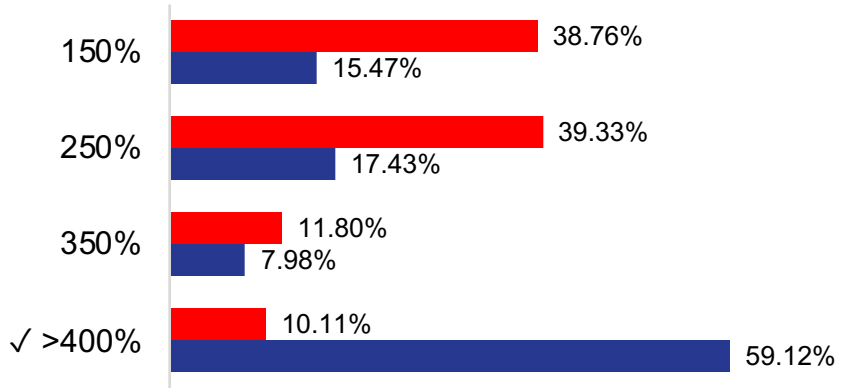
Identified Learning Gap:
Mortality risk of patients with ADHD

On a Knowledge item on the mortality rate for adults with ADHD, learners continued to underestimate the extent of elevated risk at Post-Test.

Knowledge: In a Danish registry study, what was the approximate mortality percentage rate ratio for adults with ADHD, compared to the general population?

Results:

- At Post-Test, only 59% of learners correctly answered: “> 400%”



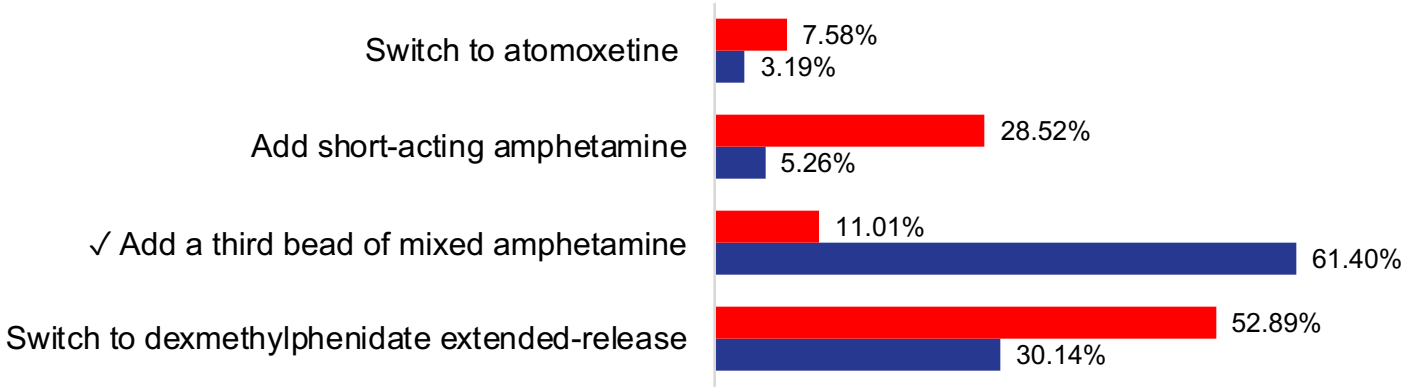
Identified Learning Gap:
Therapy intensification for adult ADHD patients

On a Competence item presenting the case of a newly diagnosed adult patient with ADHD, learners struggled at Post-Test to identify the most appropriate modification to his therapy.

Competence: A 41-year-old man who was diagnosed with ADHD 6 months ago presents for a checkup. He reports improved symptoms of distractibility and forgetfulness since starting treatment with mixed amphetamine extended-release (2 beads). However, he notes persistent trouble focusing at work in the afternoons. What might be appropriate at this time?

Results:

- At Post-Test, only 61% of learners correctly answered: “Add a third bead of mixed amphetamine”



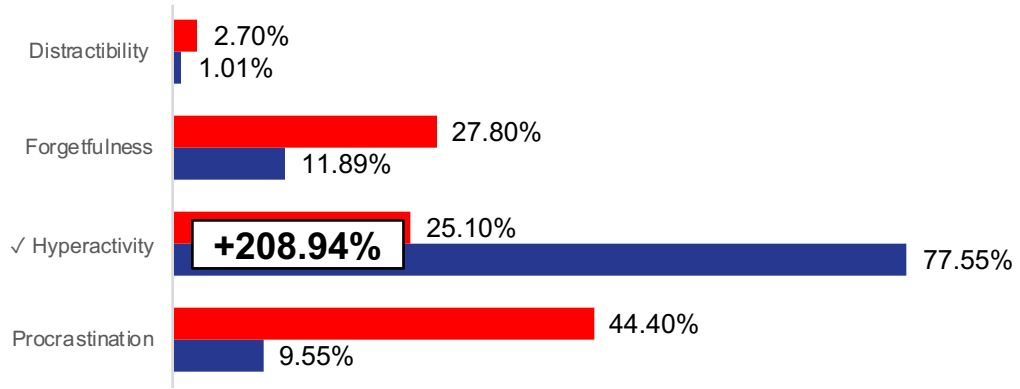
Overall Educational Impact

- Significant and substantial increases in score were measured in both Knowledge (388%) and Competence (56%), from Pre- to Post-Test
  - Learners improved their scores by nearly a factor of four in Knowledge, from uniformly very low scores at Pre-Test on the three items (8% to 25%)
  - On the Post Curriculum Assessment (PCA), significant increases with respect to Pre-Test values were measured in both Knowledge and Competence, and on all four curriculum Learning Objectives
    - Competence was very well retained at PCA, with no meaningful change in score from Post-Test
  - Final scores on Confidence and practice strategy questions were moderate (3.72 and 3.59)
- The analysis of scored items in the curriculum identified three **persistent learning gaps related to diagnosis of ADHD in adult patients, mortality risk of patients with ADHD, and therapy intensification for adult ADHD patients**
  - Pre- and Post-Test scores were low on a Knowledge items using a rating scale to evaluate and monitor patients with ADHD symptoms
  - Scores were low on a Knowledge item about the mortality ratio compared to the general population for patients with ADHD
  - Low scores were also observed on a Competence item asking learners to escalate therapy for an adult ADHD patient still having mild symptoms after beginning treatment six months prior

Knowledge Items

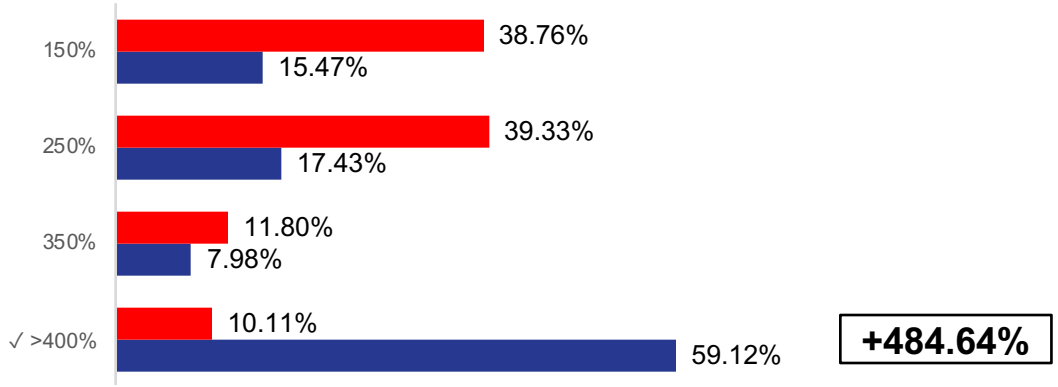
All of the following are common symptoms of adult ADHD, EXCEPT:

N = 482 – 597



In a Danish registry study, what was the approximate mortality percentage rate ratio for adults with ADHD, compared to the general population?

N = 534 – 614

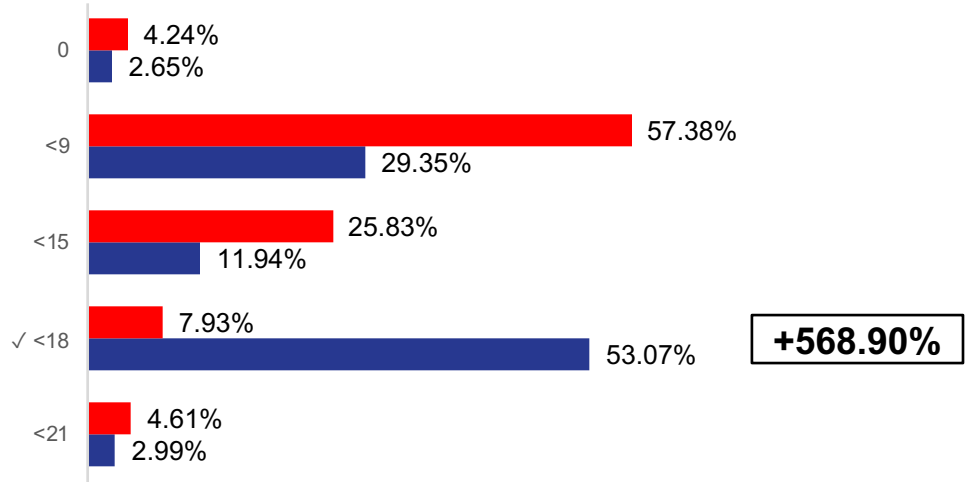


Correct answer is designated by a ✓.

Knowledge Items

The ADHD-RS screening tool is useful to monitor treatment of ADHD. To achieve optimal reduction in ADHD symptoms, and minimize functional, impairment, the survey score should be:

N = 542 – 603



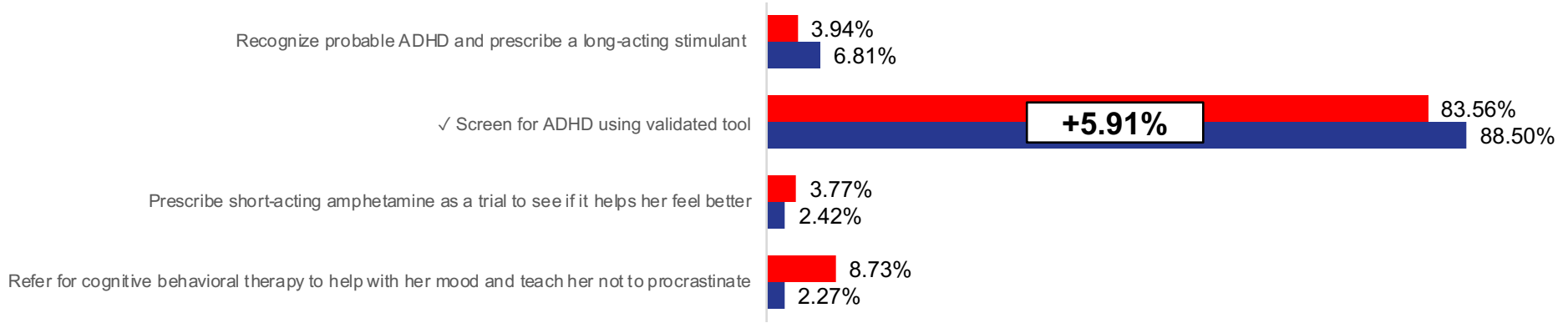
Correct answer is designated by a ✓.

Competence Items

Pre-Test
Post-Test

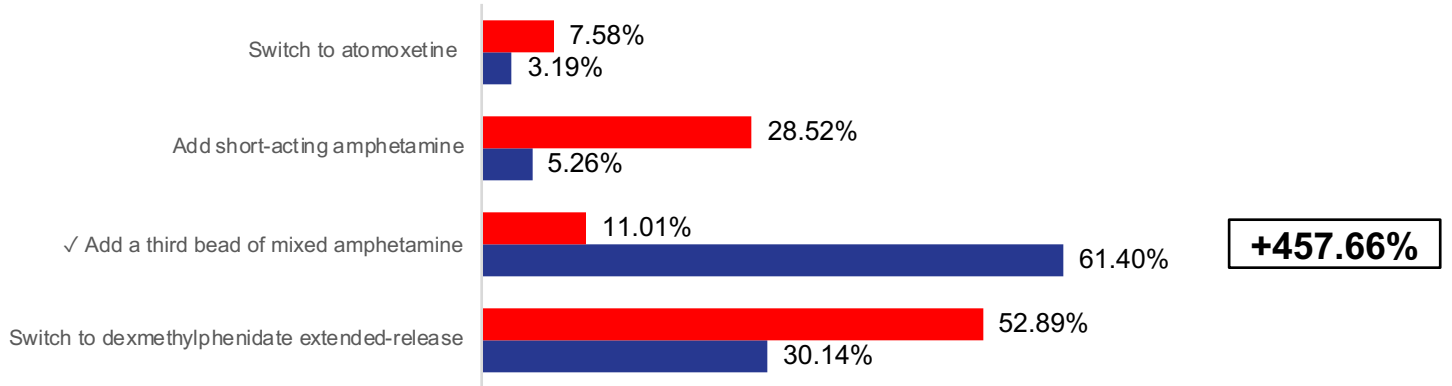
A 54-year-old woman presents complaining of being a procrastinator and feeling "overwhelmed" at work. She notes that her 15-year-old son was diagnosed with ADHD a few years ago. On questioning, she reveals symptoms of anxiety and depression and has tried numerous antidepressants in the past without much success. She has no other medical history. What might be the most appropriate next step at this time?

N = 584 – 661



A 41-year-old man who was diagnosed with ADHD 6 months ago presents for a checkup. He reports improved symptoms of distractibility and forgetfulness since starting treatment with mixed amphetamine extended-release (2 beads). However, he notes persistent trouble focusing at work in the afternoons. What might be appropriate at this time?

N = 554 – 627



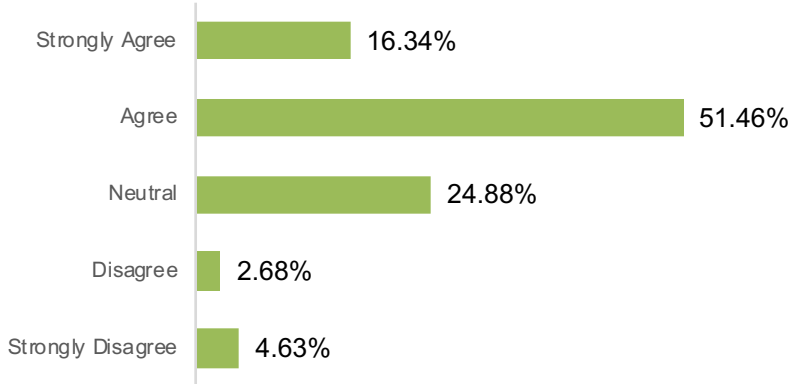
Correct answer is designated by a ✓.

Confidence items (given at follow-up)

PCA

Please rate your level of agreement with the following statement: “I have greater confidence in selecting appropriate pharmacotherapy for adult patients who have ADHD.”

N = 410

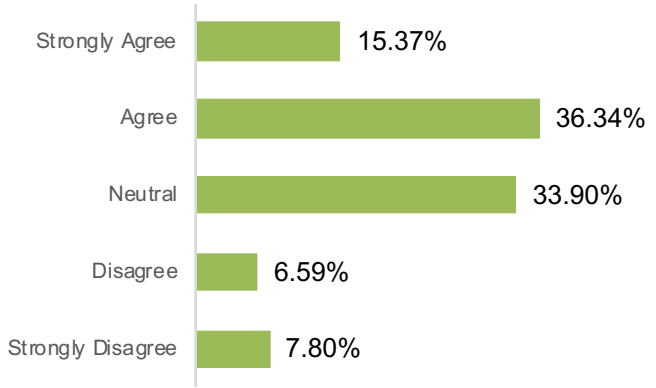


Practice Strategy Items (given at follow-up)

PCA

Please rate your level of agreement with the following statement: "I more often screen for ADHD in adult patients who have children with ADHD."

N = 410



Please rate your level of agreement with the following statement: "I am more likely to screen for ADHD in adult patients who exhibit symptoms of procrastination, distractibility and forgetfulness."

N = 410