Emerging Challenges in Primary Care: 2020 Conversations in Primary Care: 2020 Emerging Challenges and Clinical Updates in Primary Care: 2020 Optimizing Outcomes in Diabetes with GLP-1 RA Therapy: Case Based Strategies for Long-Term Patient Success



Novo Nordisk Grant ID: 26132



January 29, 2021



Emerging Challenges, Clinical Updates, and Conversations in Primary Care, 2020:

This curriculum focused on the use of GLP-1 therapies for patients with type 2 diabetes

22,122

Participation



Conversations in Primary Care, Episode 4	5/16/2 0	2,412
Conversations in Primary Care, Episode 4, Rebroadcast	5/23/2 0	587
Emerging Challenges in Primary Care, Episode 1 Miami: Florida, Georgia, Alabama, Mississippi, South Carolina	4/25/2 0	1,834
Emerging Challenges in Primary Care, Episode 2 Baltimore: Maryland, Pennsylvania, Virginia, West Virginia, Delaware, Ohio	5/2/20	1,741
Emerging Challenges in Primary Care, Episode 3 Tampa: Florida, Georgia, Alabama, Mississippi, South Carolina	5/9/20	1,068
Emerging Challenges in Primary Care, Episode 4 National: Birmingham with National Simulcast	5/30/2 0	2,270
Emerging Challenges in Primary Care, Episode 6 Atlanta: Georgia, Florida, Alabama, Tennessee, North Carolina, South Carolina, Mississippi	6/13/2 0	2,235
Emerging Challenges in Primary Care, Episode 7 St. Louis: Missouri, Iowa, Nebraska, Kansas, Oklahoma, Arkansas, Illinois	6/20/2 0	743
Emerging Challenges in Primary Care, Episode 8 Virtual: National audience	6/27/2 0	1,323
Emerging Challenges Episode 8, Rebroadcast	7/11/2 0	258
Emerging Challenges and Clinical Updates in Primary Care, Episode 1	8/8/20	879
Emerging Challenges and Clinical Updates in Primary Care, Episode 2	8/15/2 0	1,387
Emerging Challenges and Clinical Updates in Primary Care, Episode 5	9/12/2 0	858

Total

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Learning Gains Across Objectives



• LO 1, 29%* Improvement: Recognize the glycemic and cardiorenal effects of GLP-1 RAs in the management of T2DM

• LO 2, 86%* Improvement: Discuss the differences between injectable and oral GLP-1 RA formulations, and how to individualize treatments based on unique patient needs and medication characteristics

• LO 3, 26%* Improvement: Integrate GLP-1 RA therapy into earlier therapeutic decision-making, based on the newest treatment guidelines



• In each of the four curriculum learning domains, substantial and significant gains were achieved from Pre- to Post-Test

- The strongest improvements, from lowest Pre-Test scores, were measured in Knowledge of clinical trial data on GLP-1 agents
- Highest Post-Test scores (86%) were measured in Competence to select and modify GLP-1 therapy for patients with a history of T2D
- Low Pre- and Post-Test Confidence despite gains indicates possible learner awareness of gaps in Knowledge
- Practice strategy ratings, on considering the cardiovascular benefits of antihyperglycemic therapy, increased to a high average value at Post-Test (4.5)

Persistent Learning Gaps/Needs

Outcomes of clinical trials of GLP-1 therapies

Despite improvements in score on two Knowledge items covering the results of the REWIND and PIONEER 4 trials, learners remained challenged at Post-Test in correctly identifying their results

Which of the following outcomes was reported by the REWIND trial, which compared dulaglutide to placebo in patients with T2D and high cardiovascular disease (CVD) risk?

 Significantly lower rate of major CV events (MACE) with dulaglutide 54%

The PIONEER 4 trial, which compared oral semaglutide to injectable liraglutide and placebo, reported which of the following outcomes?

✓ Oral semaglutide non-inferior to injectable liraglutide for reducing A1c
32%

Confidence in treatment decisions

Learners lacked	Not at all confident	1%	24%
baseline to	Slightly confident	13%	33%
determine which patients with T2D	Moderately confident		29% 35%
are appropriate for GLP-1 RA therapy	Pretty much confident	10%	35%
based on current ADA guidelines	Very confident	3%	
		NIAC	

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Curriculum Patient Impact

In the Post-Test, learners (N = 9,215) were asked to report how many patients with T2D they see per week in any clinical setting by selecting a range. The resulting distribution of learner responses was then extrapolated to reflect the total number of learners who have attended the sessions.

The findings reveal that this education has the potential to impact

13,758,144

patients on an annual basis.

161,879–191,419 patients on a weekly basis

— 242,457— _____286,701



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Commercial Support

The Emerging Challenges in Primary Care: 2020, Conversations in Primary Care: 2020, and Emerging Challenges and Clinical Updates in Primary Care: 2020 series of CME activities were supported through educational grants or donations from the following companies:

- Abbott Diabetes Care Inc.
- Amgen

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- Astellas Pharma Global Development, Inc.
- AstraZeneca Pharmaceuticals LP.
- Bayer Healthcare Pharmaceuticals Inc.
- Biogen MA, Inc.
- Esperion Therapeutics, Inc.
- Ferring Pharmaceuticals, Inc.
- Galderma Laboratories L.P.

- Genentech, a member of the Roche Group
- Gilead Sciences, Inc.
- GlaxoSmithKline
- Grifols
- Kaneka Pharma America LLC;
- Lilly
- Novartis Pharmaceuticals Corporation
- Novo Nordisk Inc
- Takeda Pharmaceuticals U.S.A., Inc.









Learning Objectives

- Recognize the glycemic and cardiorenal effects of GLP-1 RAs in the management of T2DM
- Discuss the differences between injectable and oral GLP-1 RA formulations, and how to individualize treatments based on unique patient needs and medication characteristics
- Integrate GLP-1 RA therapy into earlier therapeutic decision-making, based on the newest treatment guidelines





Curriculum Overview

12 Accredited Live Virtual Symposia with 3 Rebroadcasts: April – September 2020



Clinical Highlights eMonograph

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



Podcast

The NACE Clinical Highlights Show



Optimizing Outcomes in Diabetes With GLP-1 Therapy Launch: May 31, 2020

https://www.buzzsprout.com/457981/3998114 -optimizing-outcomes-in-diabetes-with-glp-1-



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Enduring CME Symposium Webcast

Available at:

https://www.naceonline.com/courses/optimizingoutcomes-in-diabetes-with-glp-1-therapy-casebased-strategies-for-long-term-patient-success

Optimizing Outcomes in Diabetes with GLP-1 Therapy: Case Based Strategies for Long-Term Patient Success



COURSE SUMMARY

Cost: Free

Start Date: 06/30/2020

Expiration Date: 06/29/2021

Target Audience: Primary Care Providers

Format: Webcast

Estimated Time To Complete CME Activity: 1.25 hours

Credit(s): 1.25 AMA PRA Category 1 Credit(s)TM 1.25 AANP Contact Hours including 0.75 pharmacology hours

Hardware/Software Requirements: Any web browser



Speakers

Javier Morales, MD, FACP, FACE Clinical Associate Professor of Medicine Donald and Barbara Zucker School of Medicine at Hofstra/Northweil University Vice President Advanced Internal Medicine Group, P.C. East Hills, NY



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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 $p \le .05$.	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, $d=.28$ 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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2020 Session	Date	Attendees
Conversations in Primary Care, Episode 3	4/4/20	3,169
Conversations in Primary Care, Episode 3, Rebroadcast	4/11/20	1,358
Conversations in Primary Care, Episode 4	5/16/20	2,412
Conversations in Primary Care, Episode 4, Rebroadcast	5/23/20	587
Emerging Challenges in Primary Care, Episode 1 Miami: Florida, Georgia, Alabama, Mississippi, South Carolina	4/25/20	1,834
Emerging Challenges in Primary Care, Episode 2 Baltimore: Maryland, Pennsylvania, Virginia, West Virginia, Delaware, Ohio	5/2/20	1,741
Emerging Challenges in Primary Care, Episode 3 Tampa: Florida, Georgia, Alabama, Mississippi, South Carolina	5/9/20	1,068
Emerging Challenges in Primary Care, Episode 4 National: Birmingham with National Simulcast	5/30/20	2,270
Emerging Challenges in Primary Care, Episode 6 Atlanta: Georgia, Florida, Alabama, Tennessee, North Carolina, South Carolina, Mississippi	6/13/20	2,235
Emerging Challenges in Primary Care, Episode 7 St. Louis: Missouri, Iowa, Nebraska, Kansas, Oklahoma, Arkansas, Illinois	6/20/20	743
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Emerging Challenges and Clinical Updates in Primary Care, Episode 5	9/12/20	858
Total		22,122





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15 Virtual Sessions

6,261 Follow-up Participants 28% Rate of follow-up engagement



Level 1: Demographics and Patient Reach









Learning Objective Analysis

RealCME * indicates significance, p < 0.05</p>





- Across all three curriculum Learning Objectives, substantial and significant improvements were measured from Pre- to Post-Test
- The strongest gains were measured on the differences between injectable and oral GLP-1 RA formulations, and individualizing treatment
 - Despite these gains, scores on this Objective were low at Post-Test (60%)
- Highest scores at Pre- and Post-Test (69% and 86%) were measured on integrating GLP-1 RA therapy into therapeutic decision-making based on current guidelines



Learning Objective Analysis

Matched data, * indicates significance, p < 0.05

Cohort comparison by profession

	Advanced Practice Nurses				Physicians			
Learning Objective	N	Pre-Test	Post-Test	Change	N	Pre-Test	Post-Test	Change
Recognize the glycemic and cardiorenal effects of GLP-1 RAs in the management of T2DM	1,829	54% (50%)	68% (47%)	+25%*	515	56% (50%)	77% (42%)	+37%*
Discuss the differences between injectable and oral GLP-1 RA formulations, and how to individualize treatments based on unique patient needs and medication characteristics	1,803	25% (43%)	56% (50%)	+124%*	508	42% (49%)	74% (44%)	+74%*
Integrate GLP-1 RA therapy into earlier therapeutic decision-making, based on the newest treatment guidelines	2,131	66% (40%)	86% (30%)	+30%*	626	75% (38%)	89% (28%)	+19%*

- For both advanced practice nurses and physicians, significant gains were measured from Pre- to Post-Test on each of the three curriculum Learning Objectives
- On two of the three Objectives, advanced practice nurses achieved stronger improvements compared to physicians, though physicians had higher scores at Pre- and Post-Test
 - Physicians had greater gains in recognizing the glycemic and cardiorenal effects of GLP-1 RAs
- Despite both groups having the strongest gains in discussing the differences between injectable and oral GLP-1 RA
 formulations and individualizing treatment, the lowest Pre- and Post-Test scores were measured in this area



Learning Domain Analysis

ReaICME * indicates significance, *p* < 0.05



- In each of the four curriculum learning domains, substantial and significant gains were achieved from Pre- to Post-Test
- The strongest improvements, from lowest Pre-Test scores, were measured in Knowledge of clinical trial data on GLP-1 agents
 - Though strong gains were seen in this area, low Post-Test scores (64%) represent opportunities for further education
- Highest Post-Test scores (86%) were measured in Competence to select and modify GLP-1 therapy for patients with a history of T2D
- Low Pre- and Post-Test Confidence despite gains indicates possible learner awareness of gaps in Knowledge
- Practice strategy ratings, on considering the cardiovascular benefits of antihyperglycemic therapy, increased to a high average value at Post-Test (4.5)



Learning Domain Analysis Cohort comparison by profession

Matched data, * indicates significance, p < 0.05

Learning Domain	Advanced practice nurses				Physicians			
	N	Pre-Test	Post-Test	% Change	N	Pre-Test	Post-Test	% Change
Knowledge	2,024	40% (39%)	62% (40%)	+54%*	585	49% (41%)	75% (37%)	+52%*
Competence	2,131	66% (40%)	86% (30%)	+30%*	626	75% (38%)	89% (28%)	+19%*
Confidence	2,042	2.3 (1.0)	3.5 (0.9)	+53%*	571	2.5 (1.1)	3.7 (0.9)	+47%*
Practice	2,200	3.7 (1.1)	4.5 (0.8)	+21%*	627	3.9 (1.0)	4.5 (0.8)	+16%*

- When comparing the scores of advanced practice nurses and physicians by learning domain, both groups achieved significant gains from Pre- to Post-Test, across all four domains
 - Except for physicians in Knowledge, improvements across all domains for both groups were statistically significant
- In all four learning domains, advanced practice nurses achieved stronger gains compared to physicians from Pre- to Post-Test



4-Week Retention Analysis

By Learning Domain

N = 2,623 – 2,810 Matched responses



- Four to six weeks following their engagement in one of the curriculum sessions, learners were prompted to complete a brief Post Curriculum Assessment (PCA), which repeated items from each of the four curriculum learning domains
- In each of the four curriculum learning domains, substantial and significant net gains were achieved from Pre-Test to PCA measurements
 - Despite these gains, some score slippage was seen from Post-Test to PCA in Competence, Confidence, and practice strategy
- In Knowledge, proficiency was well retained, with no change in score from Post-Test to PCA measurements



4-Week Retention Analysis

By Learning Objective

RealCME * indicates significance, *p* < 0.05</p>

N = 2,347 – 2,780 Matched responses



- When examining results by Learning Objective, substantial and significant net gains were achieved from Pre-Test to PCA measurements on each of the three Objectives
- Ongoing improvements in score were achieved from Post-Test to PCA in recognition of the glycemic and cardiorenal effects of GLP-1 Ras, and discussion of differences between oral and injectable GLP-1 RA formulations



(4-week Post Assessment)

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Please select the specific areas of *skills, or practice behaviors*, you have improved regarding the treatment of patients with diabetes since this CME activity. (Select all that apply.) N = 5,933





(4-week Post Assessment)

What specific *barriers* have you encountered that may have prevented you from successfully implementing strategies for patients with diabetes since this CME activity? (Select all that apply.) N = 5,933



Identified Learning Gap: Outcomes of clinical trials of GLP-1 therapies

Despite improvements in score on two Knowledge items covering the results of the REWIND and PIONEER 4 trials, learners remained challenged at Post-Test in correctly identifying their results

Which of the following outcomes was reported by the REWIND trial, which compared dulaglutide to placebo in patients with T2D and high cardiovascular disease (CVD) risk?

Results:

• At PCA, 69% of learners correctly answered: "Significantly lower rate of major CV events (MACE) with dulaglutide"

The PIONEER 4 trial, which compared oral semaglutide to injectable liraglutide and placebo, reported which of the following outcomes?

Results:

• At PCA, 60% of learners correctly answered: "Oral semaglutide non-inferior to injectable liraglutide for reducing A1c"





Overall Educational Impact

- Substantial, significant improvements were seen across all four curriculum learning domains, from Pre- to Post-Test (Knowledge, Competence, Confidence, and practice strategy)
 - These gains were stronger for advanced practice nurses compared to physicians across all domains, though physicians achieved higher scores in Knowledge, Competence, and Confidence
 - These gains were seen across all individual Knowledge and Competence items, with improvements ranging from 22% to 86%
- Highest Post-Test scores were measured on learner Competence to correctly add GLP-1 therapy when consistent with ADA 2020 guidelines
- Significant improvements ranging from 26% to 86% were measured across all Learning Objectives, with all Post-Test scores between 60% and 86%
- The analysis of the Knowledge and Competence domains identified an **opportunity for further education on outcomes of clinical trials of GLP-1 agents**
 - Despite strong increases seen on two Knowledge items discussing the REWIND and PIONEER 4 trials, learners struggled at Post-Test to correctly select their results
 - Despite improved competence to correctly add GLP-1 therapy, learners lacked confidence at baseline to determine which patients with T2D are appropriate for GLP-1 RA therapy based on current ADA guidelines.



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Slides 25 – 27: Pre-Test to Post-Test matched item responses

Appendix

Slides 28 – 30: Pre-Test, Post-Test, and PCA matched item responses*





Knowledge Items

Which of the following outcomes was reported by the REWIND trial, which compared dulaglutide to placebo in patients with T2D and N = 5,563 Matched responses high cardiovascular disease (CVD) risk?



The PIONEER 4 trial, which compared oral semaglutide to injectable liraglutide and placebo, reported which of the following outcomes?



N = 5,497 Matched responses



59 y/o man with 6-year history of T2D, hypertension, dyslipidemia, obesity (BMI 30 kg/m2), NSTEMI 6 months ago. Current meds: Metformin 1000 mg bid, atorvastatin 80 mg qd, metoprolol succinate 100 mg bid, lisinopril 20 mg qd, aspirin 81 mg qd. Reports daily walking x 30 minutes and low-fat diet; frustrated by continued weight gain (10 lbs in last year). Today: A1C 8.1%, eGFR 66 mL/min/1.73m2. According to 2020 ADA guidelines, which of the following might be appropriate at this time?



67 y/o woman with 9-year history T2D, hypertension, dyslipidemia, obesity (BMI 32 kg/m2). Current meds: Metformin 1000 mg bid, sitagliptin 100 mg qd, empagliflozin 25 mg qd, rosuvastatin 40 mg qd, fosinopril 20 mg qd. Swims 3 x week and consumes low-fat diet designed by diabetes educator; weight stable over last year. Today: A1C 7.7%, normal heart rate and rhythm, eGFR 58 mL/min/1.73 m2, albumin: creatinine ratio 122 mg/g. According to 2020 ADA guidelines, which of the following might be appropriate at this time?



N = 5,820 Matched responses





Competence Items

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Pre-Test Post-Test

N = 5,924 Matched responses

Confidence and Practice Strategy Items



Not at all confident24%1%33%Slightly confident13%Moderately confident29%Pretty much confident10%Very confident3%16%

How confident are you in your ability to determine which patients with T2D are appropriate for GLP-1 RA therapy based on current ADA guidelines?

How often do you consider the cardiorenal benefits of antihyperglycemic medications when selecting therapy for patients with T2D?



N = 6,274 Matched responses

N = 6,751 Matched responses





Knowledge Items

Post Curriculum Assessment (PCA)



Which of the following outcomes was reported by the REWIND trial, which compared dulaglutide to placebo in patients with T2D and high cardiovascular disease (CVD) risk?



The PIONEER 4 trial, which compared oral semaglutide to injectable liraglutide and placebo, reported which of the following outcomes?



N = 2,351 Matched responses

N = 2,347 Matched responses

70% 71%





Competence Items

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Post Curriculum Assessment (PCA)

59 y/o man with 6-year history of T2D, hypertension, dyslipidemia, obesity (BMI 30 kg/m2), NSTEMI 6 months ago. Current meds: Metformin 1000 mg bid, atorvastatin 80 mg qd, metoprolol succinate 100 mg bid, lisinopril 20 mg qd, aspirin 81 mg qd. Reports daily walking x 30 minutes and low-fat diet; frustrated by continued weight gain (10 lbs in last year). Today: A1C 8.1%, eGFR 66 mL/min/1.73m2. According to 2020 ADA guidelines, which of the following might be appropriate at this time?



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Pre-Test Post-Test PCA

N = 2,445 Matched responses

Confidence and Practice Strategy Items

Post Curriculum Assessment (PCA)



How confident are you in your ability to determine which patients with T2D are appropriate for GLP-1 RA therapy based on current ADA guidelines?

How often do you consider the cardiorenal benefits of antihyperglycemic medications when selecting therapy for patients with T2D?



N = 2,810 Matched responses





N = 2,639 Matched responses