Approximately 25% of patients with diabetes have chronic kidney disease. The prevalence is estimated to increase by 5.4% due to the rising number of cases of diabetes and the high prevalence of obesity. Data confirm the awareness of diabetes and the high prevalence of obesity. Data confirm the awareness of chronic kidney disease (CKD) in type 2 diabetes (T2D) remains low among clinicians, especially in primary care because patients are typically asymptomatic. According to the Institute of Medicine, today’s clinicians are more challenged than ever before to remain current with relevant and timely clinical information. This gap in knowledge contributes to variation in care and less than optimal outcomes. This activity addressed the assessment, diagnosis, risk stratification, and management of CKD in T2D providing NPs with the tools they need to improve their patient outcomes.

### Project Outcomes Measurement

- Outcomes questions were developed based on the learning objectives, with linkage to the needs assessment and content.
- Learners answered demographic, pre/post and evaluation questions online.
- A paired analysis of pre/post results was conducted. These data were filtered to include only learners who self-reported seeing patients with T2D each month (Module 1: n=857, Module 2: n=644).
- Tests used to identify statistically significant pre to post:
  - McNemar test for each of 5 Module 1 and 6 Module 2 multiple-choice knowledge/case questions
  - Wilcoxon test for % correct knowledge/case questions, and for the confidence rating scale questions

### Initiative Title

**CHRONIC KIDNEY DISEASE AND TYPE 2 DIABETES: Strategies to Improve Patient Outcomes**

#### Module 1 (M1): Overview and Diagnosis/Screening for CKD in Type 2 Diabetes

- **Module 2 (M2): Management of Diabetic Kidney Disease**

#### 2 Podcasts: NP Pulse: The Voice of the Nurse Practitioners®

- **Management of Diabetic Kidney Disease**
- **CKD and T2DM**

### Learning Objectives

- Identify the indicators that must be present to establish a diagnosis of chronic kidney disease (CKD) in patients with T2D.
- Summarize key management strategies from current guidelines. Apply care management strategies in the management of patients with T2D and CKD.
- Identify appropriate glucose-lowering agents for patients presenting with various stages of CKD.

### Change in Confidence

#### Learners were asked to rate their level of confidence in their ability to do the following over the past 60 days:

- Adjusting the dose of metformin based on the patient’s kidney function lab results.
- Statistically significant 27% increase in mean confidence rating (pre to post, P<0.001, ES=1.68; n=1752, paired data)

#### Learners rated their change in confidence in their ability to do the following over the past 60:

- Identify appropriate glucose-lowering agents for patients presenting with various stages of CKD.
- Statistically significant 30% increase in mean confidence rating (pre to post, P<0.001, ES=1.44; n=1752, paired data)

#### Learners were asked to identify how often they did the following over the past 60 days:

- Change in confidence rating scale questions

#### Planned practice change and key takeaways:

- Practically applying the following over the past 60 days.

#### Learner suggested topics for future education:

- Future suggestions on how certain changes can stabilize the worsening of renal failure.
- Updates on diabetes medications.
- More diabetic education and management.
- More information on diabetes and kidney disease.

### Change in Knowledge/Competence/Practice Change

#### Which one of the following would cause you to consider something other than diabetics and CKD in T2D patients with stage 3B CKD? (Answer: Fasted with postprandial and normal visceral obesity)

- N = 2061 paired data. P<0.001

#### For patients treated with medication for more than 6 months, what monitoring is recommended? (Answer: Annual renal function testing of kidney function every 3-6 months)

- N = 1752 paired data. P<0.001

#### Patient Case: Stage 3A CKD, T2DM, taking metformin 2,000 mg/day. Which of the following interventions to improve nephrologist’s diagnostic confidence would be most appropriate for decreasing his risk for CKD progression? (Answer: Monitor level of an SGLT2 inhibitor)

- N = 1752 paired data. P<0.001

#### Learners identified the best case key takeaway and planned practice change:

- Truly or somewhat committed to self-identified planned practice changes
- Did not perceive any barriers to implementing practice changes

### 60-day Follow-Up Survey

#### Learners were asked to identify how often they did the following over the past 60 days:

- Results represent ratings of “More often.”

- Results represent rate of “Increased” or “Increased significantly.”

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