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ORIGINAL RESEARCH

# Assessing Clinical Inertia on Implementing Clinical Guideline Recommendations in Patients with Type 2 Diabetes: A Clinician Survey Study

Judith J Stephenson[1], Nancy Witkowski[2], Joseph L Smith[1], Anny C Wong[2], Lindsay GS Bengtson[2], Vincent J Willey[1]

[1]Carelon Research, Wilmington, DE, USA; [2]Boehringer Ingelheim Pharmaceuticals, Inc, Ridgefield, CT, USA

Correspondence: Judith J Stephenson, Carelon Research, 123 Justison Street, Suite 200, Wilmington, DE, 19801, USA, Tel +1 302-547-5770, Email Judith.stephenson@carelon.com



**Objective:** To evaluate how clinicians' attitudes, knowledge and treatment behavior align with American Diabetes Association (ADA) standards of care (SOC) clinical practice guidelines (CPGs).

**Research Design and Methods:** A cross-sectional internet survey was conducted among clinicians caring for patients with type 2 diabetes who were identified from administrative claims in a large United States administrative claims database. Eligible clinicians consisted of primary care physicians, endocrinologists, physician assistants, and nurse practitioners. The survey assessed attitudes toward, knowledge of, and use of ADA CPGs related to cardiometabolic SOC. Clinicians' "real-world" use of CPGs was assessed by calculating the attainment of six therapeutic management (TM) measures using administrative claims data. TM measure attainment was defined as the proportion of eligible patients receiving guideline-concordant care and was calculated only for measures where clinicians had ≥5 eligible patients. Clinicians' survey data were linked with their TM measure attainment data for analytic purposes.

**Results:** A total of 402 clinicians completed the survey and 314 clinicians had at least one TM measure attainment. Despite generally positive attitudes and adequate guideline knowledge, TM attainment was below 50% on four of the six TM measures and correlations between attitudes, knowledge, and TM attainment were low. Concordance/discordance analysis showed the "guideline inertia" group consisting of clinicians with high knowledge but low TM measure attainment to be the most frequently occurring group. Adoption of GLP-1 receptor agonists and SGLT2 inhibitors remained low among clinicians treating patients with comorbid ASCVD, heart failure, or chronic kidney disease.

**Conclusion:** Clinicians demonstrated adequate knowledge of ADA SOC but showed persistent clinical inertia in translating this knowledge into cardiometabolic risk management. These findings highlight that knowledge alone is insufficient for achieving guideline-concordant prescribing behavior. Multi-level strategies incorporating clinician education, system-level support, and patient engagement may be required to improve adoption of evidence-based therapies.

**Keywords:** guideline adherence, cardiometabolic risk, type 2 diabetes, GLP-1 receptor agonists, SGLT2 inhibitors, clinical inertia

## Introduction

Evidence-based clinical practice guidelines (CPGs) have been developed to assist clinicians in standardizing and improving patient care.[1] Their use has been associated with better patient outcomes and lower health care costs.[2] Despite this, clinical inertia, commonly defined as the failure to initiate or intensify therapy when indicated or to de-escalate when appropriate, remains widespread.[1,3,4] Contributing factors include lack of familiarity with guideline content, limited awareness of updates, and lack of agreement with specific recommendations.[1]

The American Diabetes Association (ADA) CPGs address both primary and secondary cardiovascular (CV) disease prevention; however, treatment gaps persist and attainment of ADA standards of care (SOC) continues to be suboptimal.[5–8] Prior research has shown that even when clinicians express positive attitudes toward guidelines, practical

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barriers, including limited time, competing priorities, and challenges applying recommendations to complex patients, often make consistent guideline adherence difficult.[9]

The increasing role of physician assistants (PAs) and nurse practitioners (NPs) in the (US) highlights the need to understand guideline use across diverse clinician types.[10] While a significant amount of research has been conducted involving physicians' knowledge and attitudes of CPGs, data are limited pertaining to the use of CPGs by PAs and NPs.[11] Additionally, little research has jointly examined clinicians' guideline knowledge (GK), attitudes, and treatment behaviors within the same cohort.

To address this gap, this study evaluated clinicians' knowledge, attitudes, and treatment behaviors related to ADA SOC CPGs by linking clinicians' survey responses with claims-based therapeutic treatment measure attainment. This approach provides insights into how well knowledge and attitudes translate into real-world treatment adherence.

# Research Design And Methods

## Overview of Research Design

A cross-sectional internet survey was conducted with clinicians caring for patients with type 2 diabetes. The survey assessed clinicians' attitudes toward, knowledge of, and use of recent ADA SOC CPGs. Real-world use of CPGs was assessed from administrative claims data by calculating the attainment of six therapeutic management (TM) measures where TM attainment reflected the proportion of a clinician's eligible patients receiving guideline-concordant care. Clinicians' survey responses were merged with their TM measures to form the analytic file that was used for this study. The study design is shown in Figure 1.

## Data Source and Study Population

The Healthcare Integrated Research Database (HIRD®), a large US integrated administrative claims database with medical and pharmacy claims, beneficiary eligibility, and laboratory result data, served as the sampling frame for identifying a purposive sample of eligible clinicians based on claims submitted for their patients with type 2 diabetes. However, before the clinicians who were the focus of the study could be identified, their eligible patients had to be identified.

Eligible patients consisted of patients with commercial or Medicare Advantage health insurance who had ≥1 medical claim for an outpatient visit with an ICD-10-CM diagnosis code for type 2 diabetes or ≥1 pharmacy claim for an antidiabetic during the identification period from November 30, 2020, to November 30, 2021. The index date was defined as the date of the latest medical or pharmacy claim. Patients had to be ≥18 years of age on the index date, have ≥12 months of continuous medical and pharmacy benefit enrollment, and ≥2 outpatient visits for type 2 diabetes during the 12-month period prior to and including the index date. Patients were excluded if they had claims for type 1 diabetes, end stage renal disease, kidney disease, pregnancy, or hospice during the 12-month period prior to and including the index date.

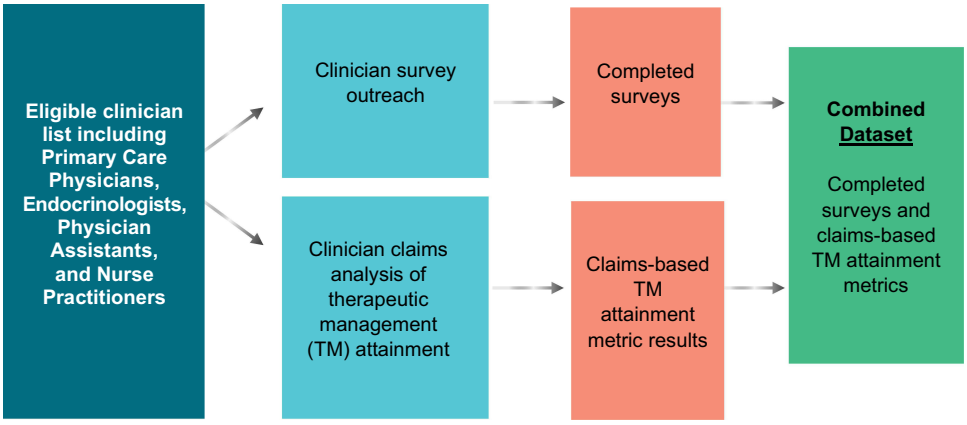


**Figure 1** Study design diagram. Clinician sample identification period is from 11/30/20 – 11/30/21; clinician claims-determined therapeutic management (TM) measures assessed for period from 10/01/21 – 09/30/22. Clinician sample list size = 32,932 names.

Clinicians were identified by their National Provider Identifier (NPI) number on the patient index date claim. Clinician specialty/type was assigned using a proprietary database. For providers with multiple specialties, specialties were prioritized as follows: endocrinology > PCP > PAs/NPs > all others. A clinician list was generated that was used for clinician outreach and data collection purposes.

## Survey Process and Data Collection

Survey fielding took place between June 2022 and September 2022 and ended as soon as the target number of completed surveys was reached. A multi-method process, consisting of emails, mailed letters, and faxes, was used to recruit clinicians. All recruitment materials contained similar text, including an overview of the study, participation requirements, duration of time involved, the amount of compensation for completing the survey, and a link to the internet survey.

Clinicians who responded to the recruitment materials and accessed the internet survey viewed additional information about the study, provided electronic informed consent, and completed the study screening questions to ensure they were still qualified for the study before answering the survey questions.

The protocol and all survey-related materials were approved by the WCG Institutional Review Board prior to the conduct of the study and all data were handled in compliance with the regulations of the US Health Insurance Portability and Accountability Act of 1996. The study adhered to the ethical principles outlined in the Declaration of Helsinki, ensuring the protection of human subjects involved in the research.

## Measurement Instruments

### Survey

The study team developed the survey based on questions that were identified from a literature review, stakeholder recommendations, and use in other guideline surveys. All survey questions were closed-ended.

Clinicians' attitudes toward CPGs were assessed from 15 general questions (Supplemental Table 1A) in which respondents were asked to indicate their agreement or disagreement using a 5-point Likert scale that ranged from 1-strongly disagree to 5-strongly agree. Both positively- and negatively-worded questions were included. Clinicians who indicated they were at least slightly familiar with the 2021/2022 ADA CPGs were asked an additional 7 questions (Supplemental Table 1B) that assessed their attitudes towards the ADA CPGs using a 5-point Likert scale that ranged from 1-strongly disagree to 5-strongly agree.

Guideline knowledge (GK) was assessed with 11 questions (Supplemental Table 1C) consisting of vignettes, true/false and multiple-choice questions. These questions were used to assess clinicians' knowledge of guideline-compliant behaviors. A GK score was calculated by summing the number of correct answers, dividing by the number of GK questions, and multiplying by 100 to give a score between 0 and 100%. A GK score threshold of >80% was chosen as the minimum acceptable level of knowledge based on its widespread use in education and business to define acceptable performance.[12] The GK score distribution was determined, and the mean, standard deviation, and confidence interval were calculated. A binary variable was created that indicated whether a clinician's GK score was ≥80%.

### Diabetes Therapeutic Management Treatment Measures

Clinicians' ADA SOC behaviors were calculated for the 6 claims-based TM measures, TM1 – TM6, from claims submitted between October 1, 2021, and September 30, 2022. Table 1 provides definitions of the 6 TM measures. Each TM measure was defined as the proportion of patients with the guideline-concordant care during the claims submission period divided by all patients of the same clinician eligible for that guideline measure. Each measure was calculated only for clinicians with ≥5 patients who met the measure eligibility specifications.

The measures assessed the prescribing of medications, disease state monitoring, and clinical outcomes as recommended in the relevant CPGs. TM1-TM3 were assessed for all patients with type 2 diabetes, while TM4-TM6 were assessed among patients with type 2 diabetes and concurrent ASCVD, HF, or CKD, respectively. Patients with multiple comorbid conditions were included in the calculation of the TM measures that corresponded to each of their comorbid conditions.

For each TM measure, the mean, standard deviation, and confidence interval were calculated, and a binary variable was created that indicated whether a clinician met high TM metric attainment, defined as ≥75th percentile attainment based on

**Table 1** Therapeutic Management (TM) Treatment Measure Descriptions. TM1 – TM3 Were Estimated for All Eligible Patients with Type 2 Diabetes. TM4 – TM6 Were Estimated for Patients with Type 2 Diabetes and Concurrent ASCVD, HF, and CKD, Respectively. TM Measure Assessment Period is from 10/01/21 – 09/30/22

| Measure | Measure Description (Per Clinician) |
|---|---|
| TM1 | Percentage of adult patients with type 2 diabetes who have ≥1 HbA1c laboratory test. |
| TM2 | Percentage of adult patients with type 2 diabetes who have ≥1 eGFR and ≥1 UACR test performed. |
| TM3 | Percentage of adult patients with type 2 diabetes who were prescribed a statin. |
| TM4 | Percentage of adult patients with type 2 diabetes and ASCVD who were prescribed a GLP-1 receptor agonist or SGLT2 inhibitor. |
| TM5 | Percentage of adult patients with type 2 diabetes and HF who were prescribed a SGLT2 inhibitor. |
| TM6 | Percentage of adult patients with type 2 diabetes and CKD who were prescribed a SGLT2 inhibitor or a GLP-1 receptor agonist if there was prior use of a SGLT2 inhibitor. |

**Abbreviations**: ASCVD, atherosclerotic cardiovascular disease; CKD, chronic kidney disease; eGFR, estimated glomerular filtration rate; GLP-1, glucagon-like peptide-1; HbA1c, hemoglobin A1c; HF, heart failure; SGLT2, sodium-glucose cotransporter-2; UACR, urine albumin to creatinine ratio.

commonly used national benchmark ratings.[13] Clinicians were classified as guideline-concordant for a given TM measure if the percentage of their patients achieving the measure was at or above the 75% percentile based on the distribution percentiles calculated from the total clinician population; otherwise, they were classified as guideline non-concordant.

## Statistical Analysis

Survey data were analyzed using descriptive statistics. Means, standard deviations, medians, relative frequencies, and percentages were presented overall and separately for PCPs, Endos, and PAs/NPs for all survey items, depending on whether the item was categorical or continuous.

GK scores were computed for each clinician and analyzed using descriptive statistics. Means, standard deviations, medians, relative frequencies, proportions, and confidence intervals were reported overall and separately for PCPs, Endos, and PAs/NPs. The GK performance threshold of ≥80% was used to indicate adequate GK, and the percentage of clinicians with GK scores above and below the 80% threshold score was determined.

TM measure attainment was calculated for TM1 – TM6 for each clinician and analyzed using descriptive statistics. Means, standard deviations, medians, relative frequencies, proportions, and confidence intervals were reported overall and separately for PCPs, Endos, and PAs/NPs. Using the TM attainment threshold of at or above the 75% percentile to indicate high TM attainment behavior, the proportion of clinicians with TM attainment above and below the 75th percentile was determined for each TM measure. To ensure stable estimates, TM measure attainment was only calculated for clinicians with ≥5 patients meeting measure eligibility criteria.

GK scores and guideline attitudes were correlated with the TM attainment measures to determine the association between clinician GK, attitudes, and real-world guideline behavior.

A concordance/discordance analysis created four groups: guideline inertia, guideline naïve, guideline implementation, and residual based on their guideline knowledge and TM measure attainment.

# Results

## Sample Disposition

Of 32,920 clinicians contacted, 563 clinicians responded, 467 gave electronic informed consent, 458 met study qualifications, and 402 (260 PCPs, 44 Endos, 98 PAs/NPs) completed the survey (Figure 2). Survey fielding stopped when the target number of completed surveys was obtained. TM measure attainment metrics were calculated for the 12-month claims attainment period and linked with survey data for 314 clinicians with ≥5 patients with at least 1 valid TM measure.

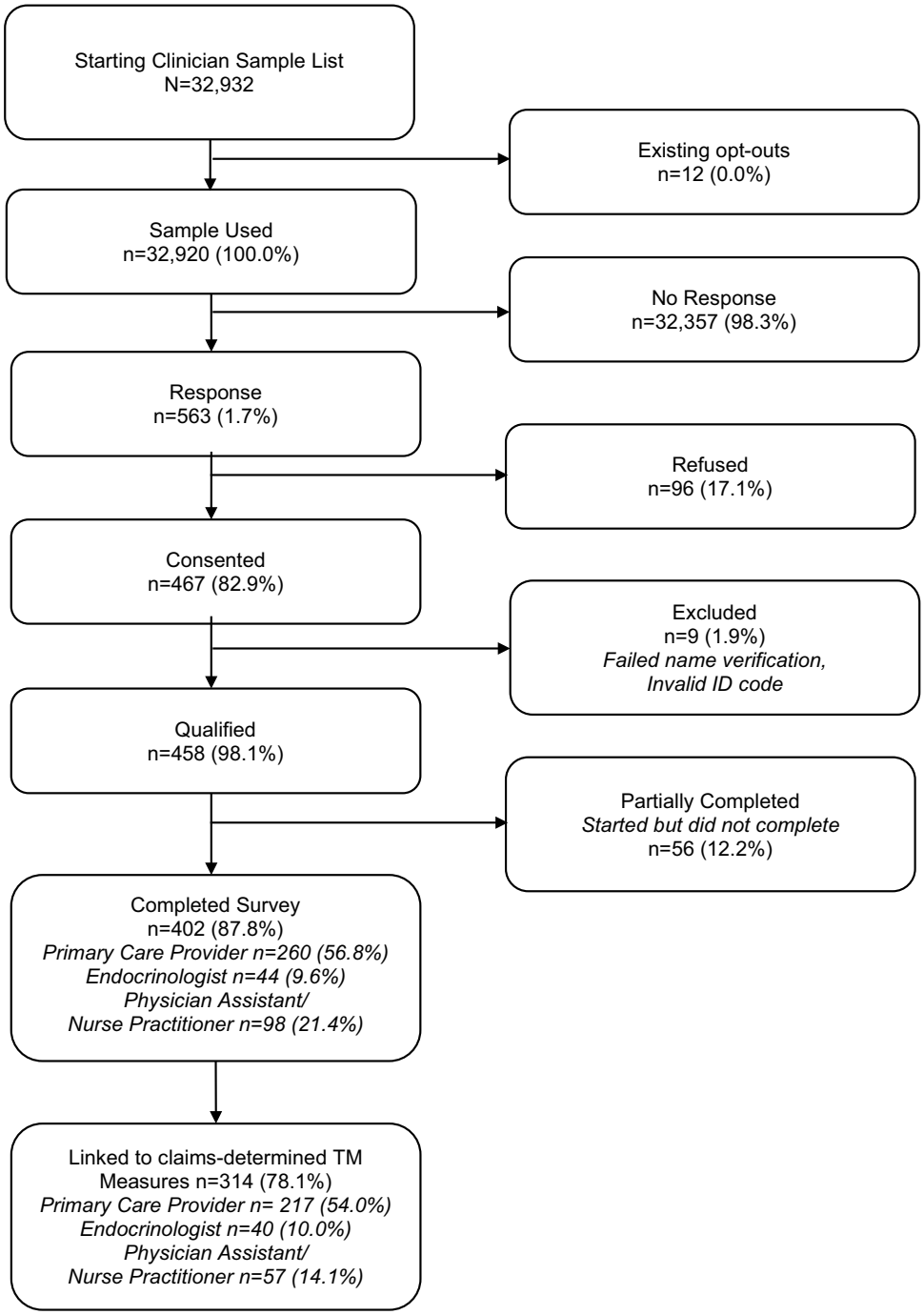


**Figure 2** Clinician survey flowchart diagram. Clinician survey fielding period is from 06/22 – 09/22; survey fielding ended once target number of completed surveys was reached; therapeutic management (TM) measures were assessed from claims between 10/01/21 and 09/30/22.

## Clinician Demographic and Practice Characteristics

Clinician demographic and practice characteristics varied by specialty. PA/NPs were younger, predominantly female, and more often in group practice, while PCPs and endocrinologists were older, mostly male, and more often in solo practice (Table 2).

## Guideline Knowledge

Endocrinologists most often scored above the 80% knowledge threshold (77%), compared with PCPs (58%) and PA/NPs (60%) (Figure 3 and Supplemental Table 2). Clinician answers to the individual GK questions are shown in Supplemental Table 2. Most


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**Table 2** Clinician Demographic and Practice Characteristics, Overall and by Type of Clinician

| Demographic and Clinical Characteristics | Overall (N = 402) | Primary Care Physician (n = 260) | Endocrinologist (n = 44) | Physician Assistant/ Nurse Practitioner (n = 98) |
|---|---|---|---|---|
| Female sex | 177 (44.0) | 81 (31.2) | 15 (34.1) | 81 (82.7) |
| Age on survey date, years | 49.4 ± 11.6 | 51.9 ± 11.8 | 49.2 ± 9.9 | 42.9 ± 9.1 |
| Declined to answer | 1 (0.2) | 1 (0.4) | 0 (0.0) | 0 (0.0) |
| Race and Ethnicity | | | | |
| White, non-Hispanic | 259 (64.4) | 155 (59.6) | 19 (43.2) | 85 (86.7) |
| Black/African American, non-Hispanic | 13 (3.2) | 11 (4.2) | 0 (0.0) | 2 (2.0) |
| Asian, non-Hispanic | 92 (22.9) | 69 (26.5) | 18 (40.9) | 5 (5.1) |
| All other races and ethnicities | 36 (9.0) | 24 (9.2) | 7 (15.9) | 5 (5.1) |
| Declined to answer | 2 (0.5) | 1 (0.4) | 0 (0.0) | 1 (1.0) |
| Years in practice | | | | |
| Less than 10 years | 117 (29.1) | 53 (20.4) | 12 (27.3) | 52 (53.1) |
| 10 to less than 20 years | 106 (26.4) | 59 (22.7) | 18 (40.9) | 29 (29.6) |
| 20 years or more | 178 (44.3) | 147 (56.5) | 14 (31.8) | 17 (17.3) |
| Declined to answer | 1 (0.2) | 1 (0.4) | 0 (0.0) | 0 (0.0) |
| Current primary practice setting | | | | |
| Solo practice | 102 (25.4) | 83 (31.9) | 7 (15.9) | 12 (12.2) |
| Group practice, single specialty | 175 (43.5) | 101 (38.8) | 12 (27.3) | 62 (63.3) |
| Group practice, multi-specialty | 113 (28.1) | 69 (26.5) | 22 (50.0) | 22 (22.4) |
| Some other arrangement | 11 (2.7) | 6 (2.3) | 3 (6.8) | 2 (2.0) |
| Declined to answer | 1 (0.2) | 1 (0.4) | 0 (0.0) | 0 (0.0) |

**Note**: Data are n (%) or mean ± SD.
**Abbreviation**: SD, standard deviation.

clinicians correctly identified guideline-recommended use of GLP-1 RAs/SGLT2is in patients with CV risk; fewer recognized heart failure was not the leading cause of morbidity/mortality in patients with T2D (Supplemental Table 2).

## Guideline Attitudes

Figure 4 shows the percentage of clinicians, by clinician type, who strongly or somewhat agreed with each of the 15 general guideline attitude questions. Approximately 80% of all clinicians somewhat or strongly agreed that CPGs are: 1) not meant to be a replacement for clinical judgment, 2) useful at various stages of diseases, 3) evidence-based, 4) good educational tools, 5) have a significant effect on morbidity/mortality, and 6) standardize care.

PCPs expressed more concerns about autonomy and complexity. PAs/NPs viewed guidelines as more educationally useful.

## Treatment Measure Attainment

TM measure attainment metrics are shown in Figure 5 and Supplemental Table 3 by TM measure and clinician type. Mean TM measure attainment across all clinician types was highest for TM1: % of patients per clinician with ≥1 HbA1c laboratory test (mean 83.4%), followed by TM3: % of patients per clinician who were prescribed a statin (mean 73.6%). Clinicians' TM measure attainment was much lower for other TM measures. Endos had better TM attainment than PCPs and PAs/NPs on TM2-TM5. PAs/NPs had better TM attainment than PCPs on TM1, and TM3 – TM5; PCPs had better TM attainment than PAs/NPs on TM2 and TM6.

Correlation coefficients between guidelines attitudes and TM measure attainment were low and ranged from −0.04–0.15. Similarly, correlation coefficients between GK and TM measure attainment ranged from −0.03–0.14 (data not shown).

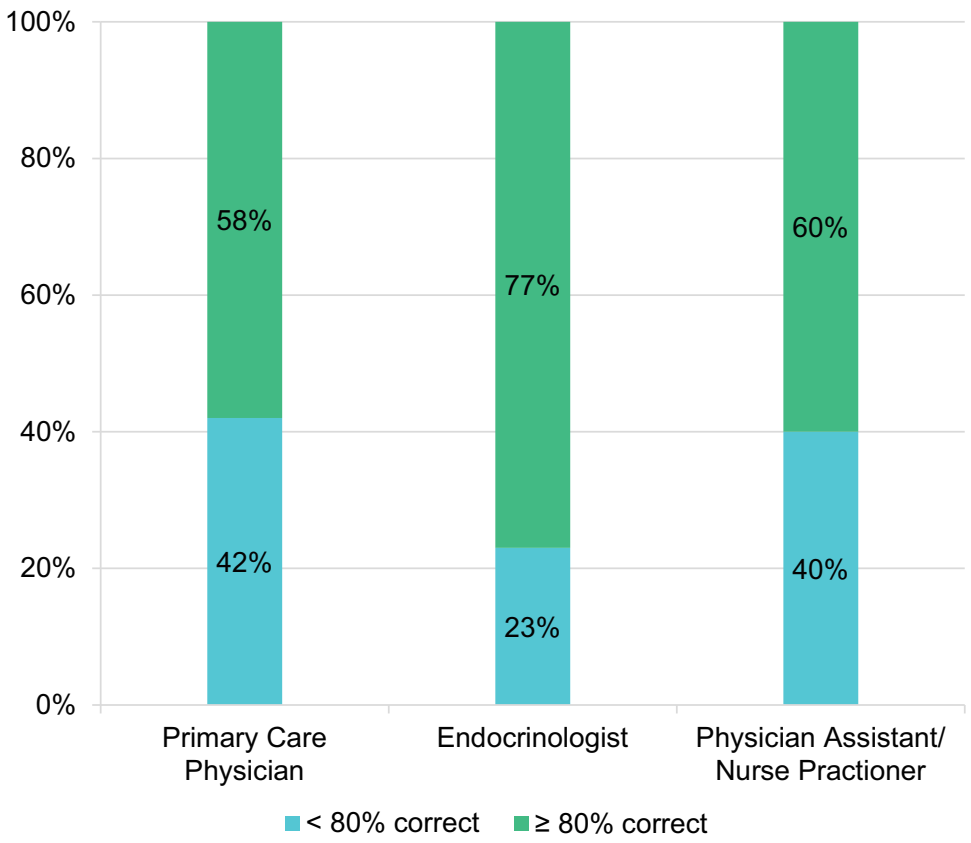


**Figure 3** Percentage of clinicians, by clinician type, with guideline knowledge scores above and below the threshold score of at least 80% correct.

## Association Between Guideline Knowledge and Treatment Measure Attainment

Results from the concordance/discordance analysis between clinicians' GK score threshold (≥80% vs <80%) and TM attainment threshold (>75th percentile vs <75th percentile) are shown in Figure 6A-F by TM measure and clinician type. Four clinician groups were identified: guideline inertia group, guideline naïve group, guideline implementation group, and guideline residual group. The most commonly observed group across all TM measures, the guideline inertia group, consists of clinicians with high GK and low TM measure attainment. At least 30% of all clinicians were in the guideline inertia group for all TM measures except TM1. Across all TMs, the percentage of Endos in the guideline inertia group ranged from a high of 63% for TM2 (renal function testing), to a low of 44% for TM4 (SGLT2/GLP1 prescribing in T2D+ASCVD). PA/NPs guideline inertia group membership ranged from a high of 51% for TM2 (renal function testing), to a low of 23% for TM1 (HbA1c testing), whereas PCPs ranged from a high of 39% for TM4 (SGLT2/GLP1 prescribing in T2D+ASCVD) and TM5 (SGLT2/GLP1 prescribing in T2D+HF) to a low of 35% for TM1 (HbA1c testing).

The second most prevalent group, the guideline naïve group, consists of clinicians with low GK and low TM behavior attainment. At least 30% of PCPs and PAs/NPs were in the guideline naive group for all TM measures except TM1. The PCP guideline naïve group ranged from a high of 40% for TM3 (statin prescribing) to a low of 34% for TM5 (SGLT2/GLP1 prescribing in T2D+HF). PA/NPs ranged from a high of 38% for TM6 (SGLT2/GLP1 prescribing in T2D+CKD) to a low of 16% for TM1 (HbA1c testing), whereas the Endo guideline naïve group ranged from a high of 20% for TM1 (HbA1c testing) and TM3 (statin prescribing) to a low of 9% for TM5 (SGLT2/GLP1 prescribing in T2D+HF).

The third group, the guideline implementation group, consists of clinicians with high GK and high TM behavior attainment. Endos in the guideline implementation group ranged from a high of 33% for TM4 (SGLT2/GLP1 prescribing in T2D+ASCVD) and TM5 (SGLT2/GLP1 prescribing in T2D+HF) to a low of 13% for TM2 (renal function testing). PA/NPs in the guideline implementation group ranged from a high of 37% for TM1 (HbA1c testing) to a low of 9% for TM2 (renal function testing). PCPs ranged from a high of 17% for TM1 (HbA1c testing) to a low of 12% for TM4 (SGLT2/GLP1 prescribing in T2D+HF).


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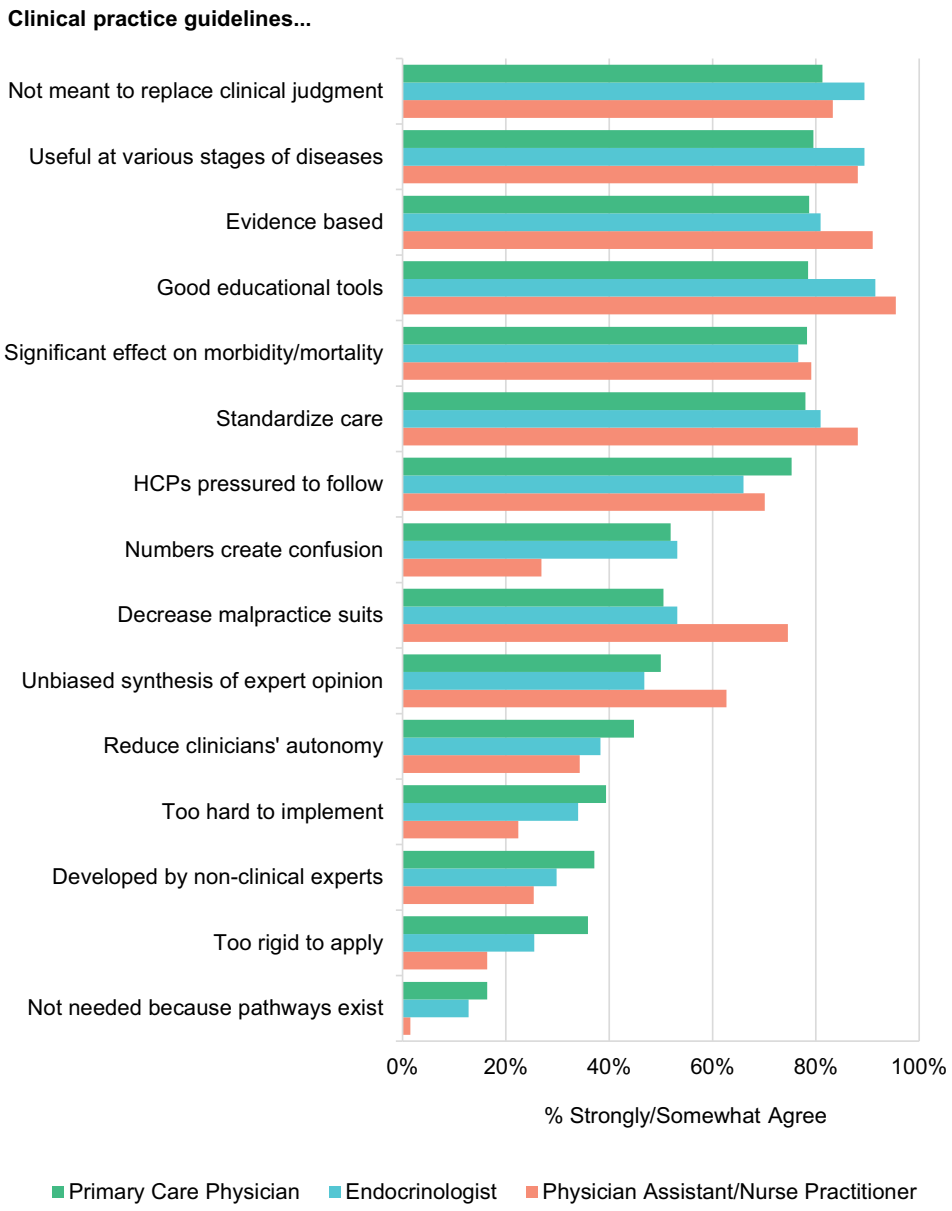


**Figure 4** Percentage of clinicians, by clinician type, who strongly or somewhat agreed with each of 15 general guideline attitude questions.
**Abbreviations**: HCP, healthcare professional.

The residual group is the smallest group and consists of clinicians who have low GK but high TM behavior attainment.

## Discussion

This study provides new insights into the disconnect between clinicians' knowledge of the American Diabetes Association (ADA) Standards of Care and their implementation of guideline-concordant treatment behaviors in routine practice. Although most clinicians demonstrated adequate guideline knowledge and expressed positive attitudes toward guidelines, treatment measure attainment was consistently suboptimal. The most common profile was the inertia group consisting of clinicians with high knowledge but low treatment adherence that was observed across all clinician types. This finding underscores that knowledge and favorable attitudes, while necessary, are insufficient to overcome therapeutic inertia.[14–16]

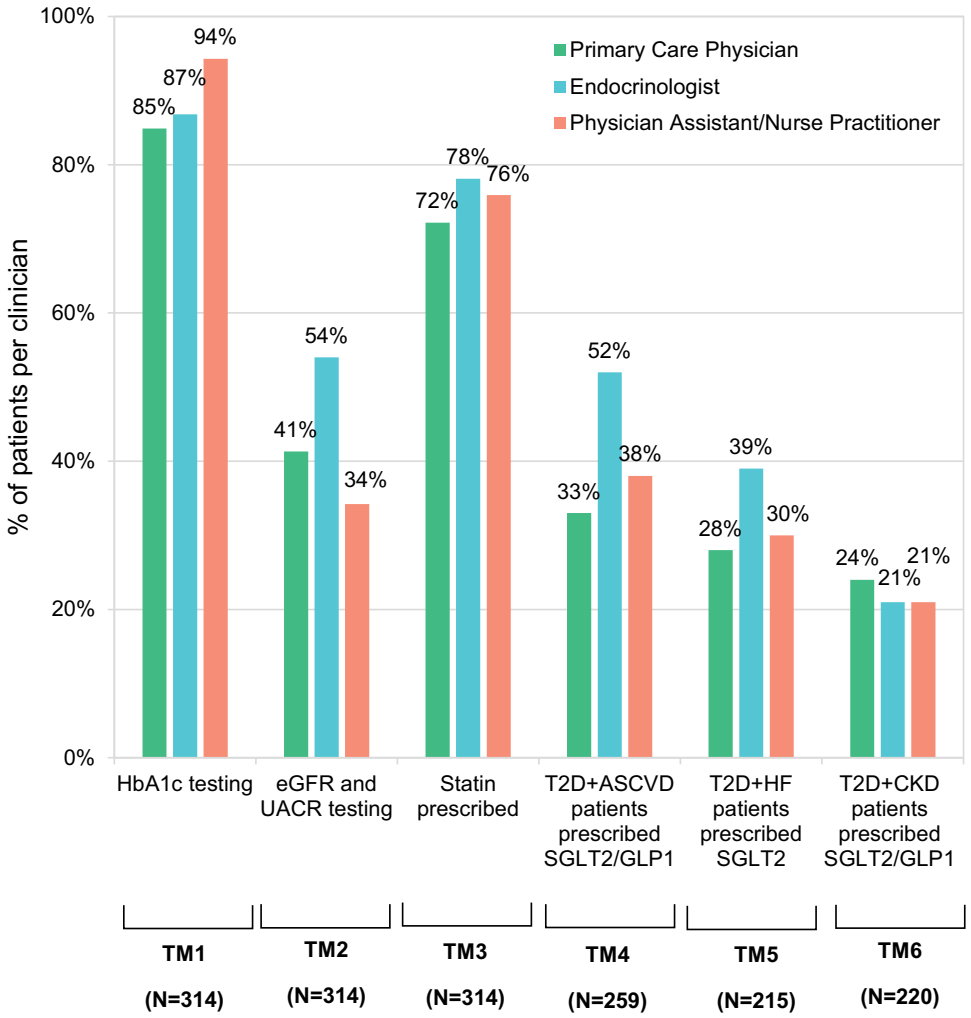


**Figure 5** Percentage of patients per clinician, by clinician type, who meet therapeutic management (TM) measure attainment of claims-based diabetes treatment measures, TM1 – TM6. TM measure assessment period is from 10/01/21 – 09/30/22.

**Abbreviations**: ASCVD, atherosclerotic cardiovascular disease; CKD, chronic kidney disease; eGFR, estimated glomerular filtration rate; GLP1, glucagon-like peptide-1; HbA1c, hemoglobin A1c; HF, heart failure; SGLT2, sodium-glucose cotransporter-2; T2D, Type 2 Diabetes; UACR, urine albumin-to-creatinine ratio.

Prior studies have described the "Knowledge–Attitude–Behavior" framework,[14,17] suggesting that improvements in clinician knowledge and attitudes should ultimately shape practice behaviors.[16] Our findings challenge this assumption. Despite high knowledge levels, therapeutic inertia was prevalent,[18,19] particularly in areas requiring newer pharmacologic adoption such as GLP-1 receptor agonists and SGLT2 inhibitors for patients with Type 2 Diabetes and comorbid ASCVD, heart failure, or CKD. The weak correlations observed between knowledge, attitudes, and behavior suggest systemic barriers, such as limited visit time, competing priorities, electronic health record constraints, medication cost and coverage issues, and patient reluctance, play a more decisive role than knowledge gaps alone.[9,20–25]

Provider-type differences further illustrate this complexity. Although endocrinologists had higher knowledge scores and better treatment attainment than PCPs or PA/NPs, they still showed high rates of inertia, suggesting that while specialty training may confer some advantage, even experts face barriers translating knowledge into practice. PA/NPs performed better than PCPs on several measures, which may reflect more structured practice environments, newer training, or closer adherence to standardized protocols. These findings point to specific groups, especially PCPs and PA/NPs, as key targets for interventions, and also emphasize that no group is immune to inertia.

The persistence of a small "residual" group with low knowledge but high treatment attainment highlights the influence of practice environments. Shared-care arrangements, clinic-specific protocols, or quality improvement


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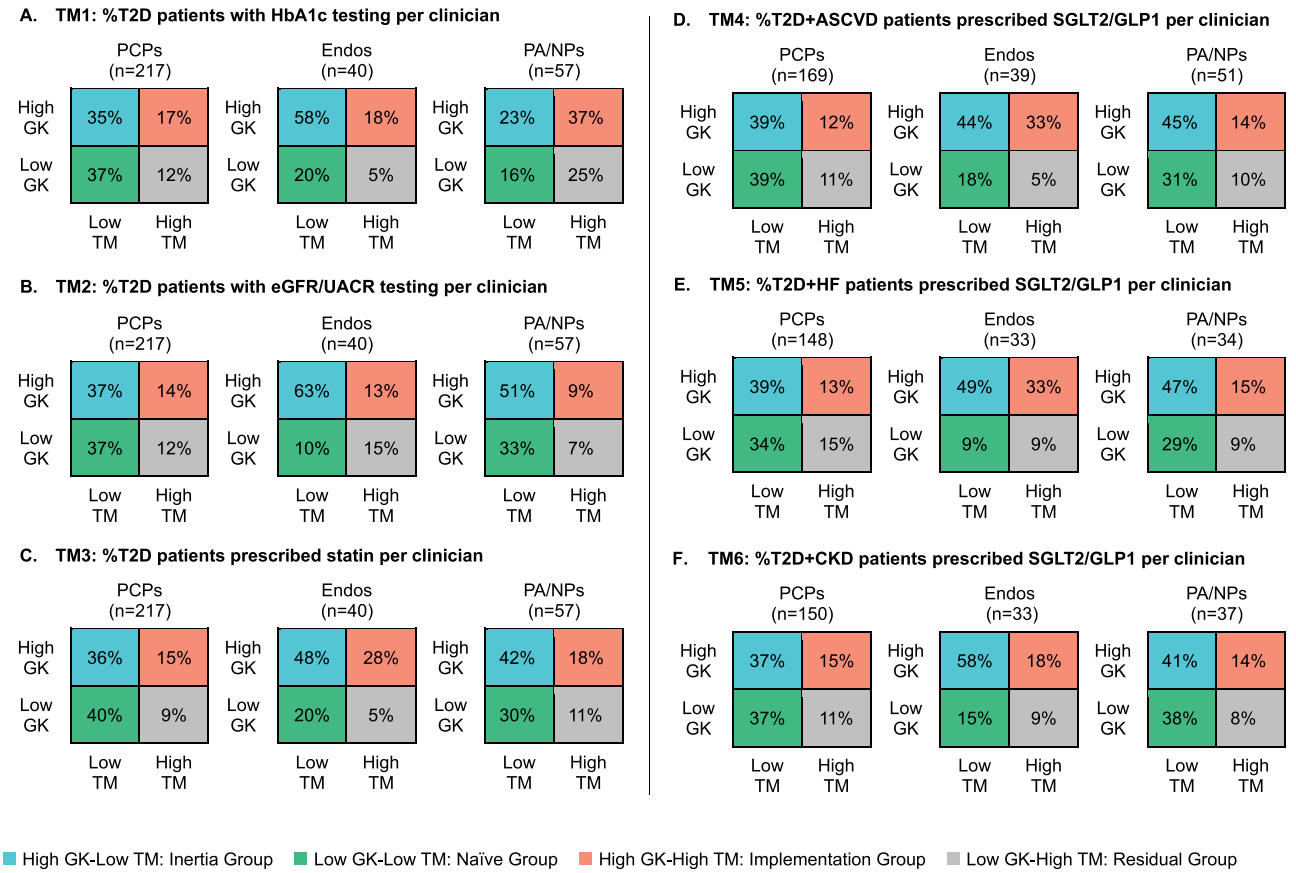


**Figure 6** (**A**–**F**) Relationship between ADA SOC Guideline Knowledge (GK) and attainment of therapeutic management measures, TM1 – TM6, by clinician type. High GK = clinician answered at least 80% of GK questions correctly; low GK = clinician answered less than 80% of GK questions correctly; high TM = at least 75% percentile TM attainment per clinician; low TM = less than 75% percentile TM attainment per clinician.

**Abbreviations**: ASCVD, atherosclerotic cardiovascular disease; CKD, chronic kidney disease; eGFR, estimated glomerular filtration rate; GLP1, glucagon-like peptide-1; HbA1c, hemoglobin A1c; HF, heart failure; SGLT2, sodium-glucose cotransporter-2; T2D, Type 2 Diabetes; UACR, urine albumin-to-creatinine ratio.

initiatives may help drive appropriate care independent of individual clinician knowledge. This observation reinforces the value of health system–level interventions in promoting adherence to guidelines.

## Limitations

This study has several limitations. The clinician survey had a low response rate, raising concerns about representativeness, and respondents may have been more guideline-aware than nonrespondents. However, a respondent vs nonrespondent analysis did not show any indications of systematic bias. Claims-based TM attainment measures could not capture patient preferences, comorbidity complexity, socioeconomic factors, or access barriers that may have influenced treatment attainment. Knowledge questions had construct limitations, with some scenarios allowing multiple defensible answers, which may have underestimated or misclassified true knowledge. Excluding calculation of TM measure attainment for clinicians with fewer than five patients may have limited generalizability. Finally, because the study period overlapped with publication of the 2021–2022 ADA guidelines, insufficient time may have elapsed for full guideline adoption. However, the clinical TM measures have been emphasized in ADA standards since 2019, suggesting the observed inertia is not solely due to timing.

## Conclusion

In this study, therapeutic inertia remained widespread across clinician types despite adequate knowledge of ADA cardiorenal standards and generally positive attitudes toward guidelines. Fewer than half of clinicians achieved high attainment on four of six TM measures. The disconnect between knowledge and behavior highlights the need for interventions that extend beyond

education. Targeted continuing medical education for PCPs and PA/NPs, integration of decision-support tools into electronic health records, benchmarking and feedback mechanisms, and team-based models leveraging pharmacists and diabetes educators may be required to translate knowledge into practice. Ultimately, reducing therapeutic inertia in type 2 diabetes care will require a multi-level strategy that addresses system, clinician, and patient barriers simultaneously.

## Prior Presentation

Parts of the study were presented as a poster at the American Diabetes Association (ADA) 84th Scientific Sessions, June 21–24, 2024, Orlando, FL; 10.2337/db24-1079-P.

## Data Sharing Statement

The data sets generated during and/or analyzed during the current study are not publicly available due to contractual obligations with the data sources.

## Ethical Approval

Institutional Review Board (IRB) approval from the WCG IRB (Study Number: 1328872) was obtained prior to the start of survey recruitment.

## Acknowledgments

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## Author Contributions

Judith J. Stephenson: Conceptualization; Data curation; Formal analysis; Methodology; Project administration; Visualization; Writing – original draft; Writing – review and editing. Nancy Witkowski: Conceptualization; Methodology; Writing – review and editing. Joseph L. Smith: Conceptualization; Data curation; Formal analysis; Methodology; Writing – review and editing. Anny C. Wong: Conceptualization; Methodology; Writing – review and editing. Lindsay G. S. Bengtson: Project administration; Supervision; Writing – review and editing. Vincent J. Willey: Conceptualization; Formal analysis; Funding acquisition; Methodology; Supervision; Visualization; Writing – review and editing. All authors have given approval of the final version to be published and agreed on the journal to which the manuscript has been submitted. Boehringer Ingelheim was given the opportunity to review the manuscript for medical and scientific accuracy as well as intellectual property considerations. Judith J. Stephenson is the guarantor of this work and, as such, has full access to all the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis. All authors agree to be accountable for all aspects of the work.

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## Disclosure

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