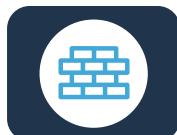




## The Role of Comprehensive Care Plans in Diabetes Management



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Treatment for diabetes is multifaceted— it includes monitoring of complications, escalation of glycemic treatments, dietary management, and achievement of identified treatment goals.<sup>1</sup> The American Diabetes Association (ADA) standards of care suggest that **a patient-centered approach to diabetes management should use a chronic care model involving close working relationships between patients and clinicians.**<sup>2</sup> This chronic care model emphasizes quality of care, coordination of medical visits with the entire care team, use of evidence-based guidelines to support decision-making, and use of clinical information systems that can provide both patient-specific and population-based information. According to the model, key actions for improving the quality of diabetes care overall include expanding the role of teams in implementing more intensive disease-management strategies, using electronic health records (EHRs), tracking medication history at a systems level, and empowering patients through education on diabetes and support for self-management.<sup>2</sup>

Many institutions choose to implement a comprehensive diabetes care plan through a **clinical care pathway**. Also known as a care pathway or integrated care pathway, a clinical care pathway is designed to guide clinicians to optimal treatment selection for a patient with a specific condition or disease; the primary goals are to improve quality of care, to reduce variations in clinical practice, and to promote efficient use of health care resources.<sup>3</sup> Clinical care pathways reflect the best clinical evidence available, and they are based on clinical practice guidelines.<sup>1,3</sup> Diabetes care pathways may utilize evidence-based guidelines from leading organizations

such as the American Association of Clinical Endocrinology (AACE) and the ADA. The AACE published updated diabetes care plan guidelines in 2022; its evidence-based algorithm published in 2023 is a practical guide for the comprehensive management of patients with type 2 diabetes (T2D).<sup>4,5</sup>

A well-thought-out clinical care pathway provides health systems with a roadmap for delivering the most appropriate treatment according to the most current clinical evidence and guidelines and in a timely and standardized manner.<sup>1,3</sup> Different from treatment guidelines, which are usually developed in a top-down

fashion, clinical care pathways are more often developed from the bottom up so that they closely fit the configuration of the particular health care organization.<sup>6</sup> These evidence- and expert-driven recommendations are multidisciplinary and collaborative, patient-centered, expert-driven, electronically

integrated, and outcomes-oriented (**Table**).<sup>7</sup> Outcome metrics show that optimal care delivery may include recognition of clinical outcomes, consideration of patient knowledge and self-management, implementation of evidence-based practices, and promotion of multidisciplinary teamwork.<sup>1</sup>

**Table. Key Features of Integrated Clinical Care Pathways<sup>7</sup>**

Feature	Explanation
Multidisciplinary and collaborative	Input from different medical disciplines across the health system, public stakeholders, and patients should be elicited, considered, and incorporated.
Electronically integrated	A computerized system for process monitoring should be used to assess disease dynamics, the application of the clinical care pathway, management costs, and achievement of objectives.
Outcomes-oriented	Quantitative and qualitative information including patient-reported outcomes should be identified and measurable so that the health system can assess its progress and identify areas for needed improvement.
Reflective	Organizational, financial, and technological needs should be assessed to determine areas for improvement. Education programs for health care providers, public stakeholders, and patients should be developed and ongoing.
Evidence-driven	The best evidence available should be used to develop the clinical care pathway for the local institution. Roles, tasks, responsibilities, indicators, and targets should be defined.

# Benefits of Comprehensive Care Plans and Clinical Care Pathways for Diabetes



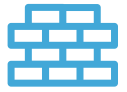
Diabetes care plans that reduce variation in treatment and improve accordance with evidence-based guidelines among providers may reduce cumulative incidence of diabetes-related complications, all-cause mortality, and cardiovascular risk and result in health care savings.<sup>8,9</sup> Clinical care pathways may help improve patient adherence by reducing redundancy and complexity in patient care algorithms.<sup>1,3,8</sup> Diabetes self-management education and support is associated with lower hemoglobin A<sub>1c</sub> (HbA<sub>1c</sub>) levels and improved self-care behaviors and quality of life.<sup>10</sup> Education is especially critical during diagnosis and transitions in life and care as well when

complicating factors develop and patients are not meeting treatment targets.<sup>11</sup> A qualitative, randomized controlled study conducted by investigators from the University of Chicago examined factors impacting adherence to diabetes medication among Mexican American patients.<sup>12</sup> The results revealed that poor communication and education regarding adverse effects of medications from providers were patient-reported barriers that resulted in less medication adherence. Conversely, interaction with providers that includes discussions about medication adherence was reported to be a facilitator for greater adherence.<sup>12</sup>

**Diabetes care plans that reduce variation in treatment and improve accordance with evidence-based guidelines among providers may reduce cumulative incidence of diabetes-related complications, all-cause mortality, and cardiovascular risk and result in health care savings.<sup>8,9</sup>**

Better adherence to insulin and combination therapy also has been associated with lower health care costs. The results of a 2020 retrospective claims database study using EHR data collected from 23,365 patients with T2D from 2012 to 2017 showed that patients with diabetes who showed greater adherence to insulin therapy had significantly lower all-cause total costs than did those who were nonadherent.<sup>13</sup> Similar results were seen in a study conducted from 2008 to 2014 that included 7320 patients with T2D on combination therapy involving basal insulin and a GLP-1 receptor agonist.<sup>14</sup>

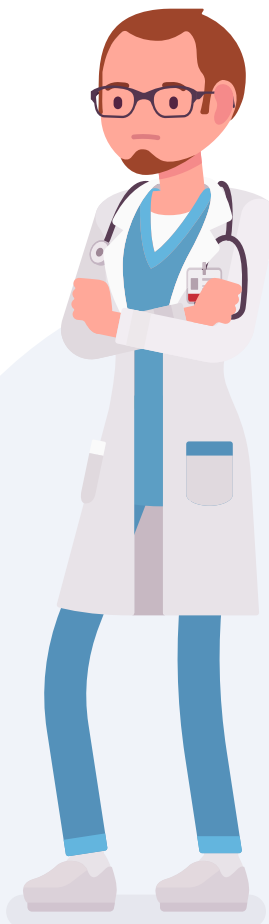
# Barriers to Adoption of Care Plans and Pathways



Barriers to adoption of clinical care pathways may occur at the staff (ie, clinician or management) or health care organization (ie, management, resources, or institutional structure) levels and may be influenced by such external factors as social policies or patient characteristics.<sup>6</sup> Various guidelines have been implemented in the past that failed to achieve the desired outcomes; analyses of these situations showed that factors such as patient education, doubts among physicians regarding recommendations, overly complex algorithms for diagnosis and treatment, excessive physician workload, and unnecessary tests for patients should be considered when developing clinical care pathways.<sup>15</sup> Furthermore, diabetes has multiple potential comorbidities and related complications; effective management of patients requires a collaborative multidisciplinary approach that includes specialists in diabetes care and education, physicians, and advanced practice providers (APPs).<sup>16</sup> Therefore, care plans and clinical care pathways should be considered to address these complexities of care and persuade stakeholders to buy into

them. Adaptations for particular institutional cultures can be accommodated by including stakeholders directly impacted by the pathway in the pathway's creation and implementation.<sup>6</sup> These stakeholders may include physicians, nurse practitioners, physician assistants, nurses, dietitians, exercise specialists, pharmacists, dentists, podiatrists, mental health professionals, and specialists in diabetes care and education.<sup>16</sup> In a 2016 review of 32 studies on integrated care interventions for T2D, social context factors identified as key facilitators for implementation included involving staff in decision-making and recruiting, ensuring buy-in, supplying effective leadership, cooperating within and outside of the practice, and sharing resources.<sup>17</sup> Guideline-based care plans and pathways can address these facets and emphasize the primary goal of diabetes management—to prevent or delay complications and maximize quality of life.<sup>16,17</sup>

**Diabetes has multiple potential comorbidities and related complications; effective management of patients requires a collaborative multidisciplinary approach that includes specialists in diabetes care and education, physicians, and advanced practice providers (APPs).<sup>16</sup>**



Key leaders from **Cleveland Clinic** and **Piedmont Physicians Endocrinology Buckhead** discuss the processes they used for implementing comprehensive care plans and clinical care pathways for diabetes management at their respective institutions. Guidance on EHR implementation was provided by a senior consultant for Epic Systems and a clinical designer at **Memorial Sloan Kettering**.



## Early Intervention Strategies for Diabetes Management



In the evolving landscape of diabetes management, proactive strategies that involve multidisciplinary care are being used to help patients achieve treatment goals. Historically, patients with newly diagnosed T2D were managed with a *treat-to-failure* approach in which dietary modification alone was implemented first and then followed by stepwise addition of diabetes medications if the treatment goal was not reached.<sup>18</sup> At the time of diagnosis, however, patients often have already lost over 80% of their pancreatic  $\beta$ -cell function; this, in turn, impacts their ability to reach HbA<sub>1c</sub> goals even when they use an increasing number of diabetes medications over time.<sup>18,19</sup> Therefore, a more aggressive **treat-to-target approach** should be implemented from the start when the residual  $\beta$ -cell function is at its highest, explained **Kevin Pantalone, DO**, Director of Diabetes Initiatives in the Department of Endocrinology at Cleveland Clinic in Cleveland, Ohio. With this approach, patients are treated aggressively up front with more frequent early intensifications of therapy and with the primary aim of reducing HbA<sub>1c</sub> until the predefined target is attained; after achieving this target, medications are added if HbA<sub>1c</sub> begins to move above the predefined target.<sup>18</sup>

Pantalone added that establishing comprehensive diabetes care pathways that focus on early and aggressive treatment necessitates multiple team members and touch points to improve the lowering of HbA<sub>1c</sub>

and, possibly, to help reduce variability in care, improve outcomes, and reduce costs. However, the biggest challenge continues to be finding ways to implement care pathways that can seamlessly integrate into clinicians' workflows. "Care pathways would work [best] if we could find a way to implement them into day-to-day routine clinical care to help providers see and manage patients more effectively rather than [having them considered as] an additional thing providers have to do without adding to the already time-constrained nature of their visits," he said. Further, he noted, "There need to be multiple touchpoints, and the full care team needs to be involved to help facilitate change." The results of a 2021 systematic review and meta-analysis found that nonphysician provider-based interventions that enabled pharmacists, nurses, or diabetes educators to initiate and modify treatment independently (as supported by appropriate guidelines) tended to better reduce **therapeutic inertia** and improve HbA<sub>1c</sub> than did physician-based interventions.<sup>20</sup>

***Therapeutic inertia* refers to the point at which providers fail to intensify therapy in a patient when treatment goals are not being met or to de-intensify therapy when appropriate.**<sup>21,22</sup>

In the care pathway developed in collaboration with primary care providers (PCPs) at Cleveland Clinic, patients with an HbA<sub>1c</sub> of less than 9% can be referred to the Department of Endocrinology. More often, however, they are referred to ambulatory primary care pharmacists, who then work closely with PCPs in the Cleveland Clinic system. This process ensures that endocrine specialists are seeing the most uncontrolled and/or challenging cases. Each of the family health centers has an embedded primary care ambulatory pharmacist who can be consulted by PCPs for management of diabetes, hypertension, and other health conditions. These providers can start patients on a continuous glucose monitor (CGM) or a new medication, and then subsequent follow-up would be with the PCP. Patients with an HbA<sub>1c</sub> greater than 9% are referred for an appointment within 7 days with members of the endocrinology team who then develop a care plan, connect patients with a diabetes educator, and arrange follow-up visits with an endocrine pharmacist or an endocrine APP.

The patient then has a follow-up with the endocrinologist or an APP at 3 and 6 months to assess improvements. If progress has been made (usually defined as an HbA<sub>1c</sub> < 7%), the patient is referred back to their PCP for continued diabetes management. This includes management of medication refills and diabetes-related questions, although the PCP can refer the patient back to the Department of Endocrinology, if needed. If a patient's HbA<sub>1c</sub> is still above the target at 6 months, members of the endocrinology team continue to work with the patient until the target HbA<sub>1c</sub> is reached.

At Cleveland Clinic, all patients with diabetes seen by endocrinology are referred to and encouraged to connect with a certified diabetes care and education specialist (DCES). Largely successful relationships between DCESs and patients provide in-depth, individualized assessments of patient needs to help identify the optimal strategies for management, explained **Diana Isaacs, PharmD, CDCES**, the Director of Education and Training in Diabetes Technology at Cleveland Clinic.

“Care pathways would work [best] if we could find a way to implement them into day-to-day routine clinical care to help providers see and manage patients more effectively rather than [having them considered as] an additional thing providers have to do without adding to the already time-constrained nature of their visits.”

—Kevin Pantalone, DO  
Cleveland Clinic

Conversely, at Piedmont and other smaller institutions having fewer staff, the Department of Endocrinology would be overwhelmed if diabetes care plans necessitated referral of all patients with diabetes to endocrinologists, shared **Jennifer Gilligan, MD**, an endocrinologist with Piedmont Physicians Endocrinology Buckhead in Atlanta, Georgia. The Piedmont system was developed as a mixed model of owned vs affiliated clinics; therefore, endocrinology availability across the system is far outmatched by the population served, and an up-front referral model is not currently realistic. Instead, patients with newly diagnosed diabetes are managed up front in the primary care setting, where they receive diabetes education from a provider and/or through diabetes classes.

The model focuses on ways that members of the Department of Endocrinology can support PCPs in providing education, in prescribing, and in giving updates on diabetes technology through a multithread strategy. Clinical pharmacists who are embedded within select primary care clinics provide guideline-directed prescribing education to the PCPs. In addition,



the level of diabetes support can vary widely among providers. Gilligan and her colleagues created grand rounds talks and recorded them for ongoing use to educate PCPs on insulin initiation and management of insulin regimens; follow-up talks to review oral and injectable noninsulin medications are also planned. Peer education is a crucial metric for the Piedmont endocrinology team; all endocrinologists are required to provide diabetes-related education to at least 1 group of PCPs annually to qualify for a metric-based bonus.

The team also hosts a conference each fall for members of the primary care teams. These conferences afford PCPs the opportunity to explore innovative diabetes medical devices, discover new and effective strategies for diabetes management, and engage with members of the endocrinology team. Fostering relationships between the departments of primary care and endocrinology can bolster electronic communications, lead to more *curbside consults* between providers, and defuse any referral tensions. "If I can answer a management question for a PCP [electronically], I can deter the need for a new patient consult and enable the PCP to continue to manage the patient," explained Gilligan. The first of a set of team seminars for PCPs was offered in fall 2023, and quarterly or biannual meetings are planned in 2024.

## Addressing Social Determinants of Health Concerns

Aspects of social determinants of health (SDOH) contribute heavily to multiple health disparities in people with diabetes, Isaacs shared. To help address these issues at Cleveland Clinic, an assessment module was developed in the EHR to define areas in which a patient may be struggling (eg, financial resources and security, tobacco use, housing instability, food insecurity, social connections, depression). The team ensures that social workers are available to help patients navigate potential SDOH-related barriers that may impact effective diabetes management. Isaacs noted that the education plans and the treatment or technology additions that could help them with successful management are highly individualized.

**"You need to spend the time with a [patient] to determine how they learn best and what their needs are. We do not implement a blanket intervention [across all patients]."**

—Diana Isaacs, PharmD, CDCES  
Cleveland Clinic

"You need to spend the time with a [patient] to determine how they learn best and what their needs are," she said. "We do not implement a blanket intervention [across all patients]."

Pantalone and his colleagues also found that use of virtual care and telemedicine, which increased substantially during the COVID-19 pandemic, can reduce barriers to care and can be preferred by some patients. In an analysis of patients with a prepandemic diagnosis of T2D in Cleveland Clinic's EHR, investigators found that patients with an HbA<sub>1c</sub> greater than 9%, Black patients, and individuals with Medicare or Medicaid insurance had higher odds of completing virtual primary care visits during the COVID-19 pandemic, whereas older and male patients had lower odds.<sup>23</sup> Patients with an HbA<sub>1c</sub> greater than 9% also had lower odds of completing primary care visits after they returned to the in-person setting, highlighting the importance of access to virtual care.

Pantalone noted that the convenience of virtual visits can help address some barriers that historically may have prevented patients from attending in-person visits (eg, needing to take time off from work, not having transportation, or having to secure childcare). Leveraging these types of visits, which can be done more frequently than in-person visits, may help with achieving HbA<sub>1c</sub> goals.



## Effective Diabetes Care Coordination Requires Stakeholder Alignment



Building an effective clinical care pathway requires having a suitable group of clinicians (including APPs, clinical pharmacists in the departments of Primary Care and/or Endocrinology, and diabetes educators) who can help patients reach their HbA<sub>1c</sub> goals and offset some of the load from endocrinologists, said Pantalone. Having a PCP champion who pushes for additional education and resources to improve diabetes outcomes “can make a huge difference” in effective implementation of the clinical care pathway, said Gilligan.

**Neha Katyal, PharmD**, Senior Epic Systems Consultant and Clinical Designer at Memorial Sloan Kettering, recommends that organizations interested in developing clinical care pathways should first look into leveraging any current process or workflows that could easily incorporate any new interventions or monitoring for a new program; this could minimize the impact of any extra workload on staff and systems. Regardless of whether an organization is using existing materials or developing new ones, she advised, it is important to ensure that its departments of Pharmacy and Nursing as well as physician champions are involved in the development process from the beginning. “Involving champions in the [development] from the beginning is going to lead to much better outcomes in terms of [provider] adherence, in terms of adoption, [and] in terms of understanding of the system and ease of use of the system,” she said.

Pantalone similarly explained that all stakeholders in the clinical care pathway need to agree on the referral and treatment processes to enable prompt appointments and follow-up. **Education of the stakeholders at staff meetings and in family health centers and community hospitals throughout northeast Ohio, for example, has improved the flow of the referral process and has been more effective than having best practice alerts embedded in EHRs, which were often ignored by providers**, said Pantalone. However, he noted that knowledge and education may not automatically change behavior among providers because of systemic barriers (eg, high cost and/or lack of insurance approval for new diabetes medications). Furthermore, Pantalone added, implementation can be ineffective, and more qualitative studies are needed to help identify the drivers of therapeutic inertia; currently, most studies that evaluate therapeutic inertia report outcomes that result from that inertia (eg, HbA<sub>1c</sub> above target, lack of timely treatment intensification) rather than focusing on identifying the underlying drivers or causes of the therapeutic inertia itself. He added that more implementation studies are needed to compare various ways to implement interventions or strategies and possibly improve achievement of HbA<sub>1c</sub> goals.

“**Involving champions in the [development] from the beginning is going to lead to much better outcomes in terms of provider adherence, in terms of adoption, [and] in terms of understanding of the system and ease of use of the system.**”

—Neha Katyal, PharmD  
Memorial Sloan Kettering

Primary care pharmacists embedded within clinics at Cleveland Clinic have been instrumental for titrating medications and providing additional diabetes education; this may be helpful for patients seen by a PCP, because access to a diabetes educator tends to be more limited in the primary care setting compared with the endocrinology setting. Isaacs explained that onboarding of primary care pharmacists in the process involves extensive shadowing and observation to ensure that the clinical care pathway is being followed; primary care pharmacists meet monthly and discuss any opportunities to optimize diabetes management.

Primary care pharmacists also have been instrumental in connecting patients with CGMs, which have been used increasingly in

the clinical setting in recent years, explained Isaacs. She added that CGMs were particularly beneficial during the COVID-19 pandemic because providers could monitor glycemia remotely. With CGMs, patients and providers can see how behaviors affect blood glucose levels in real time without multiple fingerstick measurements. Patients can then modify behavior more quickly than if HbA<sub>1c</sub> laboratory measurements are assessed only during clinic visits. “CGM has taken the *out of sight, out of mind* aspect away from [glucose monitoring] and has really empowered patients,” said Pantalone. “Providers can leverage that data to help change the behavior. It’s the behavior of both patient and provider that drives therapeutic inertia.”

## Developing and Implementing an EHR-Based Care Plan



When developing a clinical care pathway, members of organizations should identify their goals, the purpose of the pathway, best practice guidelines to use, and other factors outside of best practice that address organization- and patient population-specific considerations, said Katyal. The first phase is ideation and iteration in which an ideal system is mapped out with input from champions within the pharmacy, nursing, and physician divisions; an EHR consultant; and clinical operations. In addition, EHR system tools that could address the needs and achieve the goals are identified. Katyal added that managers of many organizations bring in a consulting team to assess the current system from the information technology and operational sides; they also may reach out to other health systems to find out how they implemented a care pathway, to determine the effectiveness of components, and to learn additional strategies for implementing a care pathway into their own system.

Katyal emphasized that beyond recognizing necessary data and their purposes, members of organizations must strategically collect and

address system limitations for their effective use. Giving providers tools early in the development process also is important, because changes are easiest to make in the testing and pilot stages. Furthermore, she explained, smaller pilot tests in a targeted group are often more effective than is piecemeal testing across the organization.

After the workflow is first launched, feedback tends to come in relatively quickly; therefore, noted Katyal, this feedback should be reviewed and incorporated within the initial 6 months of launch. Updates to the workflow are organization-specific, and they depend upon the degree to which key performance indicators and executive goals are met; however, she explained, they tend to occur biannually or annually in most cases.

To ensure that the Piedmont diabetes SmartSet remains current, Gilligan and her colleagues meet monthly to promptly address any updates following the release of new guidelines. She noted that integrating guideline updates into the SmartSet typically takes a month, with the time frame influenced by factors that include urgency

(eg, if it affects patient safety) and the relevant stakeholders. Routine updates can take about 3 months to implement into the EHR. PCPs receive email updates and undertake learning modules after system updates for informed education.

## EHR SmartSets That Incorporate Continuous Glucose Monitoring

In response to expansion of Medicare coverage in April 2023, Cleveland Clinic introduced a streamlined SmartSet for ordering CGMs that simplified the management of a growing number of eligible patients.<sup>24</sup> With this SmartSet, explained Isaacs, chart notes from the EHR can be sent directly to the durable medical equipment (DME) supply company for patients covered by Medicare and other insurances that cover CGMs under DME. Medicaid coverage of CGM through the pharmacy for any individual with diabetes in Ohio has also helped to increase uptake for patients on Medicaid, who are often seen in the primary care setting, she added.

The remote patient management platforms enable providers to view data from many (but not all) different CGM devices. Medical assistants generally input the ambulatory glucose profile report into the chart before the patient's visit. However, Isaacs noted that the multiple different portals used in endocrinology practice for the various CGM and closed-loop pump devices can be challenging to manage. To keep track of the device and the system it uses, she created a list of the different portals, the corresponding mobile application, and the preferred reports to review and made it available on a central shared drive for access by appropriate medical staff. An assistant nurse manager keeps up with the portals and adds additional portals as needed and orients new employees to preferred reports and apps that patients need to download.

## EHR SmartSets for Medication Selection

Members of the Diabetes Task Force and other task forces at Piedmont meet regularly to discuss current clinical practice guidelines and identify institution-wide gaps in care. Through these sessions, the team determined that PCPs in the organization may benefit from guidance on prescribing appropriate medications and increasing aggressiveness of treatment. To address this unmet need, Gilligan shared, **a SmartSet implemented in the EHR prioritizes the sequence of recommended diabetes medications appearing in the order set according to the most up-to-date guidelines.** Additional considerations that providers should address (such as podiatry and diabetes education) and links to clinical practice guidelines also are included to provide a comprehensive resource for diabetes management. According to Gilligan, **this SmartSet could be particularly helpful for mid-level PCPs—it provides guidance on a wide range of a patient's potential needs (eg, glucose test strips, needles, insulin doses, and 30-day starter supply of a medication).** She shared that the team identified tools to streamline prescribing decisions, reduce data noise, and remove barriers so providers can make clinically aligned choices.



Pantalone and his colleagues at Cleveland Clinic similarly created and implemented a diabetes intensification tool into the EHR to assist providers in choosing the most appropriate diabetes medication for a given patient.<sup>24</sup> This tool had a best practice alert that prompted physicians to consider therapeutic intensification for a patient with an HbA<sub>1c</sub> of 8% or higher. If physicians chose to intensify treatment, they were redirected to a SmartForm that assisted them through the intensification; it included factors that could influence treatment decisions (eg, patient weight, body mass index, kidney function, current medications, allergies to medication). The SmartForm also enabled providers to select new diabetes medications based on patient-specific needs including cardiovascular risk reduction, degree of HbA<sub>1c</sub> lowering, risk for hypoglycemia, cost, and weight loss.<sup>25</sup> Pantalone noted that the SmartForm initially was well received by clinicians, yet uptake at implementation sites was low (9.7% of patient encounters), likely because of time limitations during patient visits and interruptions

to workflow. Additionally, provider knowledge concerning use of SGLT2 inhibitors and GLP-1 receptor agonists improved with implementation of the tool, but the number of prescriptions and percentage of patients achieving an HbA<sub>1c</sub> of less than 8% was not different when compared with viewing of sites that did not include the tool.<sup>24</sup> Pantalone suggested that **implementation of the tool, asynchronously to office visits and better optimized within provider workflows—as well as scheduling visits specifically focused on diabetes care—could help improve its utilization by providers and, in turn, patients' attainment of HbA<sub>1c</sub> goals.** However, he noted, many of the new diabetes medications, even within a given class, have slightly different indications (eg, relating to primary and/or secondary prevention of cardiovascular disease) that are difficult to capture in an EHR tool and that may be too complicated for successful incorporation into current primary care practice. More research is currently underway at Cleveland Clinic.

## Enhancing Diabetes Care Beyond HbA<sub>1c</sub>



At Cleveland Clinic, quality metrics used for patients with diabetes include determination of HbA<sub>1c</sub> and kidney function (ie, urinary albumin and serum creatinine levels), blood lipid concentration, blood pressure measurement, and examinations for health maintenance (eg, immunizations, eye examinations). CGM has also been particularly beneficial for assessing hypoglycemic episodes, which are not captured with an HbA<sub>1c</sub> test, explained Isaacs. “It’s not all about the [Hb]A<sub>1c</sub>,” she said. “You don’t want a patient to [spend] 10% of their time in hypoglycemia, especially if they’re an older adult.”

Dashboards are used to evaluate patient referrals and appointment wait times for provider access; Pantalone highlighted, however, that they are unable to identify the reasons for therapeutic inertia. “[Currently,] dashboards highlight observations but lack insights into underlying behaviors,” he said. “Enhancing dashboard

granularity is key to deeper understanding [of therapeutic inertia] and continuous learning.”

Gilligan noted that an increased number of patients on appropriate medications who are referred from PCPs indicates the effectiveness of the Smart prescribing approach. Provision of additional education and support in primary care by members of the endocrinology team may further help in reaching this target. “If primary care teams have dedicated support, they can offer patients onsite guidance for their first injection, facilitated by our skilled APPs or [pharmacists who are] available throughout the day. This personalized approach ensures that patients not only receive immediate hands-on assistance but also engage in a separate conversation with our experts, covering crucial details such as insulin storage. This comprehensive support model is key to achieving better patient outcomes.”

## Conclusions

Members of an organization who are looking to develop and implement a diabetes care pathway into the EHR should have a thorough understanding of their current system, Katyal recommends. They should initiate communication with an EHR representative early to secure necessary tools and establish an interdisciplinary team from the outset for a collaborative approach across various disease states.

In crafting an effective clinical care pathway with resource constraints, noted Gilligan, a clinic's prescription practices must be understood. Assessment of how the newest medications are used and adherence to optimal algorithms are crucial. Each system must examine its unique needs, population characteristics, and potential barriers to metric achievement. Managers must decide either to address these factors at a system level or to acknowledge that diverse clinic dynamics necessitate a tailored approach.

Isaacs advised that peer endocrinology pharmacists who want to implement a diabetes care pathway initiate collaborative discussions. They should start with smaller, focused initiatives rather than elaborate paths to facilitate learning and idea-sharing.

To improve clinical care pathway adoption and reduce therapeutic inertia, Pantalone emphasized, high-grade qualitative studies are needed to pinpoint optimal strategies for enhancing the adoption of clinical care pathways. He advocated that insightful, meticulously designed qualitative research that is executed within a health care organization be substituted for repetitive EHR patient studies with generic statistics. Such studies should showcase effective behavioral changes that genuinely lead to improved HbA<sub>1c</sub> outcomes.

## Key Learnings

- Clinical pathways streamline the implementation of an aggressive treat-to-target strategy for newly diagnosed diabetes, which is likely to be highly effective in promoting HbA<sub>1c</sub> goals.
- EHR SmartSets can be particularly useful for helping primary care practitioners navigate the complex technological requirements for CGMs and nuanced indications for new diabetes medications.
- The usability of EHR-based tools is crucial. Although informative tools exist, their feasibility hinges on seamless integration into clinician workflows. Qualitative studies are essential to pinpoint optimal implementation strategies.

# Checklist for Developing a Comprehensive Clinical Care Plan in Diabetes\*



## Key Component

Early intervention strategies involve:

- implementing a proactive *treat-to-target* approach from the start of diabetes diagnosis; and
- emphasizing an aggressive up-front treatment to maximize residual  $\beta$ -cell function.

Multidisciplinary team involvement entails:

- establishing care plans with multiple team members.

Referral and treatment processes include:

- developing clear referral and treatment processes for patients; and
- facilitating prompt appointments and follow-up through stakeholder alignment.

Nonphysician provider-based interventions comprise:

- integrating nonphysician providers for independent treatment initiation and modification to reduce therapeutic inertia and improve hemoglobin A<sub>1c</sub> outcomes.

Electronic health record-based tools incorporate:

- identifying goals, purpose, and best practice guidelines for electronic health record-based care plans; and
- involving provider champions in the development process and strategically collecting relevant data.

Addressing aspects of social determinants of health involves:

- implementing an electronic health record-based assessment module to identify social determinants of health-related barriers; and
- providing individualized education plans and treatment options to address patients' unique needs.

Virtual care and telemedicine encompass:

- leveraging virtual care and telemedicine to reduce barriers and improve accessibility; and
- analyzing patient demographics to tailor virtual care strategies effectively.

Stakeholder education entails:

- educating stakeholders on care plan processes through team meetings and community outreach; and
- addressing systemic barriers and ensuring that knowledge translates into effective behavior changes.

The pharmacists' role encompasses:

- integrating both primary care and endocrinology pharmacists into the care plan; and
- ensuring thorough onboarding, shadowing, and observation to maintain plan adherence.

Continuous improvement and SmartSets incorporate:

- establishing mechanisms for continuous improvement based on feedback; and
- developing electronic health record SmartSets for streamlined processes, including ordering continuous glucose monitors and other diabetes management technology and selecting medication.

\*Based on expert interview feedback included in this publication (February 2024)



## References

1. Grant P, Chika-Ezerioha I. Evaluating diabetes integrated care pathways. *Practical Diabetes*. 2014;31(8):319-322. doi:10.1002/pdi.1894
2. American Diabetes Association Professional Practice Committee. 1. Improving care and promoting health in populations: standards of care in diabetes-2024. *Diabetes Care*. 2024;47(suppl 1):S11-S19. doi:10.2337/dc24-S001
3. Chawla A, Westrich K, Matter S, Kaltenboeck A, Dubois R. Care pathways in US healthcare settings: current successes and limitations, and future challenges. *Am J Manag Care*. 2016;22(1):53-62.
4. Blonde L, Umpierrez GE, Reddy SS, et al. American Association of Clinical Endocrinology Clinical Practice guideline: developing a diabetes mellitus comprehensive care plan-2022 update. *Endocr Pract*. 2022;28(10):923-1049. doi:10.1016/j.eprac.2022.08.002
5. Samson SL, Vellanki P, Blonde L, et al. American Association of Clinical Endocrinology consensus statement: comprehensive type 2 diabetes management algorithm - 2023 update. *Endocr Pract*. 2023;29(5):305-340. doi:10.1016/j.eprac.2023.02.001
6. Evans-Lacko S, Jarrett M, McCrone P, Thornicroft G. Facilitators and barriers to implementing clinical care pathways. *BMC Health Serv Res*. 2010;10:182. doi:10.1186/1472-6963-10-182
7. Vrijhoef HJ, de Belvis AG, de la Calle M, et al. IT-supported integrated care pathways for diabetes: a compilation and review of good practices. *Int J Care Coord*. 2017;20(1-2):26-40. doi:10.1177/2053434517714427
8. Wan EYF, Fung CSC, Jiao FF, et al. Five-year effectiveness of the multidisciplinary risk assessment and management programme-diabetes mellitus (RAMP-DM) on diabetes-related complications and health service uses-a population-based and propensity-matched cohort study. *Diabetes Care*. 2018;41(1):49-59. doi:10.2337/dc17-0426
9. Jiao FF, Fung CSC, Wan EYF, et al. Five-year cost-effectiveness of the multidisciplinary risk assessment and management programme-diabetes mellitus (RAMP-DM). *Diabetes Care*. 2018;41(2):250-257. doi:10.2337/dc17-1149
10. American Diabetes Association Professional Practice Committee. 5. Facilitating positive health behaviors and well-being to improve health outcomes: standards of care in diabetes-2024. *Diabetes Care*. 2024;47(suppl 1):S77-S110. doi:10.2337/dc24-S005
11. Powers MA, Bardsley JK, Cypress M, et al. Diabetes self-management education and support in adults with type 2 diabetes: a consensus report of the American Diabetes Association, the Association of Diabetes Care & Education Specialists, the Academy of Nutrition and Dietetics, the American Academy of Family Physicians, the American Academy of PAs, the American Association of Nurse Practitioners, and the American Pharmacists Association. *Diabetes Care*. 2020;43(7):1636-1649. doi:10.2337/dci20-0023
12. Baghikar S, Benitez A, Fernandez Piñeros P, Gao Y, Baig AA. Factors impacting adherence to diabetes medication among urban, low income Mexican-Americans with diabetes. *J Immigr Minor Health*. 2019;21(6):1334-1341. doi:10.1007/s10903-019-00867-9
13. Eby EL, Bajpai S, Faries DE, Haynes VS, Lage MJ. The association between adherence to insulin therapy and health care costs for adults with type 2 diabetes: evidence from a U.S. retrospective claims database. *J Manag Care Spec Pharm*. 2020;26(9):1081-1089. doi:10.18553/jmcp.2020.26.9.1081
14. Lin J, Lingohr-Smith M, Fan T. Real-world medication persistence and outcomes associated with basal insulin and glucagon-like peptide 1 receptor agonist free-dose combination therapy in patients with type 2 diabetes in the US. *Clinicoecon Outcomes Res*. 2016;9:19-29. doi:10.2147/CEOR.S117200
15. Grol R. Successes and failures in the implementation of evidence-based guidelines for clinical practice. *Med Care*. 2001;39(8; suppl 2):I146-I154. doi:10.1097/00005650-200108002-00003
16. American Diabetes Association Professional Practice Committee. 4. Comprehensive medical evaluation and assessment of comorbidities: standards of care in diabetes-2024. *Diabetes Care*. 2024;47(suppl 1):S52-S76. doi:10.2337/dc24-S004
17. Busetto L, Luijckx KG, Elissen AMJ, Vrijhoef HJM. Context, mechanisms and outcomes of integrated care for diabetes mellitus type 2: a systematic review. *BMC Health Serv Res*. 2016;16:18. doi:10.1186/s12913-015-1231-3
18. Campbell IW. Need for intensive, early glycaemic control in patients with type 2 diabetes. *Br J Cardiol*. 2000;7(10):625-631.
19. DeFronzo RA. Banting Lecture. From the triumvirate to the ominous octet: a new paradigm for the treatment of type 2 diabetes mellitus. *Diabetes*. 2009;58(4):773-795. doi:10.2337/db09-9028
20. Powell RE, Zaccardi F, Beebe C, et al. Strategies for overcoming therapeutic inertia in type 2 diabetes: a systematic review and meta-analysis. *Diabetes Obes Metab*. 2021;23(9):2137-2154. doi:10.1111/dom.14455
21. Khunti K, Davies MJ. Clinical inertia-Time to reappraise the terminology? *Prim Care Diabetes*. 2017;11(2):105-106. doi:10.1016/j.pcd.2017.01.007
22. Rodriguez P, San Martin VT, Pantalone KM. Therapeutic inertia in the management of type 2 diabetes: a narrative review. *Diabetes Ther*. 2024;15(3):567-583. doi:10.1007/s13300-024-01530-9
23. Misra-Hebert AD, Hu B, Pantalone KM, Pfoh ER. Primary care health care use for patients with type 2 diabetes during the COVID-19 pandemic. *Diabetes Care*. 2021;44(9):e173-e174. doi:10.2337/dc21-0853
24. FAQs on CGM coverage criteria changes in Medicare. American Diabetes Association. Accessed June 10, 2024. <https://diabetes.org/advocacy/cgm-continuous-glucose-monitors/faqs-medicare-coverage>
25. Pantalone KM, Rajpathak S, Ji X, et al. Addressing therapeutic inertia: development and implementation of an electronic health record-based diabetes intensification tool. *Diabetes Spectr*. 2023;36(2):161-170. doi:10.2337/ds22-0031



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