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Uncovering the cost of diabetes care gaps

Understanding the impact of fragmentation on outcomes and spending

Diabetic care insights study
See how connecting the dots from fragmented data can help guide smarter diabetes care interventions

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Executive summary

In diabetes care, a missed A1C test is often more than an isolated gap. It frequently occurs alongside other outstanding care needs, such as eye exams, foot screenings, medication-related measures or treatment evaluations. An analysis of 16,672 commercially insured adults with diabetes reinforces what many clinicians see in practice—care gaps often occur together. What may appear to be a single missed measure can provide valuable insight into broader care needs and create opportunities for more coordinated, proactive member support.

Identifying care gaps can help uncover opportunities to connect people with recommended, evidence-based care, but it's only one part of effective chronic disease management. Addressing gaps early can help people stay engaged in their care, support better health outcomes and reduce avoidable medical costs.

Diabetes affects 38 million Americans* and requires ongoing monitoring and coordinated care to help prevent serious complications. Missed recommended services—such as hemoglobin A1C (HbA1c) testing, eye exams, foot evaluations and medication management —can significantly increase the risk of complications and hospitalizations that lead to higher health care costs* and long-term health issues.*

Many people with diabetes experience more than one care gap at the same time. In fact, nearly 70% have two or more concurrent gaps.* These gaps can compound one another, increasing the risk of complications such as kidney disease and vision loss if they are not addressed. For example, a person may have uncontrolled A1C levels, miss follow-up appointments and need medication support simultaneously. When multiple gaps overlap, important health concerns may go unnoticed or untreated, increasing the likelihood of serious illness over time.

Traditional, one-size-fits-all care models* often fall short in addressing this complexity. Improving outcomes requires a more connected, ongoing approach that considers the full picture of a person's needs—including clinical, behavioral and social factors.

This study uses network analysis and statistical modeling to explore how the **diabetes care gap network** is connected and how it may influence disease control and health care costs.



The findings suggest that care gaps can be early signals of broader care needs. By identifying and addressing these gaps through a coordinated, whole-person approach, organizations may be able to improve health outcomes and manage health care spending more effectively.

Analysis

Identifying gaps in diabetic care

Care gaps were identified using medical and pharmacy claims data from adults with diabetes who were enrolled in commercial health plans between 2023 and 2024. The study included 16,672 individuals, with an average age of 57 years; 54.3% were male.

Care gaps were defined based on established clinical guidelines and recommended care practices from organizations such as the American Diabetes Association (ADA) and the Centers for Disease Control and Prevention (CDC). These recommendations include routine HbA1c testing, eye and foot exams, appropriate treatments and management of related health conditions.

A care gap was considered “open” when claims and related data showed that a recommended service, treatment or follow-up had not been completed during the study period. The analysis focused on gaps that were first identified in the first quarter of 2024.

Using network analysis to map gaps in care

People with diabetes often interact with many parts of the health care system throughout their care journey, including primary care providers, specialists, pharmacies and nutrition support services. Together, these touchpoints form a broader network of care. To gain a clearer picture of how care gaps are connected, this study used a method called network analysis. Rather than looking at each care gap in isolation, network analysis helps reveal how gaps may occur together and influence broader patterns of care. Commonly used in health and social sciences, this approach uses visual maps to show relationships between different factors.

In the network, each open care gap—such as a missing routine HbA1c test—was represented as a point, or "node." When two gaps occurred in the same person, they were connected by a line, or "edge." These connections helped identify patterns and clusters of gaps that frequently occurred together.

To better understand the role of each care gap, two standard measures were used. The first, called degree centrality, measures how many direct connections a gap has to other gaps, helping identify which gaps most commonly occur alongside others. The second, called betweenness centrality, measures how often a gap acts as a link between different groups of gaps, helping identify gaps that may connect multiple areas of care.

By examining these relationships, this approach provides a more complete view of diabetes care gaps—not only identifying which gaps are common but also showing how they may connect and interact across the broader care journey.

Assessing health status and costs

Statistical models were used to examine how the number of open care gaps related to health outcomes and health care costs, while accounting for factors like age and self-reported sex.* This analysis helped estimate how each additional care gap may be associated with a greater likelihood of poorer outcomes.

Health status (A1C control)

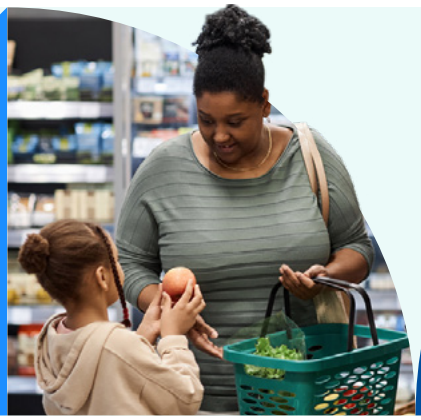
Members were considered to have uncontrolled blood sugar when their most recent A1C result during the study period was above 8%. Because the A1C test reflects average blood sugar levels over the previous two to three months, it provides a helpful picture of diabetes management over time.* The 8% threshold aligns with Health Care Effectiveness Data and Information Set (HEDIS) national quality standards, which are commonly used to measure and compare health care quality in the United States.

Health care costs

Changes in health care spending were also evaluated. Members were identified if their total health care costs increased by more than 8.5% compared with the previous year. This threshold was used to help identify individuals whose care needs—and related health care costs—increased beyond the expected year-over-year change.*

Evaluating acute care expenses

Average costs for emergency department visits and hospital stays were also compared descriptively based on the number of care gaps that remained open during the study period. Because these services can contribute substantially to overall health care costs, they provide an important view of health care utilization and spending. To make this easier to understand, members were grouped into three categories based on the number of open care gaps they had: 1–2 gaps, 3–4 gaps and 5 or more gaps.



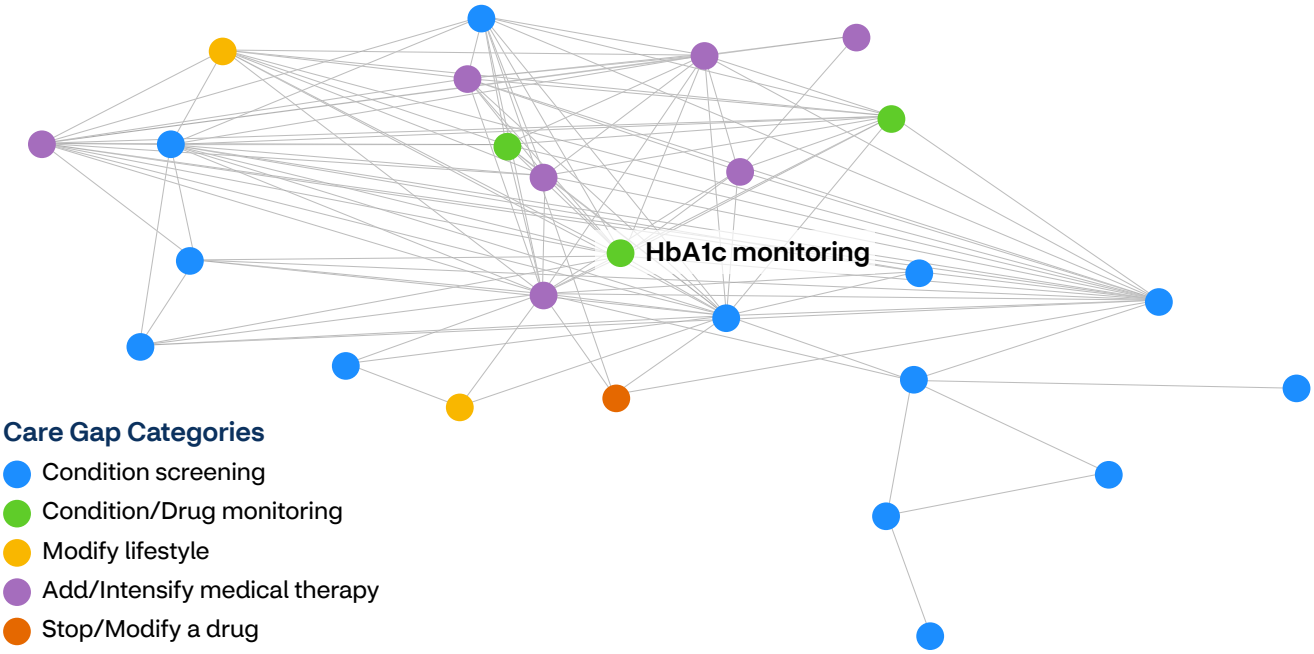
Results: Uncovering the challenges of care gaps

Results indicated opportunities to close several diabetes-related care gaps, particularly for preventive screenings, treatment management and ongoing monitoring.

Chart 1: Care gaps were interconnected, and members often had multiple open gaps

Network diagram of 26 diabetes-related care gaps. Each node represents a specific care gap (colored by clinical category) that remained open during the evaluation year.

The diabetes care gap network



Key takeaways

About half of care gaps were related to preventive screenings. These screenings made up 42% of all connections in the network, suggesting that members who miss them may have had other gaps too.

A1C monitoring emerged as a key connection point. Open A1C monitoring gaps frequently appeared alongside other open gaps, making A1C testing a valuable opportunity for additional care coordination or outreach.

Missing A1C tests often go hand-in-hand with other gaps. Members who were overdue for recommended routine A1C monitoring were also more likely to have gaps related to treatment changes, screenings or follow-up care. According to CDC recommendations*, people with diabetes should have an A1C test at least twice a year to help keep their condition well managed.

Chart 2: Higher numbers of open care gaps were linked to uncontrolled A1C and increased costs

Multivariable logistic regression results of the number of open care gaps and outcomes for uncontrolled A1C and escalation in cost of care with corresponding Average Marginal Effects (AMEs), 95% Confidence Intervals (CIs), and P values.

Variable		Absolute change in probability (AME, %)	95% CI	*P* value	Interpretation
Uncontrolled A1C (>8%)	Care gaps (count)	+2.34	1.43, 3.24	<0.001	Each additional open care gap was associated with a 2.3% increase in the probability of having uncontrolled A1C
	Age (years)	-0.14	-0.19, -0.10	<0.001	Older individuals tended to be slightly less likely to have uncontrolled A1C
	Male (vs female)	+3.97	2.91, 5.02	<0.001	Male individuals were estimated to be 4% more likely to have uncontrolled A1C compared with female individuals
Change in cost of care (>8.5%)	Care gaps (count)	+1.92	0.48, 3.36	0.009	Each additional open care gap was associated with a 1.9% increase in the probability of cost escalation
	Age (years)	+0.00	-0.06, 0.06	0.997	Not statistically significant
	Male (vs female)	-0.95	-2.47, 0.57	0.223	Not statistically significant

Key takeaways

More care gaps were associated with poorer outcomes and higher costs. After accounting for age and sex, members with more open care gaps had a higher estimated likelihood of uncontrolled A1C and increased health care spending.

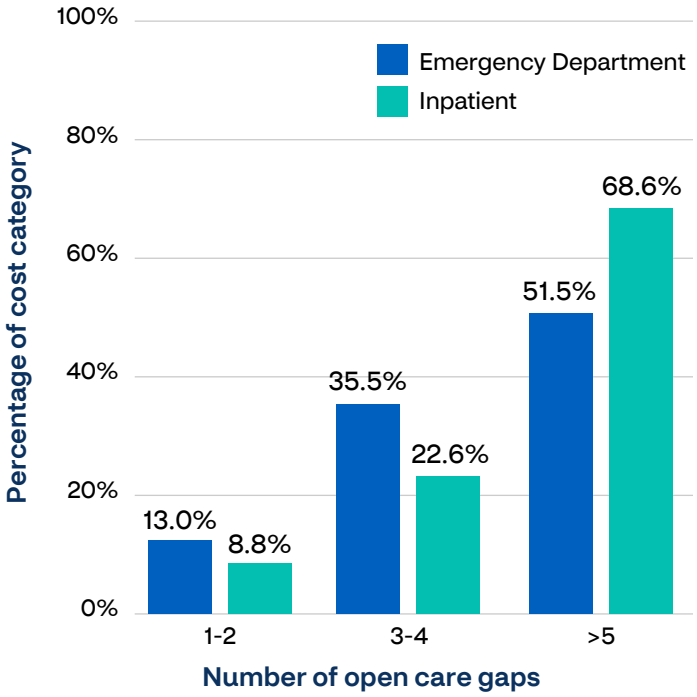
Each additional gap was linked to a greater likelihood of uncontrolled A1C. In this analysis, the chance of having uncontrolled A1C increases by about 2.3% for each additional open gap—highlighting the importance of addressing gaps early.

Additional care gaps were also associated with higher health care costs. Each additional open gap was associated with an estimated 1.9% higher probability of increased cost of care—suggesting that closing gaps proactively may support more effective cost management.

These results suggest that addressing even a few open care gaps may help support disease and cost management.

Chart 3: As care gaps increased, emergency department and inpatient costs tended to rise

Comparisons across member groups showed a clear pattern – average emergency department and inpatient costs tended to increase as the number of open care gaps grew.



Key takeaways

These descriptive findings suggest a relationship between open care gaps and emergency department and inpatient costs. Members with more open gaps tended to have higher average costs in these categories during the evaluation period.

Emergency department costs were higher among members with more open care gaps

- **~4x higher** observed ED costs for those with 5+ gaps compared to those with 1–2
- **~1.5x higher** observed ED costs for those with 5+ gaps compared to those with 3-4
- **~2.7x higher** observed ED costs for those with 3-4 gaps compared to those with 1–2

Inpatient costs showed a similar descriptive pattern

- **~7.8x higher** observed inpatient costs for those with 5+ gaps compared to those with 1–2
- **~3x higher** observed inpatients costs for those with 5+ gaps compared to those with 3-4
- **~2.6x higher** observed inpatient costs for those with 3-4 gaps compared to those with 1–2

Care gap resolution: Transforming diabetes care

Understanding the challenges

Many people with diabetes can have multiple open care gaps, particularly related to preventive screenings, condition monitoring and follow-up care. In this analysis, a higher number of open gaps was associated with greater likelihoods of uncontrolled A1C and higher health care costs.

Together, these findings suggest the potential value of a coordinated approach to diabetes care—one that helps members stay current with recommended screenings, monitoring and follow-up care to support better health outcomes and more sustainable use of health care resources over time.



Reframing the approach:

The Transform Diabetes Care® program

Transform Diabetes Care® (TDC) is designed to provide more personalized diabetes support by using medical and pharmacy claims data, lab results and other available information to better understand each member's needs.

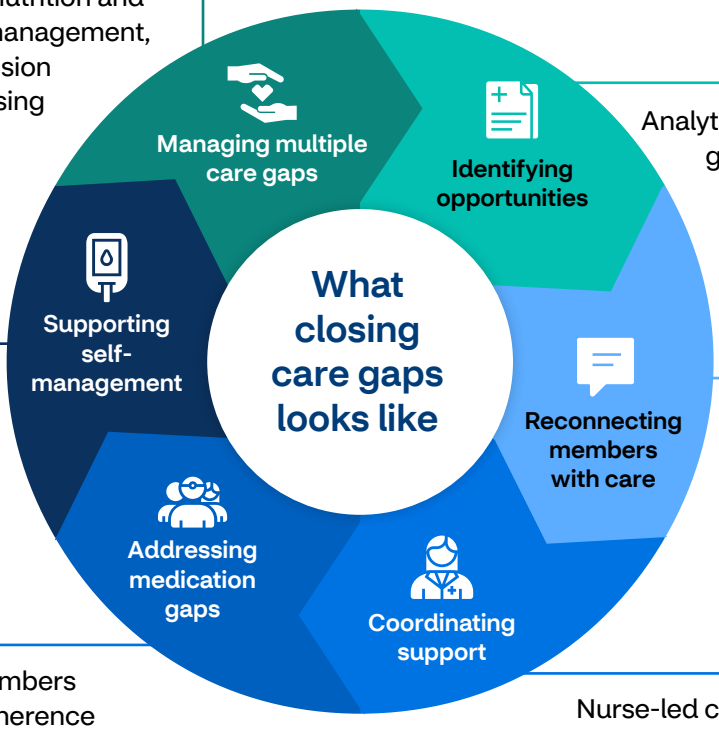
Through personalized communications and multiple engagement channels, TDC is designed to support members based on their individual needs and circumstances— whether they need help with preventive care, A1C monitoring, medication adherence, device access, lifestyle support or other potential barriers. By connecting data-driven insights with personalized outreach and clinical support, the program aims to close care gaps, support better disease management and more sustainable health care cost patterns over time.

Provides a comprehensive view of each member

TDC brings together claims, lab results, medication data and other available information to identify members with diabetes and understand potential gaps in care. These insights are combined with clinical history, engagement patterns and member-reported concerns to create a more complete view of each member's health status and care needs.

The program monitors more than 120 health-related indicators—from missed screenings to medication-related issues, comorbidity-related risks and lifestyle factors— helping identify opportunities for timely outreach and support. This helps care teams focus on areas where well-timed support and prevention may help members stay engaged in recommended care and reduce risks of developing more complex conditions.

Care teams provide support across the diabetes journey, including nutrition and exercise coaching, weight management, tobacco cessation, hypertension monitoring and help addressing social or access-related barriers to care.



Analytics help identify diabetes care gaps, enabling timely outreach before they become bigger health challenges.

Members receive connected glucose monitoring tools, education and clinical guidance to help them manage their condition with confidence.

Personalized reminders help members stay on track with recommended services, including A1C testing, eye exams, foot exams and other preventive care.

Clinical teams work with members and providers to support adherence and identify opportunities to optimize medications when appropriate.

Nurse-led coaching helps members build practical care plans tailored to their health needs, schedules and goals.

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Goes beyond closing gaps by providing personalized support

TDC is designed to keep members engaged using digital, virtual, telephonic and in-person support options that are based on their needs and preferences. Rather than focusing on one care gap at a time, the program takes a more connected approach to diabetes support.

With this model, nurses and care coordinators can often address multiple needs within a single interaction, helping make care more coordinated, easier to navigate and better aligned with each member's circumstances.

Supports clinical, utilization, and cost outcomes

TDC tracks progress across key areas of diabetes care. Success is not measured only by closing care gaps; it also includes supporting disease management, helping members engage in recommended care and addressing factors that may contribute to avoidable acute care and higher costs.

The program has demonstrated a **26% incremental increase in care gap closure and improved A1C control for up to 80% of members, reflecting the power of coordinated, whole-person care.*** By combining advanced analytics, customized outreach, clinical support, self-monitoring tools and coordinated follow-up, TDC is designed to help members receive more timely and personalized diabetes care. This approach can help support better diabetes management, close important care gaps and contribute to more sustainable health care spending over time.

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This report includes analyses of previously collected, internal, de-identified and aggregated CVS Health® data and met criteria for exemption from Sterling Institutional Review Board (IRB) review (#13204-RPatel02). These analyses are observational and are intended to inform discussion about potential opportunities for care coordination, follow-up, and further evaluation rather than to establish causal impact. Although some analyses adjusted for age and sex, other clinical, behavioral, and social factors may also contribute to the observed relationships.

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