

Algorithmic Pricing and Customer Trust in a Regional Grocery Chain

Executive Summary

In early 2023, a municipal hospital network in Western Canada began noticing a quiet operational problem that had not appeared in performance reports before. Patient appointments for diabetes management were being scheduled consistently, attendance rates looked acceptable, and clinical outcomes appeared stable on paper. Yet physicians reported that many patients arrived without having followed medication plans or dietary recommendations discussed during previous visits.

The issue became visible during a routine audit of patient follow-up records. Clinicians realized that many individuals were missing key treatment steps between appointments. The patients were attending visits, but the treatment plan was not translating into consistent behavior outside the clinic.

Hospital administrators suspected that the problem might relate to communication rather than medical treatment itself. The system relied on printed care instructions and scheduled checkups every three months. Staff assumed patients would follow the plan during the interval.

Background

To understand the problem more clearly, the hospital conducted a focused investigation involving 60 patients enrolled in its diabetes care program. These individuals represented a typical

cross-section of the network's population: adults between the ages of 35 and 70 who had been diagnosed with Type 2 diabetes within the previous five years.

The hospital collected several types of data during the study. Patient interviews documented daily routines, medication schedules, and experiences with the healthcare system. Researchers also reviewed prescription refill records and glucose monitoring logs submitted during appointments.

Problem Identification

The findings revealed an unexpected pattern. Most patients understood the treatment plan during clinic visits. Many could even repeat the instructions accurately. The difficulty appeared later, once patients returned to their everyday environments.

One participant described the challenge during an interview:

“I leave the appointment feeling confident. But two weeks later I forget which adjustment the doctor recommended. Then I'm guessing.”

Another patient explained that written instructions were difficult to interpret because they contained medical terminology that was unfamiliar.

These responses suggested that the core problem did not lie in medical treatment or medication availability. Instead, the breakdown occurred in the period between appointments, when patients attempted to apply instructions independently.

Analysis

Researchers examined whether access to digital tools might improve continuity of care. The hospital network had recently developed a mobile application designed to support chronic disease management. The application allowed patients to log glucose readings, review medication schedules, and receive reminders. However, it had not been widely promoted because administrators assumed older patients would prefer traditional communication.

To test the potential impact of the application, the hospital invited half of the study participants to begin using the tool for three months. The remaining participants continued with the standard printed instructions and quarterly visits.

Patients using the mobile system received three forms of support. The application displayed medication reminders at scheduled times. It also provided simplified explanations of treatment steps using plain language. Finally, the system allowed patients to send brief questions to clinic staff between appointments.

During the three-month observation period, researchers tracked several indicators: medication adherence, recorded glucose readings, and appointment outcomes.

Proposed Solutions

The results showed a clear difference between the two groups. Patients using the application recorded glucose measurements more frequently and reported fewer missed medication doses. Prescription refill records also indicated more consistent adherence to treatment plans.

Clinic staff noticed behavioral changes as well. Patients using the digital tool arrived at appointments with detailed records of their daily measurements. These records helped physicians adjust treatment more precisely.

Patients who continued relying on printed instructions displayed fewer measurable improvements. Several individuals admitted they had misplaced the instruction sheets within weeks of their appointments.

The difference in outcomes suggested that the issue was not patient motivation. Instead, it reflected the difficulty of maintaining complex health routines without consistent feedback or reminders.

Implementation Plan

After reviewing the evidence, hospital administrators decided to expand the mobile system across the entire diabetes program. Implementation involved several steps.

Staff began introducing the application during initial diagnosis appointments so patients could install it while still in the clinic. Nurses also demonstrated how to record glucose readings and access medication reminders.

The hospital redesigned patient instructions as well. Written materials now included a short explanation of how the digital system supported the treatment plan.

Results

Six months after full implementation, the hospital conducted a follow-up evaluation of the program. Medication adherence rates improved by approximately 18% across the network. Physicians also reported more consistent glucose monitoring among patients who previously struggled with daily tracking.

Patient feedback indicated that the most valuable feature was the reminder system. Many participants explained that small prompts helped them maintain routines that were otherwise easy to forget during busy days.

The hospital also discovered an unexpected benefit. Messages sent through the application allowed clinicians to identify potential complications earlier than before. When patients reported unusual glucose readings, nurses could intervene quickly rather than waiting for the next scheduled appointment.

The case highlights an important lesson in healthcare management. Clinical expertise alone does not guarantee successful treatment outcomes. Systems that support patient behavior between appointments play an equally significant role.

In this instance, the medical treatment itself remained unchanged. What changed was the communication structure surrounding the treatment plan. By providing ongoing guidance outside the clinic, the hospital reduced the gap between professional recommendations and daily patient practice.

The study also challenges a common assumption about technology adoption in healthcare. Administrators initially believed that older patients might resist digital tools. The results showed the opposite. When the system used clear language and simple design, patients of all ages adopted it quickly.

Today the hospital continues to refine the platform. Developers are testing new features that allow patients to share dietary information and physical activity logs directly with clinicians.

References & Appendices



The broader implication of this case extends beyond diabetes management. Many healthcare systems struggle with the same gap between clinical advice and real-world behavior. The evidence suggests that structured digital support can help bridge that gap when it complements traditional care rather than replacing it.

By examining a specific healthcare program in detail, the case reveals how operational decisions influence patient outcomes. The central insight is straightforward: consistent support between medical visits can determine whether a treatment plan succeeds in everyday life.