

# Final Business Recommendation

Based on our analytical SQL findings, window function insights, and the predictive no-show classification model, we recommend that the healthcare clinic adopt a targeted patient-management strategy designed to reduce appointment no-shows, optimize provider scheduling, and strengthen financial performance.

## **1. Reduce appointment no-shows through proactive outreach**

Our SQL analysis identified the doctors, time slots, and specialties with the highest no-show rates.

The ML model further highlighted key predictors such as appointment lead time, patient visit history, and prior no-shows.

We recommend using the model's risk score to proactively notify high-risk patients via automated reminders, same-day text confirmations, and priority rescheduling.

This will help improve appointment reliability and reduce wasted provider time.

## **2. Allocate resources based on actual visit patterns**

Window function calculations revealed clear intervals and patterns in patient visit frequency.

These insights can be used to optimize staffing during peak periods, adjust specialty availability, and improve patient flow.

Doing so reduces bottlenecks and enhances clinic efficiency.

## **3. Strengthen revenue by focusing on high-value specialties and overdue balances**

Revenue analysis showed which medical specialties and physicians generate the highest earnings.

In addition, SQL queries identified patients with overdue balances and the financial impact of these accounts.

We recommend implementing a structured billing follow-up process and prioritizing investment in high-revenue specialties to boost overall financial performance.

#### **4. Expand care programs for frequent or high-risk patients**

Our analytics showed that a small group of patients visit the clinic disproportionately often.

Offering chronic-care support, shorter follow-up intervals, or personalized care plans can both improve outcomes and reduce emergency or repeat visits.

#### **5. Establish a continuous analytics workflow**

To maintain long-term improvement, the clinic should integrate dashboards that track no-show rates, revenue trends, and ML model performance.

Routine monitoring enables leaders to adapt decisions as patient behavior and clinic workload evolve.