Nudging Patients to Show Up for Appointments

ABSTRACT

Missed appointments don't just throw off one person's schedule—they ripple through the day, eating into clinician time and delaying care for other patients. Beginning in 2024, a clinic sent every departing patient a simple reminder card with the date and time of their next visit. After 9 months we compared no-show rates for patients who did and did not get the card, using a Bayesian logistic model to see whether the paper nudge reduced no-shows.

DATA EXPLORATION

This study uses the anonymized dataset that recorded if a patient showed, no-showed, or cancelled prior to the appointment.

- Time frame: 9 Months
- Patients: all unique visits in that window
- Outcome: 1 = missed next appointment, 0 = attended, 0 = cancelled
- Predictor: Reminder (Yes / No)

BAYESIAN MODEL

The log odds of missing an appointment were modelled as:

$$logit(p_{miss}) = \alpha + \beta_{card} 1_{card}$$

using weak informative priors:

$$\alpha = N(0,10) \quad \beta \sim N(0,5)$$

RESULTS

Table 1: No-Show Rates between both groups

Group	No-Show Rate	95% CI
No Reminder	25%	18.4 – 31.5%
Reminder	18%	9.7 – 27.9%

The results show **written reminders can work**. Patients who received a reminder were less likely to miss their next appointment. The mean of the beta coefficient is negative, and the 77% credible interval excludes zero. This indicates **moderate confidence** that written reminders have a beneficial effect in reducing no-shows. Among patients without a reminder, the chance of missing their next appointment was around 25% [95% CI: 18.42-31.48] while among those who received a reminder, it dropped to around 18% [95% CI: 9.71% - 27.88%].

FUTURE CONSIDERATIONS

The Bayesian model offers moderate—but clearly directional—evidence that written reminder cards can curb no-shows, so the smart play is to keep distributing them while we enlarge the dataset to tighten those intervals. At the same time, we can experiment with layering in text or email nudges to see whether multiple reminders reinforce each other or merely irritate patients, and segment results by demographics or appointment type to pinpoint who benefits most. The intervention is cheap, the upside for clinic flow is meaningful, and each additional data point sharpens our understanding—altogether a bet well worth pursuing.