ENTITY FLOW | DECISION PACK

Outpatient No-Show Decision Pack

Sample — Synthetic Data | Prepared for [Hospital Name]

DECISION STATEMENT

How should [Hospital] restructure outpatient scheduling to reduce no-shows from 18.3% to below 12%, within existing staffing budget, while maintaining patient access targets?

Current Baseline

No-Show Rate	Annual Revenue Impact	Avg Wait-to-Appointment	Analysis Period
18.3%	$1.2M estimated lost revenue/year	11.4 days	Jan 2024 – Dec 2025 24 months, 47,200 appts

Prepared by: Entity Flow (Doogooda) | Date: [Date] | Version: 1.0

Classification: Confidential | For internal decision-making use only

1. Causal Analysis: What Actually Drives No-Shows?

Predictive models identify that wait time >14 days correlates with 38% no-show probability. But correlation is not causation. We applied causal inference methods to distinguish genuine drivers from confounders.

1.1 Predictive vs. Causal Findings

Factor	PredictiveCorrelation	CausalEffect	Implication
Wait time >14 days	Strong (r = 0.42)	Moderate (ATE = +8.2pp)	Reducing wait time helps, but less than predicted
No SMS reminder sent	Moderate (r = 0.31)	Strong (ATE = +11.4pp)	Highest causal impact. Reminders are the lever.
Morning appointments	Weak (r = 0.15)	Negligible (ATE = +1.1pp)	Time-of-day is a confounder, not a cause
New patient (first visit)	Moderate (r = 0.28)	Moderate (ATE = +6.7pp)	New patients need different engagement
Distance >15 miles	Strong (r = 0.38)	Weak (ATE = +3.1pp)	Selection effect: far patients are sicker, more motivated. Distance itself is not the barrier.

Key insight: SMS reminders have 3x the causal impact of wait time reduction. A hospital that only reduces wait times without fixing reminder protocols will see minimal improvement — at much higher cost.

1.2 Method

Causal effects estimated using difference-in-differences (natural experiment: SMS system outage in March 2025 created unintentional control group) and instrumental variable regression (distance as instrument for wait time). Full methodology in Appendix A.

2. Scenario Comparison

Three intervention options, each evaluated under current budget constraints ($0 net new cost for Phase 1).

	Option AReminder Protocol	Option BWait Time Reduction	Option CCombined	Status Quo
Intervention	2-touch SMS/call reminder + same-day confirmation	Add 0.5 FTE to reduce avg wait from 11.4 to 7 days	Reminders + wait time reduction + overbooking protocol	Current process (single reminder, no overbooking)
Projected No-Show Rate	**12.1% (·33.9%)**	15.6% (·14.8%)	**9.8% (·46.4%)**	18.3% (baseline)
Annual Revenue Recovered	**$410K**	$180K	**$590K**	$0
Implementation Cost	$12K/year (SMS platform)	$48K/year (0.5 FTE)	$60K/year (SMS + FTE)	$0
Net ROI	**+$398K/year ROI: 33x**	+$132K/year ROI: 2.8x	**+$530K/year ROI: 8.8x**	—
Implementation Time	2 weeks	6–8 weeks (hiring)	8–10 weeks	—
Risk Level	Low No staffing change	Medium Hiring dependency	Medium Higher complexity	High Continuing losses

RECOMMENDATION

Start with Option A (Reminder Protocol). Highest ROI, lowest risk, fastest to implement.

If results confirm causal model within 30 days, expand to Option C in Phase 2.

3. Assumptions & Constraints

3.1 Documented Assumptions

#	Assumption	Source / Basis	Sensitivity
A1	SMS reminder increases show rate by 11.4pp	Causal estimate from March 2025 natural experiment (n=3,200)	If effect is 8pp instead of 11.4pp, Option A still recovers $290K
A2	Average revenue per appointment = $185	Weighted average from billing data, Jan–Dec 2025	Range: $160–$210. Conclusion unchanged at either bound.
A3	No-show patients would have been seen (not backfilled)	Current backfill rate: 12%. 88% of no-show slots go unfilled.	If backfill reaches 30%, revenue impact drops by ~20%. Option A still dominant.
A4	SMS platform cost = $1K/month	Vendor quotes from 3 providers (Luma, Klara, in-house)	Even at 3x cost ($3K/mo), ROI remains 11x

3.2 Constraints Applied

Constraint	Value	Source
Net new budget for Phase 1	$0 (cost-neutral or funded from recovered revenue)	COO directive
Headcount cap	No new FTEs in Phase 1	HR / FY2026 budget
Patient access target	3rd available appointment ≤ 10 business days	Quality committee standard
No patient-facing workflow disruption	Intervention must be backend/automated	CMO requirement

4. What Changes My Mind

This section documents conditions under which the recommendation should be revisited. If any trigger fires, re-run the analysis before proceeding.

#	Trigger Condition	Why It Matters	Action If Triggered
T1	Reminder effect <6pp after 30-day measurement	Causal estimate may not generalize to full population	Pause expansion. Re-estimate with full-rollout data. Consider Option B.
T2	Backfill rate rises above 25%	Revenue impact of no-shows decreases if slots are being filled	Recalculate net revenue impact. Option A may still be valid for quality metrics.
T3	New EHR scheduling module changes patient flow	Baseline conditions change; model inputs may be invalid	Rebuild baseline with new data. Delay Phase 2 until stable.
T4	Budget constraint lifted (new FTE approved)	Option C becomes feasible immediately	Skip Phase 1-only. Go directly to Option C.

5. Audit Trail

Item	Detail
Decision owner	[COO Name], Chief Operating Officer
Analysis prepared by	Lina Song, CEO, Doogooda (Entity Flow)
Data period	January 2024 – December 2025 (24 months, 47,200 appointments)
Methodology	Causal inference (DiD + IV) → Constrained scenario optimization → Sensitivity analysis
Scenarios evaluated	4 (Option A, B, C, Status Quo). Options D (overbooking only) and E (penalty policy) were evaluated and rejected. See Appendix B.
Recommendation	Option A (Reminder Protocol). Expand to Option C conditional on 30-day results.
Review triggers	T1–T4 documented above. Next scheduled review: 30 days post-implementation.
Version	v1.0 — [Date] | Next update: 30 days post-implementation or upon trigger event