CareLoop

Patient care that follows through

Team 4 | Neo Tiwari

Problem Analysis

Problem Analysis

Clearwater Ridge faces challenges in care coordination, follow-up continuity, and winter resilience

Care Coordination

Follow-ups rely on **manual, fragmented processes**, making missed appointments easy to lose and hard to resolve

Follow-Up & Communication

No consistent way to re-engage patients after missed visits, increasing delays and preventable escalation.

Winter Travel Constraints

Winter storms and highway closures **disrupt in-person care**, with limited virtual options to maintain continuity.

When appointments are missed and winter conditions limit access.
How can Clearwater Ridge ensure patient care continues?

CARELOOP

Strategic Analysis

Key Strategic Constraints

Strategic Constraints in Rural Care Coordination

Designing care coordination that works when access breaks down

Strategic Factors

What Makes Care Coordination Viable?

- Limited staff capacity
- Manual follow-up processes
- Winter-disrupted access

System Requirements

What Must the System Provide?

- Closed-loop follow-up
- Virtual-first access
- Minimal training

System Realities

What Defines the Care Environment?

- Seasonal Isolation
- Small population scale
- High cost of escalation

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Existing Care Coordination Approaches Matrix

Why do existing approaches fail to meet system requirements?

	Closed-Loop Follow-Up	Winter-Resilient Access	Staff Scalability	Reliability Under Disruption
Manual Staff Follow-up	🔴	🟡	🟡	🟡
In-Person–Only Care Model	🔴	🔴	🔴	🟡
Basic Reminder Systems	🟡	🟢	🟢	🟡
Status Quo (No change)	🔴	🟡	🟡	🟡

Proposed Approach Matrix

Why do existing approaches fail to meet system requirements?

	Closed-Loop Follow-Up	Winter-Resilient Access	Staff Scalability	Reliability Under Disruption
Manual Staff Follow-up				
CareLoop	●	●	●	●
Basic Reminder Systems				
Status Quo (No change)				

Strategic Insight

Care breakdowns in rural communities are driven by failed follow-up, not lack of care availability

Meet Ethan

Clearview Ridge Resident: Forestry

Ethan's Concerns

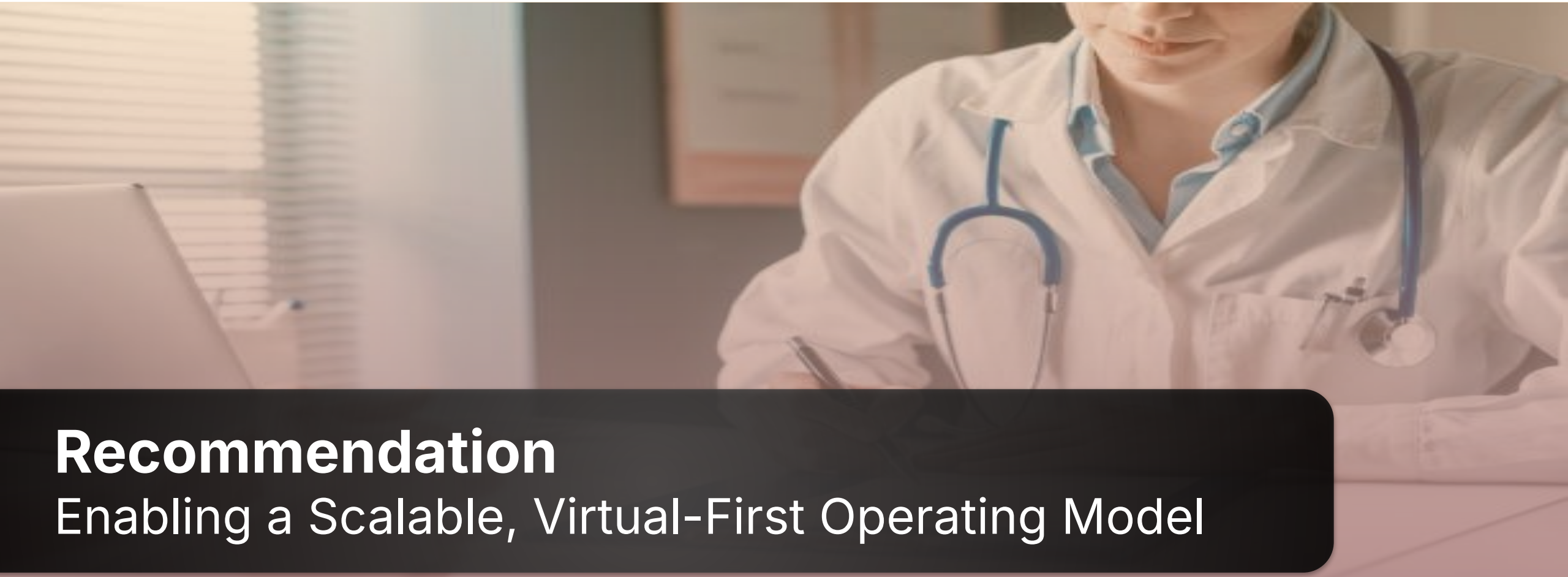
1
missed appointment **delays care for weeks**

50+
patients managed by **1 care coordinator**

$200 → $15,000
cost jump from **missed follow-up to escalation**

How can we better address the needs of citizens like Ethan?

CARELOOP



Recommendation

Enabling a Scalable, Virtual-First Operating Model

Proposed Operating Model

A deeper dive into the core components

High Level Overview

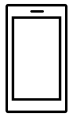
- Deploy a **closed-loop, virtual-first appointment coordination system** that standardizes pre-appointment check-in for patients and gives staff real-time visibility + automatic follow-up triggers.

Core Capabilities

- **Two dashboards** (Admin + Patient) + Integration with existing EMR Systems + automated multi-channel check-in (Web / SMS / AI Call) that ensures no appointment can be missed without resolution.

Why is this the Optimal Solution?

Replaces manual coordination



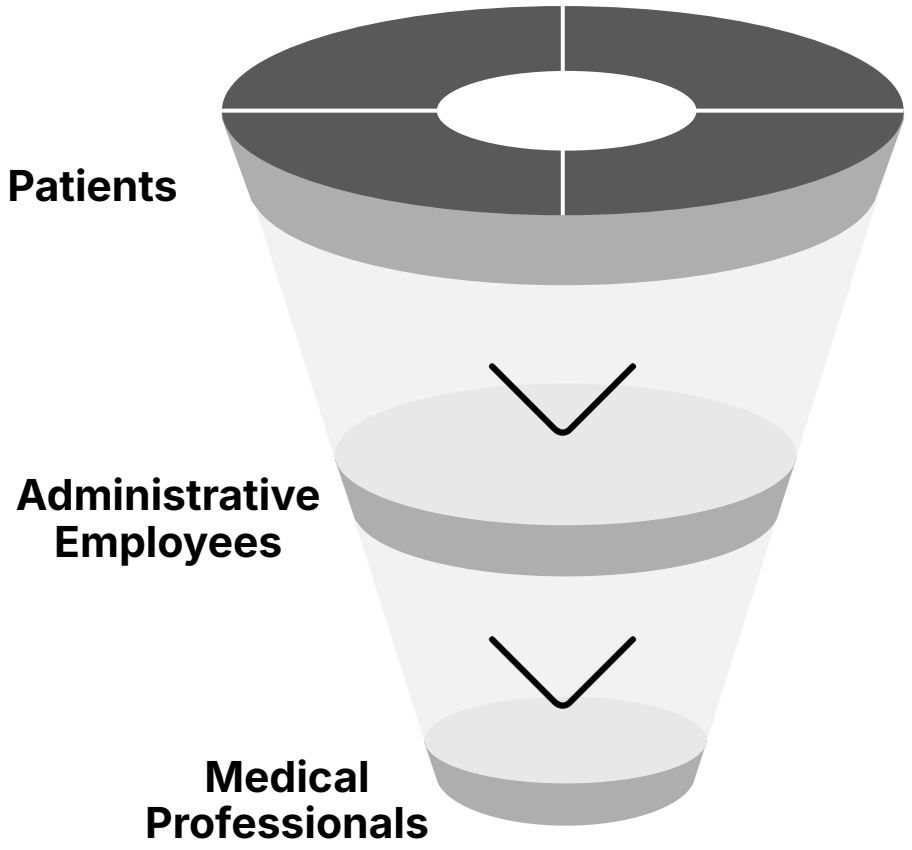
Automated patient engagement

EMR auto-sync

Standardizing pre-appointment screening across web/SMS/call creates a scalable operating model for continuity, independent of travel constraints.

Integrated System

Enabling a standardized, end-to-end operating model for appointment readiness



Patients

- Patients receive a **single, simple check-in path** via **web, SMS, or AI call** to **confirm** appointments and complete **pre-appointment questions** in their preferred language/channel.

Administrative Employees

- Staff use a **real-time dashboard** synced to EMR to **configure outreach**, run **fallback reminders**, flag **no-shows/cancellations**, and **trigger rescheduling**, all with clear status indicators.

Medical Professionals

- Clinicians receive **structured, pre-validated intake summaries** before the visit → 15% more time for decisions.
- Integration with existing EMR platforms

Decision Criteria

Assessing CareLoop against Clearwater Ridge's core operating constraints

Care Coordination

Eliminate manual tracking gaps by giving staff a single dashboard with **real-time appointment status**

Follow-Up & Communication

Multi-channel outreach (web / SMS / AI call), with configurable timing + fallback reminders to maximize completion.

Winter Travel Constraints

One-click "switch to virtual" + automated patient notification ensures **care continues** when highways close or travel becomes unsafe.

What Success Looks Like

Key Outcomes

Appointment readiness:
Higher confirmation + completed intake before visit; fewer day-of surprises

Fewer missed visits
No-shows/cancellations auto-flagged + reschedule prompts prevent drop-offs

Staff time returned
Less manual calling/chasing; coordination handled by automated system

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Why CareLoop Outperforms Existing Approaches

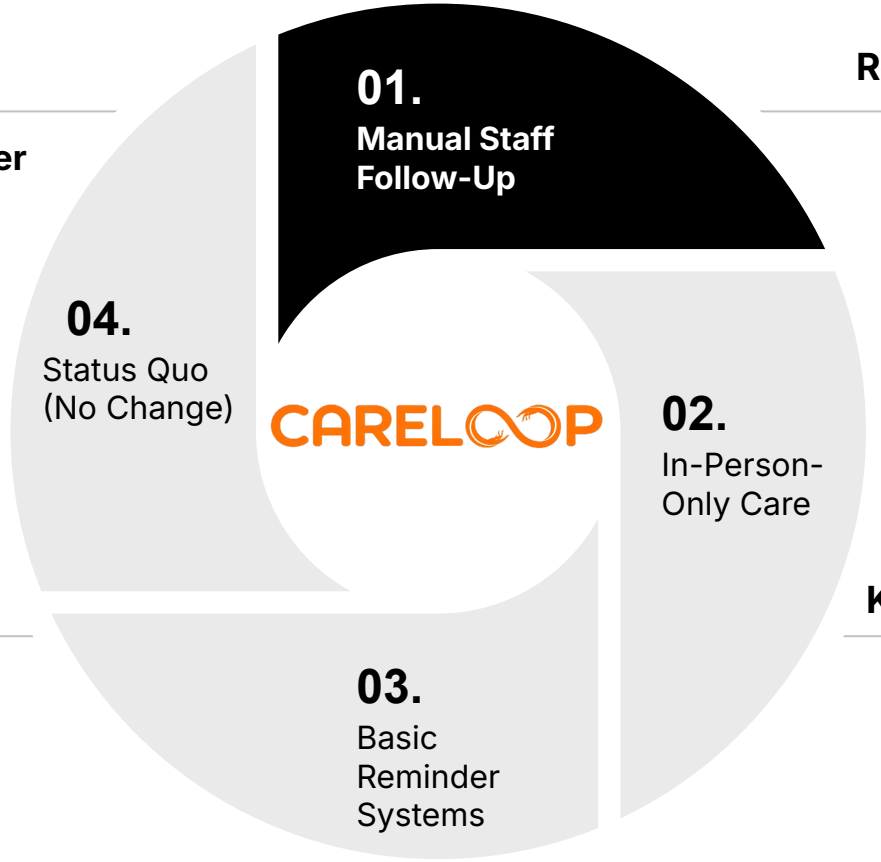
A single system that closes the loop, scales staff capacity, and stays reliable under winter disruption

A Single Source of Truth

APR/EMR sync + real-time visibility → **fewer blind spots than paper/spreadsheets.**

Replacing Chasing with Automation

Dashboard status + auto reminders + no-show flags → **fewer drops and less staff time.**



Turning Reminders into Completion

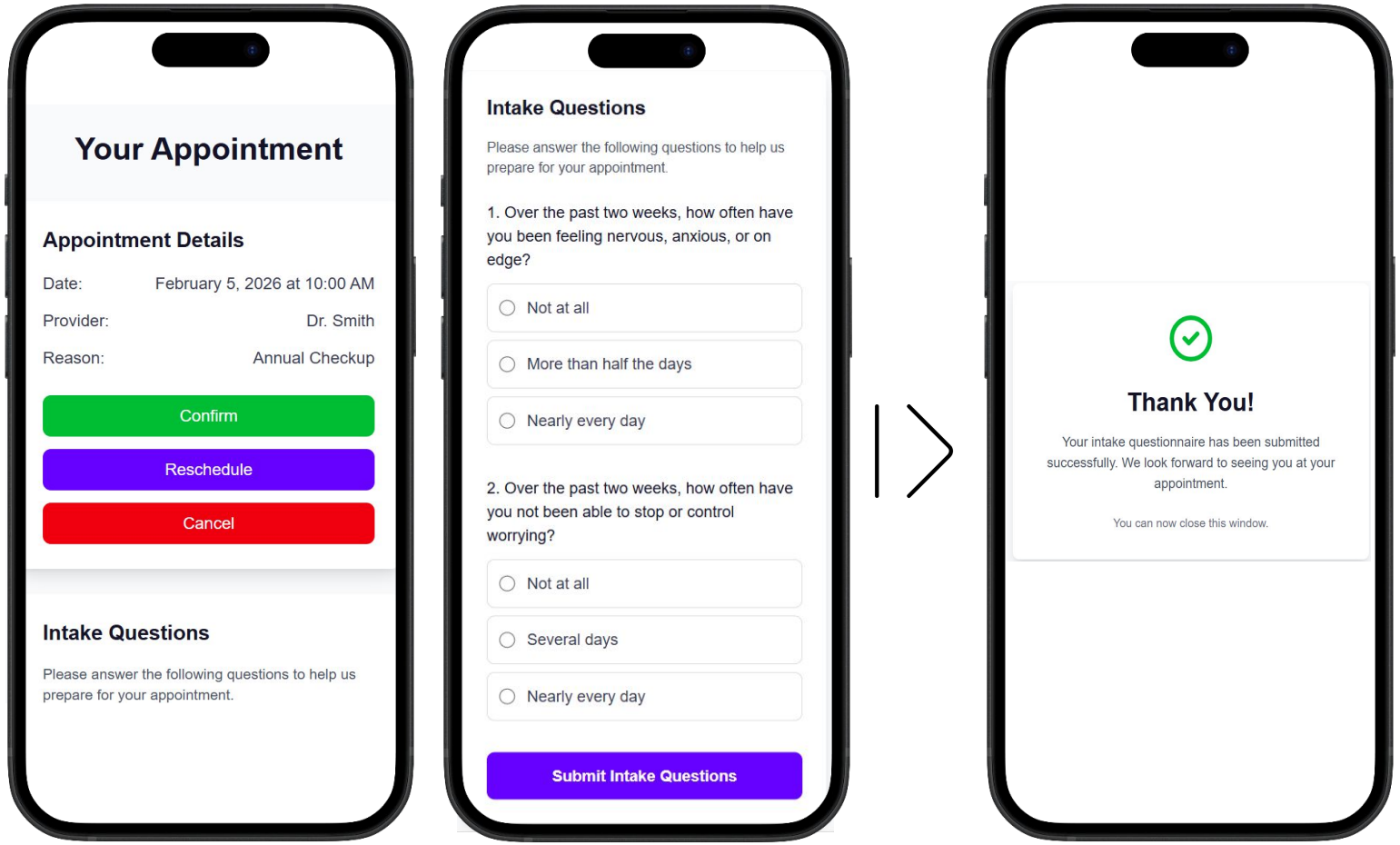
Patients confirm + **complete intake** (web/SMS/AI call) and the system syncs results back to staff.

Keeps the Process Intact when Visits Shift

One-click "switch to virtual" + instant patient notification → **continuity without rescheduling chaos.**

CareLoop Experience: Patient

Standardizing Pre-Visit Readiness



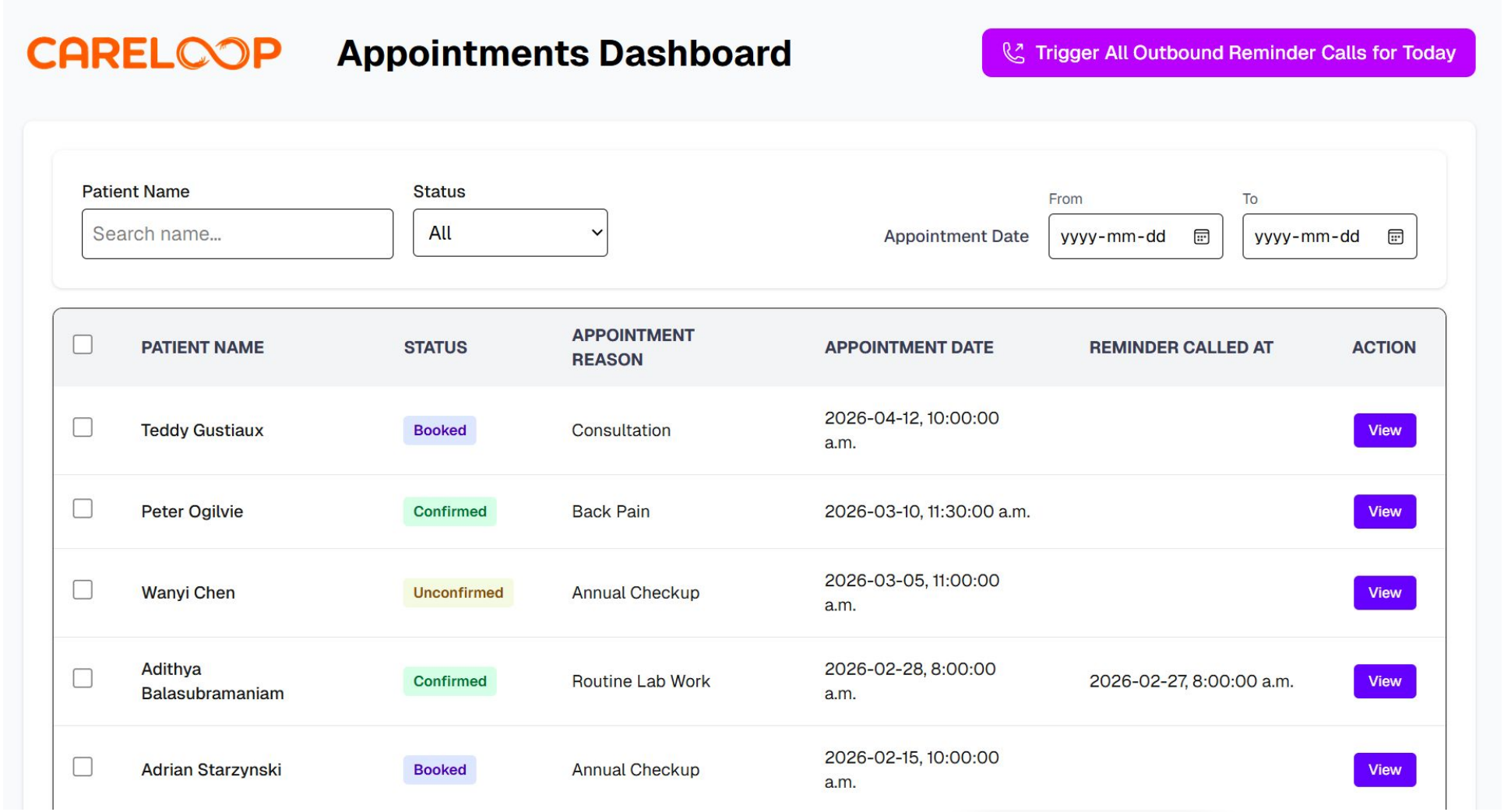
Easily **confirm appointments** and view key details in **one tap**

Answer **pre-visit questions** ahead of time for a **smoother appointment**

Receive timed reminders via SMS or call to **reduce missed appointments**

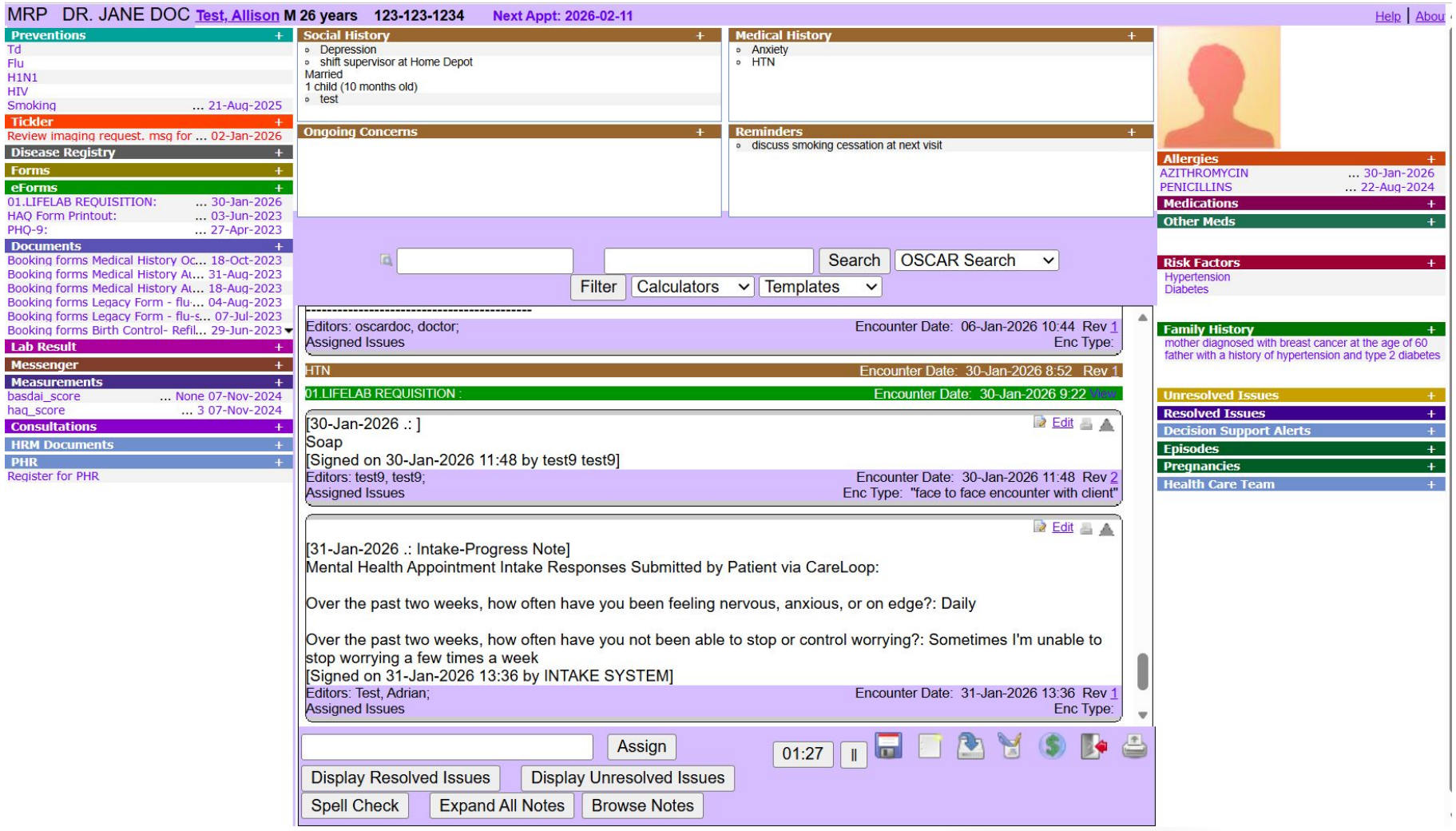
CareLoop Experience: Administrator

Track confirmation status and take action at scale

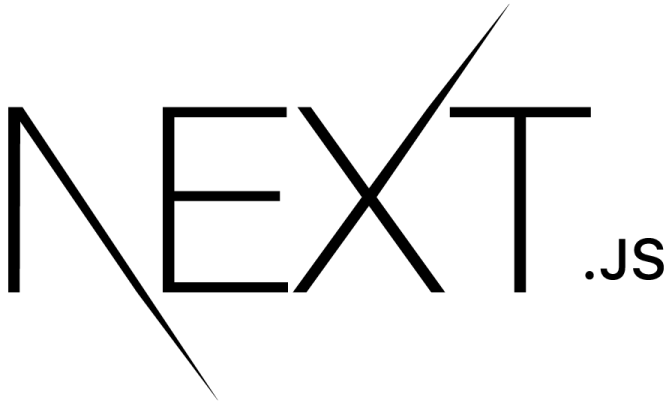


CareLoop Experience: Medical Professional

Integration With Existing EMR Platforms



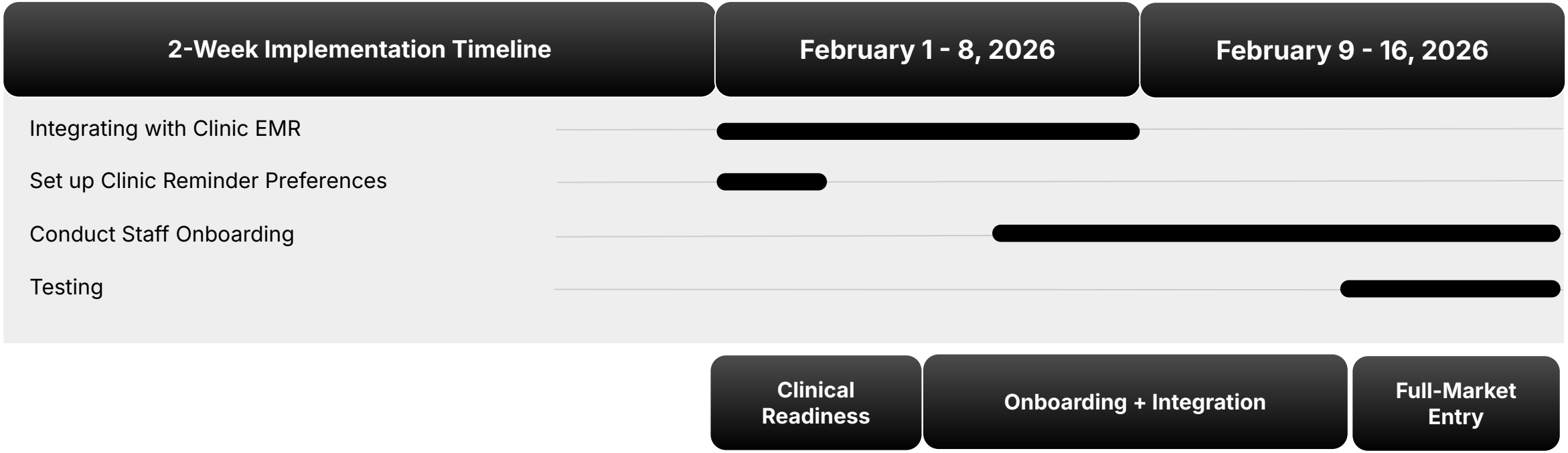
Tech Stack



Implementation

Implementation Timeline

Integration with EMR to Begin April 2026



Technical EMR Integration Plan

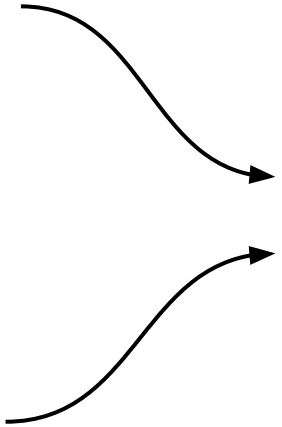
Ensuring secure, efficient, and seamless adoption within payroll platforms.

Request API Keys from EMR Vendor

Secure APIs sync appointment schedules and patient data **without disrupting** clinic workflows.

Setup EMR Connection in CareLoop

Clinics access a **simple setup** dashboard to manage reminders, intake flows, and follow-ups.

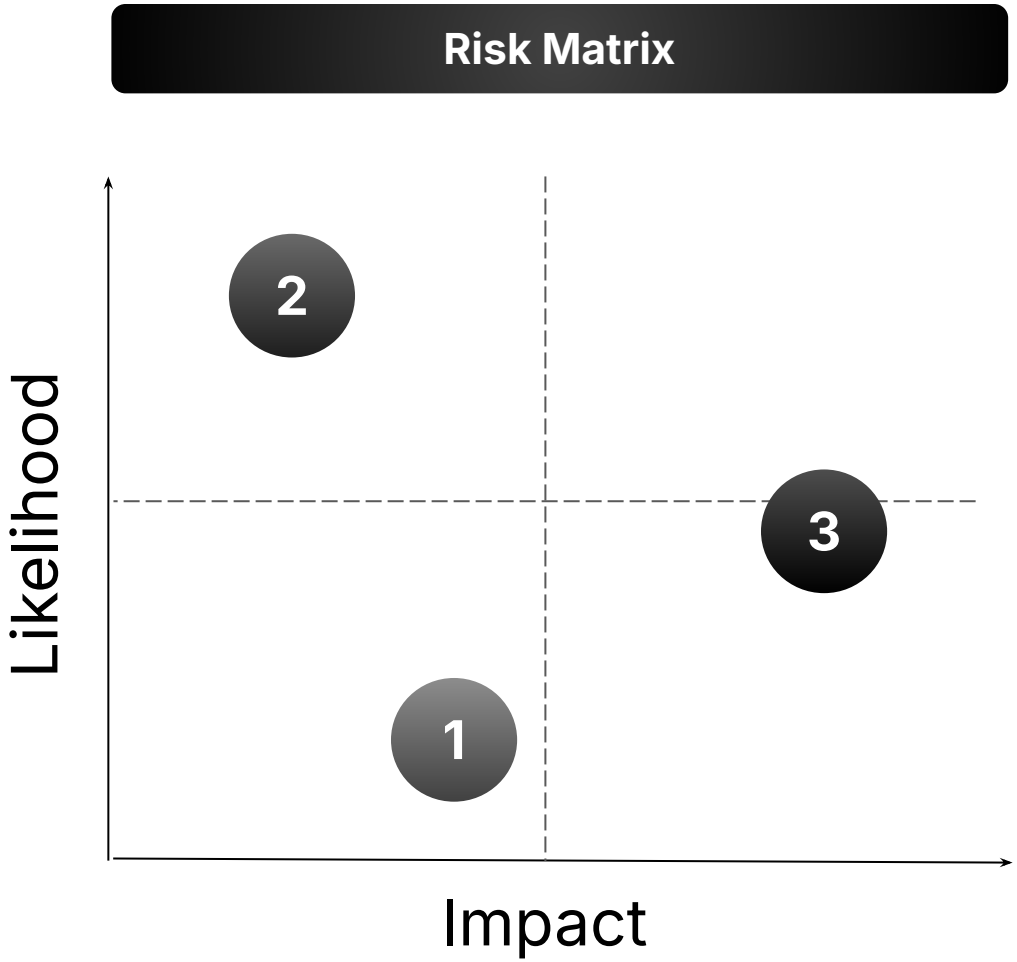


Automatically imports clinic day-sheet from EMR

Automatically exports patient intake responses into the EMR

Risks and Mitigations

Overcoming regulatory, partnership, and market challenges for successful US expansion



1 Clinical Adoption

Embed CareLoop directly into existing EMR workflows to minimize behavior change and eliminate duplicate work for clinicians.

2 Regulatory Readiness and Deployment Timing

Launch with administrative workflows while aligning data handling with established privacy standards.

3 Early Partner Adoption and Buy-In

Offer low-friction pilot deployments with no upfront cost, targeting clinics facing staff shortages and access disruptions.

Finances - Cost Projections

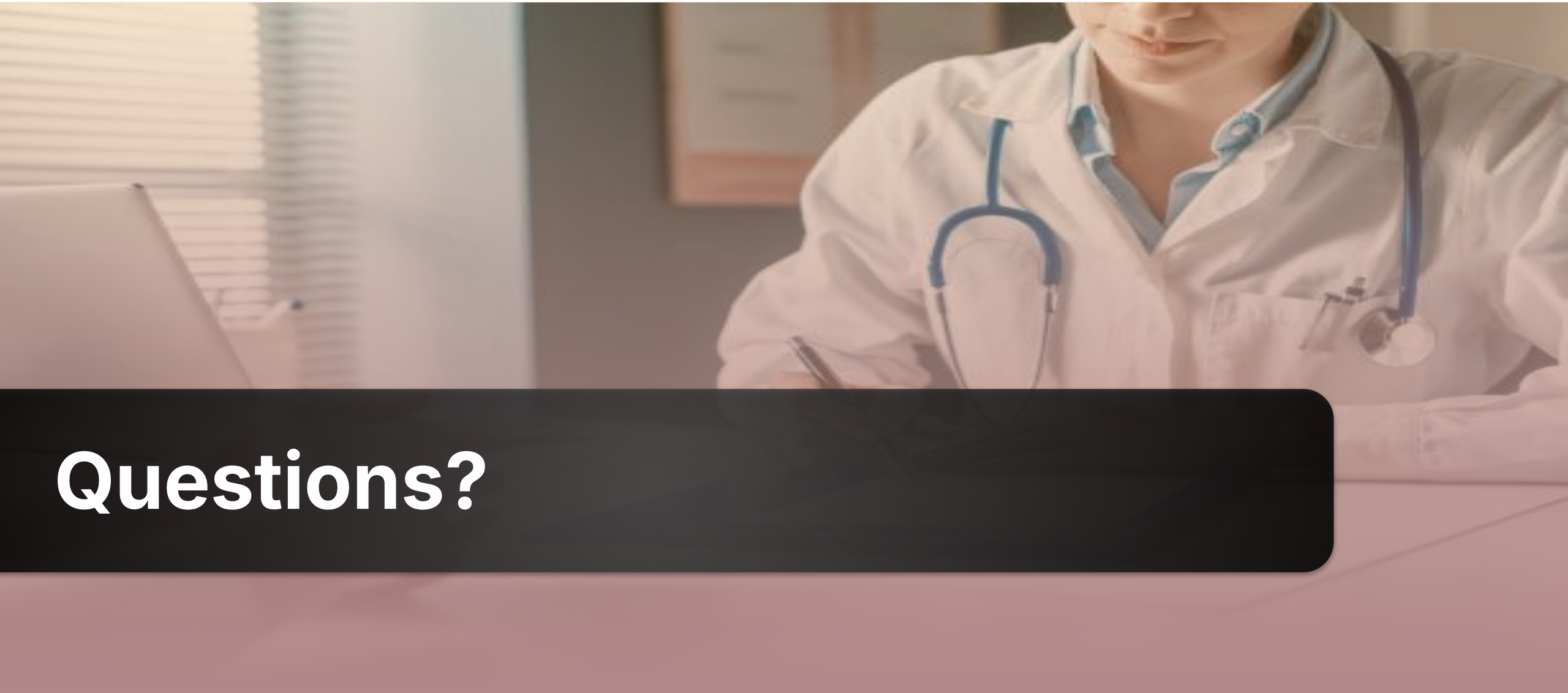
Healthy unit economics supported by a lean fixed-cost base

Cost line item	Year 1	Year 2	Year 3	Notes / formula
Implementation coordinator	$4,250	-	-	One-time clinic rollout support.
EMR/APR integration & configuration	$10,000	-	-	Interface + mapping + testing.
Security & privacy assessment	$7,000	-	-	PIA/TRA + pen test.
Hardware (tablets/kiosk)	$1,600	-	-	Units × cost per unit.
Training & change management	$2,500	-	-	Quick guides + training sessions.
Legal / contracting	$2,000	-	-	Policies + data sharing agreement.
Contingency (one-time)	$2,735	-	-	Buffer for integration surprises.
Cloud hosting (App Service + DB) - annualized	$2,432	$2,432	$2,432	Azure App Service + Cosmos DB converted to CAD.
Other cloud (monitoring/backups/logs)	$1,200	$1,200	$1,200	CAD/month × 12.
Phone numbers + messaging compliance	$324	$324	$324	CAD/month × 12.
Variable comms (SMS + AI call minutes)	$5,399.80	$5,399.80	$5,399.80	Appointments × workflow share × variable cost/appointment.
Support & maintenance	$10,500	$10,500	$10,500	Annual support contract / part-time DevOps.
Security/compliance (ongoing)	$2,500	$2,500	$2,500	Annual privacy/security activities.
Misc recurring	$1,500	$1,500	$1,500	Domain, email service, incident buffer.
Total recurring operating cost	**$23,855**	**$23,855**	**$23,855**	Sum of reoccuring costs
Total cost (one-time + recurring)	**$53,940**	**$23,855**	**$23,855**	Year 1 should be <= first-year budget cap. Year 2-3 should be <= ongoing cap.
Budget cap	$60,000	$25,000	$25,000	From case prompt.
Headroom (cap - total cost)	**$6,060**	**$1,145**	**$1,145**	Positive = within cap.

Finances - Impact & ROI (Avoided Costs)

Three Year Profit and Loss Analysis

	Year 1	Year 2	Year 3	3-Year Total
Benefits (avoided costs)				
Savings – missed appointments	$73,440	$73,440	$73,440	$220,320
Savings – prevented hospitalizations	$5,000	$5,000	$5,000	$15,000
Savings – avoided airlifts	$1,500	$1,500	$1,500	$4,500
Total benefits	**$79,940**	**$79,940**	**$79,940**	**$239,820**
Costs				
One-time implementation (Year 1 only)	$30,085	-	-	$30,085
Recurring operating cost	$23,855	$23,855	$23,855	$71,566
Total costs	**$53,940**	**$23,855**	**$23,855**	**$101,651**
Net benefit (benefits - costs)	**$26,000**	**$56,085**	**$56,085**	**$138,169**
ROI % (Net benefit / Total costs)	**48.2%**	**235.1%**	**235.1%**	**135.9%**



Questions?

Appendices

Finances - Inputs

Key Considerations for Profitability and Growth

Core volumes & adoption		
Population (residents)	1,800	Case population estimate (input).
Scheduled appointments per year (eligible for developed system)	7,200	Base-case volume to size SMS/call usage (Assumption: 32 appointments per day * 4.5 days a week * 50 Weeks a year (12.5 Min per appointment)
% appointments using pre-appointment screening	85%	Portion of appointments routed through web/call check-in.
% check-in via web (client dashboard)	20%	Remainder handled by AI call/SMS.
% check-in via AI call	80%	Should sum to 100% with web rate.
Avg AI check-in call length (minutes)	4.0	Includes questionnaire + confirmation + recap.
% appointments needing fallback reminder call	40.0%	Only if not confirmed on the 1st attempt
Avg reminder call length (minutes)	1.0	Short reminder call
SMS sent per appointment (avg)	5.0	AI pre-notice + 24h reminder + 6h fallback + 1 hr fallback

Unit costs (usage)		
FX rate (CAD per 1 USD)	1.36	Assumption used to convert Azure/Twilio/ElevenLabs USD pricing to CAD, as of Feb 1, 2026
Twilio SMS cost (CAD per SMS)	$0.01	Given assumption: 1 cent CAD per SMS.
Twilio voice cost (USD per minute)	$0.01	Given assumption: 1 cent USD for calling (treated as per-minute).
ElevenLabs voice AI cost (USD per minute)	$0.16	Midpoint of 15–17 cents USD/min
Phone numbers + messaging compliance (CAD per month)	$27.00	Includes phone number rental + messaging compliance/admin fees (Twilio).

Cloud & operations (recurring)		
Azure App Service (USD per month)	$99.00	Azure App Service P2 Premium Subscription
Azure Cosmos DB (USD per month)	$50.00	Cosmos DB Subscription
Miscellaneous cloud (CAD per month)	$100.00	Monitoring, backups, storage, logs (estimate).
Support & maintenance (CAD per year)	$12,000	Part-time DevOps + support contract (estimate).
Security/compliance ongoing (CAD per year)	$2,500	Annual privacy/security activities, audits, key rotation, etc.
Miscellaneous recurring (CAD per year)	$1,500	Domain, email service, monitoring alerts, incident response buffer.

Finances - Inputs

Key Considerations for Profitability and Growth

One-time implementation / development costs		
Implementation coordinator (one-time)	$4,250	Clinic onboarding & workflow rollout. (est: $53 per hour * 80 hours)
EMR/APR integration & configuration (one-time)	$10,000	FHIR/HL7 interface, data mapping, testing (estimate).
Security & privacy assessment (one-time)	$7,000	PIA/TRA, pen test, threat modeling (estimate).
Hardware TV/Laptop/kiosk (units)	2	Tablets for nurses + patient kiosk (estimate).
Hardware cost per unit (CAD)	$800	Case range $500–$800 per unit.
Hardware total (CAD)	$1,600	Calculated
Training & change management (one-time)	$2,500	Staff training, quick guides, scripts (Estimate: ($53+$30)*30 hours)
Legal / contracting (one-time)	$2,000	Data sharing agreement, vendor contract, policies (estimate).
Miscellaneous Buffer (% of one-time)	10.0%	Buffer for integration surprises

Case budget constraints (Given)		
Max first-year budget (CAD)	$60,000	Constraint from case prompt.
Max ongoing operating cost (CAD / year)	$25,000	Constraint from case prompt.
Discount rate (for NPV)	8.0%	Used only in ROI sheet

Calculated KPIs		
All-in AI call cost (CAD per minute)	$0.23	(Twilio voice + ElevenLabs) × FX.
Expected variable cost per appointment (CAD)	$0.88	SMS + expected AI minutes (check-in + reminder).

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Finances - Impact & ROI (Avoided Costs)

Assumptions & Avoided Costs

Baseline failure rates (assumptions)		
Missed appointment rate (of eligible appts)	12.0%	Base-case fraction of eligible appointments missed/cancelled without resolution.
Reduction in missed appointments with closed-loop follow-up	50.0%	Expected improvement from automated reminders + rescheduling triggers.
Preventable emergency hospitalizations per year (baseline)	2.0	Events attributable to follow-up breakdowns
Reduction in preventable hospitalizations	25.0%	Fraction avoided by earlier follow-up & escalation.
Emergency medical airlifts per year (baseline)	0.50	Estimate: 1 airlift every 2 years
Reduction in airlifts	20.0%	Fraction avoided via improved follow-up.

Unit costs (from case prompt)		
Cost per missed appointment (CAD)	$200	Case estimate.
Cost per preventable emergency hospitalization (CAD)	$10,000	Midpoint of $8k–$12k range in case.
Cost per emergency airlift (CAD)	$15,000	Case estimate.

Calculated annual avoided costs		
Eligible appointments per year	6,120	Appointments × workflow share.
Missed appointments avoided (count)	367	Eligible appts × missed rate × reduction.
Savings from missed appts (CAD)	$73,440	Avoided count × unit cost.
Savings from prevented hospitalizations (CAD)	$5,000	Baseline hosp × reduction × unit cost.
Savings from avoided airlifts (CAD)	$1,500	Baseline airlifts × reduction × unit cost.
Total annual avoided costs (CAD)	$79,940	Total savings estimate.
Annual operating cost (CAD)	$23,855	Pulled from Cost_Model: total recurring cost in Year 2.
Net annual benefit (Savings - OpEx)	$56,085	Positive means annual ROI is positive.
One-time implementation cost (CAD)	$30,085	Year 1 total cost - Year 1 recurring (approx one-time).
Simple payback (years)	0.54	One-time / net annual benefit.

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Sources

https://ca.indeed.com/cmp/London-Health-Sciences-Centre/salaries/Clinic-Coordinator : Implementation Coordinator Salary ($53.07/hr)