Case Study 1: AI Triage & Symptom Checker for a Telehealth Provider

Problem

Patients often call helplines for minor symptoms, leading to:
Long wait times
Overloaded clinicians
Misrouted cases
Low patient satisfaction

Solution

A **conversation-based AI triage bot** integrated into the provider's mobile app & website.
It collects **symptoms**, applies clinical decision-tree logic, and routes patients accurately.

Implementation Highlights

1. Trained on ICD-10, SNOMED symptom clusters
2. Safety layer with red-flag escalations ("shortness of breath", "severe chest pain")
3. Integration with CRM + appointment scheduling

Outcome

32% reduction in nurse call centre volume
22% faster patient routing to appropriate clinicians
NPS improved by +16
Clinician time freed up for high-risk cases

Harmony Care – AI Healthcare Conversation Assistant

Structured as **4 phases**, each solving a real, validated problem.

Phase 0: Discovery & Compliance (Month 0–2)
Primary Goal: Ensure clinical safety, regulatory readiness, and problem-market fit.

Activities
Conduct stakeholder interviews (patients, clinicians, admin teams)
Map patient journeys – triage, appointment, treatment, post-care
Clinical workflow validation with SMEs
HIPAA/GDPR/SOC2 readiness checks

Deliverables
Problem statement
Clinical risk assessment
Compliance architecture
MVP scope defined

Phase 1: MVP – Intelligent Triage & Patient Support (Month 2–6)
Primary Goal: Launch a safe, reliable conversational assistant.

MVP Features
Symptom Collection Dialogue
Natural conversation intak
Standardized symptoms mapped to ICD-10

1. AI Triage Recommendations
Low/medium/high severity buckets
Human review for high-risk cases

1. **Appointment Booking Integration**
2. **Basic EHR Integration (FHIR-based)**
3. **Multilingual Support (EN + 1 local language)**

MVP Success Metrics
85%+ symptom classification accuracy
20% reduction in call centre load
90% user satisfaction

Phase 2: Patient Engagement & Care Continuity (Month 6–12)
Goal: Extend value beyond triage into daily care journeys.

New Feature Updates
Personalized Care Plans
Diabetes, hypertension, post-surgery protocols
Medication Reminders
Chat-based nudges
Smart refill alerts
Lab Report Explanation
AI explains values in simple language
Discharge Summary Simplification
Break complex medical instructions into steps

Care Team Escalation
Detect deviation from care plans
Auto-alert providers

Success Metrics
30% drop in non-adherence
15% reduction in readmission
Improved clinical team efficiency

Phase 3: Advanced Automation & Clinical Integrations (Month 12–18)
Goal: Make the bot deeply embedded in clinical operations**.**

Feature Upgrades
Voice Mode for Elderly Patients
Knowledge Graph Integration
Medical questions answered with clinical grounding
Claim + Insurance Assistance
Coverage queries
Policy navigation
Remote Patient Monitoring (RPM) Data Sync
Glucose, BP, SpO_2 measurements fed live into the bot

Success Metrics
40% reduction in inbound admin queries
Faster clinician decision cycles
High patient adoption on mobile

Phase 4: Predictive & Proactive AI (Month 18–24)
Goal: Turn the bot into an anticipatory healthcare assistant.

Advanced Features
Predictive Alerts
Early detection of deteriorations (e.g., rising glucose patterns)
Behavioral AI Coaching
Lifestyle coaching for chronic diseases
Insurance-Fraud Detection Inputs
Population Health Insights Dashboard
Aggregated insights for hospitals
Identify common symptoms, seasonal trends

Success Metrics
Lower emergency escalations
Increased long-term patient retention
Revenue through insurance partnerships

Healthcare providers struggle with:
Long call-centre wait times
High triage dependency on nurses
Poor patient adherence
Confusing discharge instructions
Manual follow-ups that drain care team capacity
Fragmented workflows due to disconnected systems (EHR, CRM, onboarding portals)
Patients struggle with:
Understanding symptoms
Getting quick access to care
Managing multiple medications
Interpreting lab results
Staying on care plans

Goals & Success Metrics
Primary Goals
Reduce administrative load on clinical and call centre teams
Increase speed, accuracy, and accessibility of patient support
Improve clinical outcomes through continuous engagement

Success Metrics
20–30% reduction in inbound patient calls within 6 months
90% accuracy in symptom classification
30% increase in care-plan adherence
10–15% decrease in preventable readmissions
25% faster patient onboarding for telehealth

4. Target Users

Primary Users

Patients (general + chronic care)
Clinicians (doctors, nurses)
Hospital operations teams
Telehealth providers

Secondary Users

Insurance agents
Hospital administration
Population health teams

Risks & Mitigation

Risk	Impact	Mitigation
Incorrect triage recommendation	High	Clinical review layer for high-risk symptoms
EHR API changes	Medium	Modular integration layer
Low patient adoption	Medium	Multi-channel access (web, app, WhatsApp)
Regulatory delays	High	Early compliance reviews