

Business Case: AI Agent for Patient Triage in Healthcare Facilities

1. Executive Summary

To improve patient flow, reduce wait times, and optimize clinical resource allocation, we propose deploying an AI-powered **Healthcare Triage Agent**. This system will automate the initial assessment of patient symptoms, guide them to appropriate care levels, and reduce administrative overload — delivering measurable improvements in efficiency and care quality.

2. Business Problem

Healthcare facilities currently face:

- Overburdened front-desk and nursing triage staff
- **Long patient wait times** and **misprioritization**
- Inefficient use of clinical staff for non-emergency cases
- **Delayed care**, negatively impacting patient outcomes and satisfaction

3. Proposed AI Agent Solution

A virtual triage assistant deployed via website, mobile app, and kiosks in clinics/hospitals that:

- Collects **patient symptoms and history** using conversational AI
- Performs **preliminary risk assessment** using medical guidelines
- Provides **self-care instructions** or schedules urgent/emergency consults
- Integrates with **EHR systems** to pre-fill intake forms

4. Expected Benefits

Benefit	Metric	Expected Impact
Reduced Wait Time	Avg. Initial Triage Duration	↓ by 60%
Resource Optimization	Nurse/Admin Hours Saved/Month	↑ by 200+ hours
Improved Prioritization	ER Overcrowding from Low-risk Cases	↓ by 30%
Patient Satisfaction	CSAT/Feedback Scores	↑ from 70% to 90%

5. Cost Estimate (1st Year)

Item	Cost (INR)
AI Platform License (Healthcare API)	₹9,00,000
Clinical Logic Customization & QA	₹3,00,000
Integration with EHR & Telehealth	₹2,00,000
Support, Monitoring & Compliance	₹2,00,000
Total	₹16,00,000

6. ROI & Payback

- **Staff hours saved annually:** ~2,500 hours
- **Potential cost savings/year:** ₹22,00,000
- **Payback period:** 9 months
- **ROI in Year 1:** 35%+

7. Risk & Mitigation

Risk	Mitigation Strategy
Clinical accuracy concerns	Regular review by medical experts; evidence-based algorithms
Patient data privacy	HIPAA-compliant storage and encrypted channels
Resistance to automation	Training for staff + hybrid triage option

8. Conclusion

An AI Triage Agent offers a scalable, cost-effective way to enhance patient care delivery while reducing operational strain on healthcare systems. It supports smarter decision-making, faster treatment, and better patient outcomes.