



A High AI-Q<sup>™</sup>  
Company



# AI-Powered Patient Support and Triage Transformation

Reimagining patient support with an AI agent delivering intelligent triage, 24/7 accessibility, and operational efficiency.

## Overview

We implemented an AI-powered healthcare agent to automate routine patient inquiries, symptom triage, and appointment-related interactions. The solution enabled secure, always-on patient engagement while significantly reducing dependency on call center staff.

- AI-driven symptom assessment standardized patient navigation and improved care routing accuracy.
- Comprehensive QA validation ensured conversational accuracy, HIPAA-compliant data handling, and reliable LLM response quality at scale.



## Client Profile

A US-based premier academic medical center recognized among the top healthcare institutions by U.S. News & World Report. With a strong focus on clinical excellence, medical research, and education, the organization serves large patient populations while advancing innovation in healthcare delivery.

## Challenges: Scaling Patient Support Without Increasing Operational Burden

- High volumes of repetitive patient inquiries overwhelmed clinic staff and support teams.
- Limited after-hours availability created delays for patients seeking non-emergency medical guidance.
- Existing triage processes lacked a scalable and standardized mechanism for symptom-based care routing.

- Rising call center demand increased operational costs, prolonged wait times, and contributed to staff fatigue.

## **QBurst Solution: AI-Driven Healthcare Agent with Intelligent Triage**

We implemented a scalable AI-powered healthcare agent designed to streamline patient interactions, automate routine support, and improve access to healthcare services around the clock. The solution combined conversational AI, NLP-driven intent recognition, and intelligent symptom assessment to deliver accurate, secure, and responsive patient engagement experiences.

We also established a comprehensive Quality Engineering strategy to validate conversational reliability, clinical safety, and compliance with healthcare data privacy standards.

- AI-powered patient support for appointment scheduling, FAQs, and medication refill requests
- Intelligent symptom checker for standardized patient triage and care navigation
- Human escalation workflows for sensitive or high-risk interactions
- Secure backend validation aligned with HIPAA compliance requirements
- DeepEval-based LLM validation for accuracy, faithfulness, hallucination rates, and answer relevance

## **Technical Highlights**

- Conversational AI with Natural Language Processing (NLP)
- AI-driven symptom triage workflows
- Human-in-the-loop escalation mechanisms
- DeepEval-based LLM response quality validation

- Secure healthcare data integration and compliance testing
- 24/7 scalable cloud-based architecture

## Impact

- Reduced Level 1 patient support inquiries by over 60%, significantly lowering call center workload and operational costs.
- Enabled clinicians and administrative teams to focus on higher-value patient care activities.
- Improved patient experience with instant 24/7 access to healthcare information and services.
- Standardized symptom triage and patient routing for safer, more consistent care guidance.
- Supported scalable patient engagement during seasonal demand spikes and public health events.