iJRASET
International Journal For Research in Applied Science and Engineering Technology

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 14 **Issue:** IV **Month of publication:** April 2026

DOI: https://doi.org/10.22214/ijraset.2026.80822

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International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 14 Issue IV Apr 2026- Available at www.ijraset.com

Top Use Cases of AI Telecaller in Healthcare: From Symptom Checking to Follow-Ups

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Abstract: ***AI-driven conversational systems, often described through terms such as AI Telecaller in Healthcare software, AI voice calling system, AI call bot, and AI calling software, are increasingly being integrated into healthcare delivery. These systems enable scalable, patient-centric communication across clinical workflows, including symptom triage, follow-up care, reminders, and patient education. This review synthesizes current evidence on the clinical applications of AI telecaller systems, focusing on their role in improving access, adherence, and continuity of care.***

I. INTRODUCTION

Healthcare systems globally face challenges in accessibility, workforce limitations, and continuity of care. Advances in artificial intelligence (AI), particularly conversational agents and voice-based systems, have enabled the development of scalable communication interfaces that support clinical workflows beyond traditional in-person interactions.

AI telecaller systems - leveraging AI call routing, AI call tracking, AI call monitoring, and AI Telecaller in Healthcare agent frameworks - operate as intelligent intermediaries between patients and healthcare systems. Unlike conventional telecommunication systems, these solutions integrate natural language processing (NLP), clinical decision logic, and predictive analytics to deliver context-aware interactions.

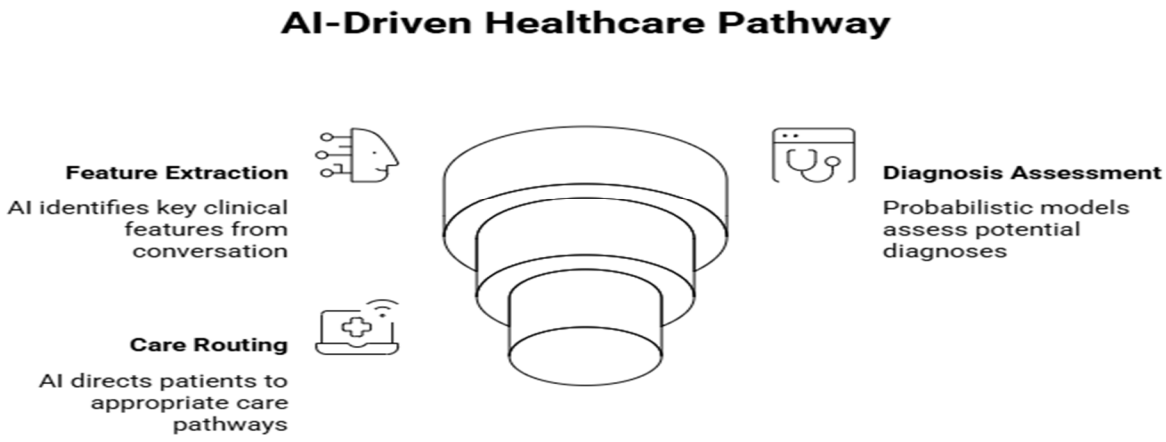
Recent evidence suggests that AI-based conversational agents are being used across diverse healthcare domains, including triage, chronic disease management, and behavioral interventions, with measurable improvements in patient engagement and care delivery efficiency (1).

A. AI-Based Symptom Checking and Triage

One of the most prominent applications of AI telecallers is symptom assessment and triage. AI-enabled systems can simulate structured clinical interviews, collecting patient-reported symptoms and generating risk-based recommendations.

AI-driven symptom checkers function by:

- Extracting clinical features through conversational inputs
- Applying probabilistic models to assess potential diagnoses
- Directing patients via AI call routing to appropriate care pathways



Studies indicate that AI-enabled symptom checker systems can support self-triage and early decision-making, improving access to care while reducing unnecessary healthcare utilization (2). Additionally, comparative research has demonstrated that AI-based symptom checkers can achieve diagnostic accuracy levels comparable to clinicians in certain domains, though variability persists (3).

From a systems perspective, these tools reduce frontline burden while maintaining accessibility, particularly in resource-constrained settings.

B. Automated Reminders and Adherence Support

Missed appointments and poor medication adherence are major contributors to suboptimal outcomes. AI telecaller systems, using AI calling software, provide automated and personalized reminder services.

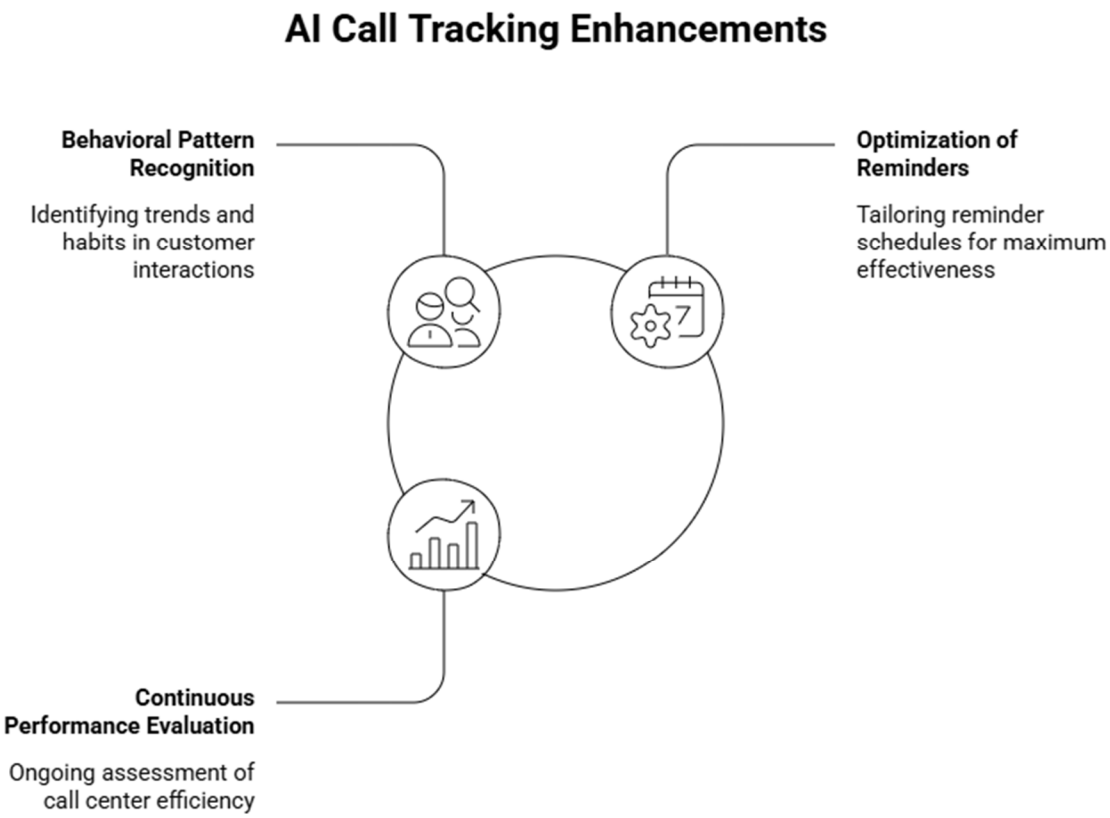
These include:

- Appointment confirmations and rescheduling
- Medication adherence reminders
- Preventive care notifications

Conversational AI systems enable dynamic interaction, allowing patients to respond, confirm, or modify appointments in real time. Evidence suggests that such interventions improve adherence and engagement, particularly when integrated into chronic disease management frameworks (4).

AI call tracking and AI call monitoring further enhance these systems by enabling:

- Behavioral pattern recognition
- Optimization of reminder timing and frequency
- Continuous performance evaluation



Follow-Ups and Chronic Disease Management

AI telecallers play a critical role in post-consultation follow-ups and chronic disease monitoring. These systems enable longitudinal patient engagement without requiring continuous clinician involvement.

Typical use cases include:

- Post-discharge follow-up calls
- Monitoring symptom progression
- Assessing medication adherence

AI conversational agents have demonstrated effectiveness in supporting self-management of chronic conditions, including diabetes, hypertension, and mental health disorders (4,5). These systems provide structured follow-up protocols while identifying red flags that require escalation.

The integration of AI Telecaller in Healthcare solutions with electronic health records enhances data continuity, enabling predictive analytics and proactive care interventions.

C. Preventive Care and Recall Systems

Preventive healthcare delivery often depends on timely patient recall. AI telecaller systems can automate recall workflows for:

- Vaccinations
- Cancer screening
- Routine health check-ups

AI systems utilize predictive models to identify at-risk populations and initiate targeted outreach. This approach improves preventive care uptake and aligns with population health management strategies.

The use of AI for sales calls in this context should be interpreted as patient acquisition and engagement, focusing on increasing participation in beneficial health programs rather than commercial intent.

D. Patient Education and Behavioral Interventions

AI telecallers are increasingly used for structured patient education, delivering consistent and personalized health information.

Applications include:

- Disease-specific counseling
- Lifestyle modification guidance
- Post-treatment instructions

Systematic reviews indicate that AI conversational agents are effective in improving patient knowledge, engagement, and self-management behaviors, particularly in chronic disease populations (4).

These systems support:

- Repetition and reinforcement of key messages
- Multilingual communication
- Personalization based on patient history

E. Navigation and Care Coordination

Healthcare navigation remains complex for many patients. AI telecallers provide intelligent care coordination, ensuring that patients are directed to appropriate services.

Using AI call routing, these systems:

- Identify patient intent
- Prioritize urgent cases
- Connect patients to relevant departments

This reduces system inefficiencies, minimizes delays, and improves patient experience. Importantly, AI systems act as decision-support layers, augmenting rather than replacing clinical judgment.

F. Patient Retention and Engagement

Long-term engagement is critical for effective healthcare delivery. AI telecaller systems enable continuous communication through:

- Follow-up reminders
- Re-engagement of inactive patients
- Monitoring of care continuity

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Through AI call tracking, healthcare providers can identify patients at risk of disengagement and implement targeted interventions. These strategies improve retention rates and ensure continuity of care, particularly in chronic disease programs.

G. Operational Intelligence: Monitoring and Optimization

AI telecaller systems incorporate analytics frameworks that support:

- AI call monitoring for quality assessment
- Performance benchmarking
- Outcome-based optimization

These systems generate actionable insights, enabling healthcare organizations to refine communication strategies and improve clinical outcomes.

H. Role of Digital Platforms such as HiDoc

Platforms such as HiDoc are contributing to the integration of AI-driven communication tools in clinical practice (6). By combining evidence-based medical content with digital engagement tools, such platforms support clinicians in adopting AI-enabled workflows.
Additionally, innovations like Unnati – an AI medical representative are transforming clinician engagement by delivering personalized, real-time scientific updates, product information, and guideline-based insights through conversational interfaces. Unnati enhances the reach and efficiency of medical communication while maintaining consistency and accuracy in information delivery.
HiDoc also facilitates dissemination of updated clinical knowledge, complementing AI telecaller systems by ensuring that patient-facing communication aligns with current evidence.

II. CHALLENGES AND LIMITATIONS

Despite their potential, AI telecaller systems face several challenges:

1) Limited contextual understanding due to fragmented health data
2) Variability in diagnostic accuracy
3) Ethical concerns regarding data privacy and decision-making

Studies highlight that current systems often lack comprehensive integration with patient medical history, which may limit their effectiveness in complex clinical scenarios (2).

III. CONCLUSION

AI telecaller systems encompassing technologies such as AI call bot, AI voice calling system, AI call routing, and AI call monitoring are transforming healthcare communication into a continuous, scalable, and patient-centric process.
From symptom checking and triage to follow-ups, reminders, education, and retention, these systems demonstrate significant potential in improving healthcare delivery. Importantly, they function as augmentative tools, enhancing clinician efficiency while maintaining patient engagement.
As integration with clinical systems improves and evidence continues to evolve, AI telecallers are expected to become a foundational component of digital healthcare infrastructure.

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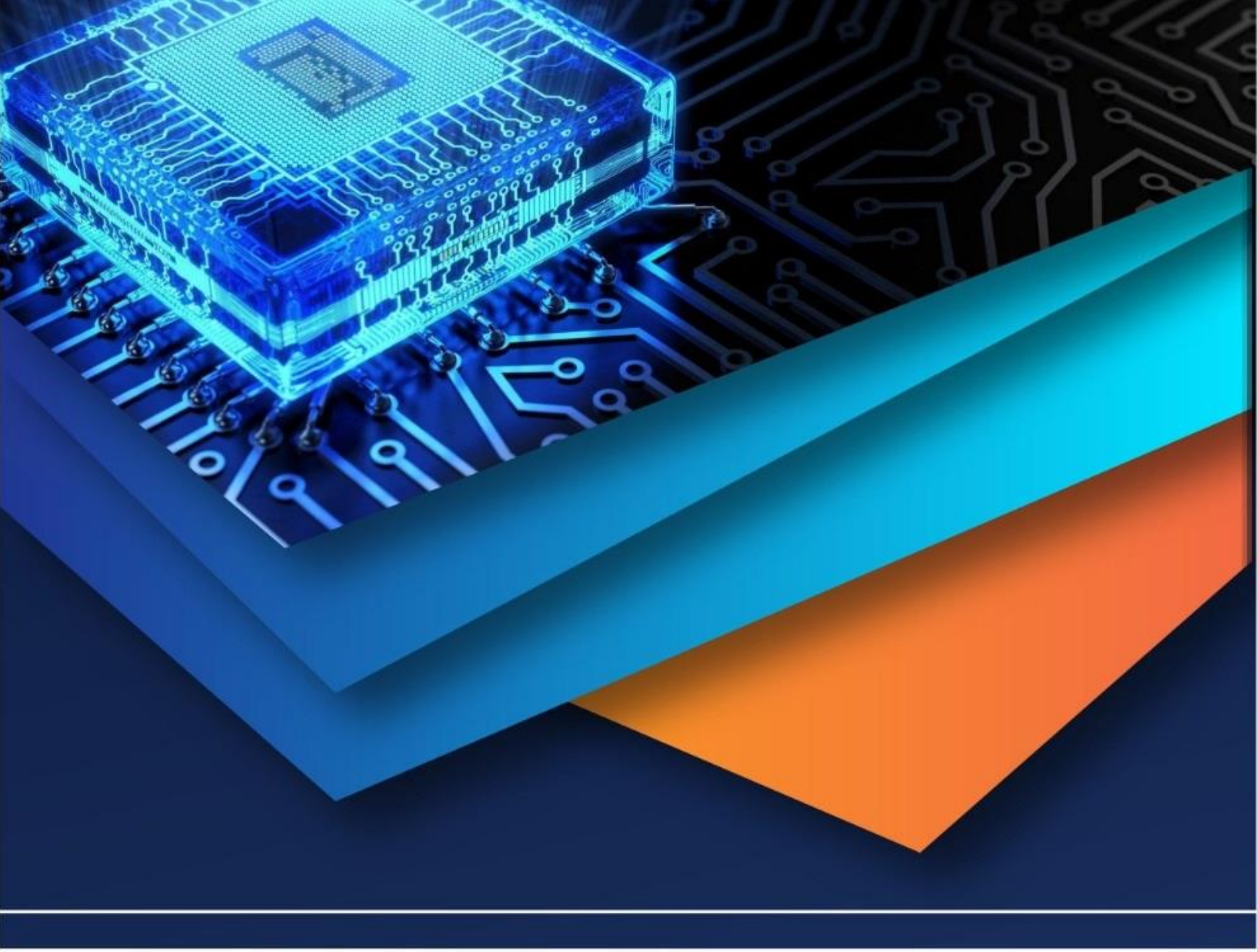

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