

# A Novel Conversational Artificial Intelligence Framework for Customization and Standardization of Wound Management



Gurler N, Bulbul HS, Cheng P, Wu K, Guler O  
eKare Inc, Fairfax, VA

## Problem Definition & Needs

CLINICAL PRACTICE	Variability in Expertise Lack of Standardization Need for Personalized Care Complex Wound Management Access to Up-to-Date Information
CLINICAL RESEARCH	Participant Recruitment Challenges Complex And Inefficient Data Collection Informed Consent Process Is Too Complex Insufficient Real-time Monitoring Difficult To Analyze Unstructured Data
WOUND CARE EDUCATION	Outdated Learning Material Delayed Feedback Lack Of Personalized Learning Paths Limited Reach Of Educational Programs Challenges In Effectively Educating Patients And Caregivers

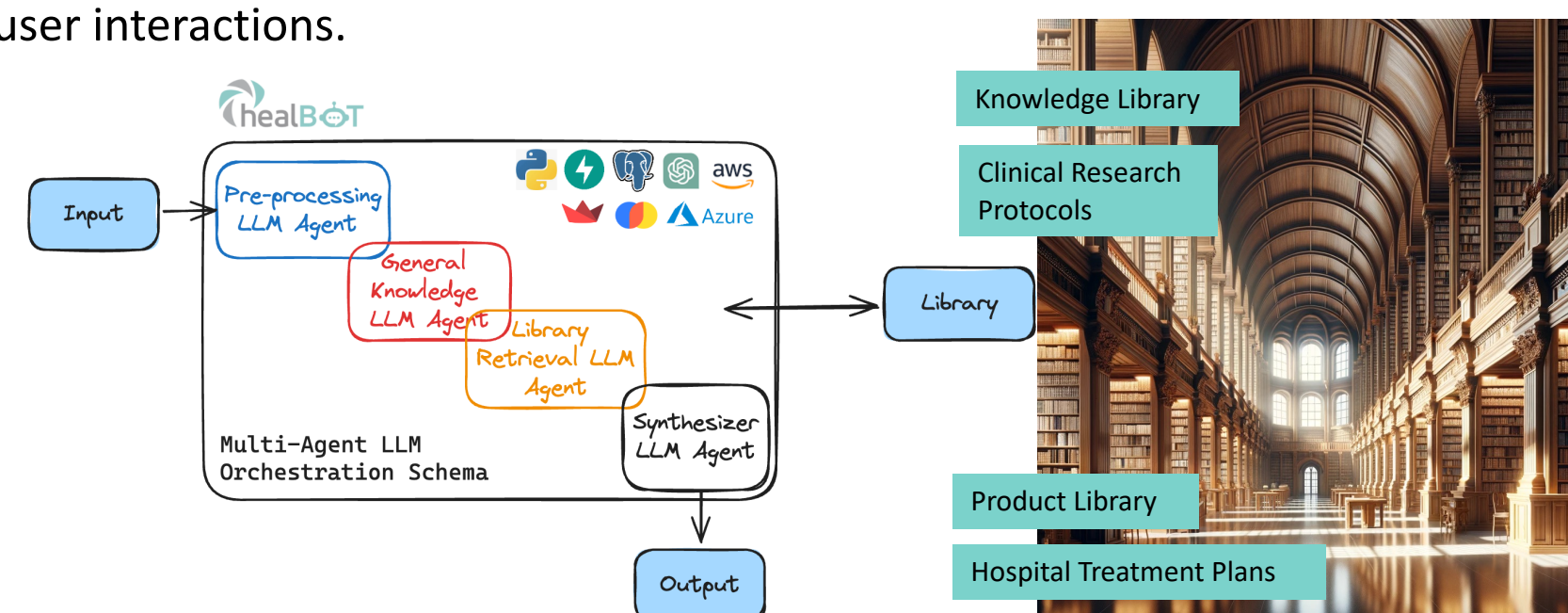
## Introducing healBot™: Revolutionizing Wound Care with AI

healBot™ is a conversational AI framework utilizing Large Language Model (LLM) technology to deliver personalized and standardized wound care across clinical practice, research, and educational settings.



### What Distinguishes healBot™?


healBot™ distinguishes itself from mainstream LLM models such as ChatGPT, Claude, and Gemini by leveraging their reasoning capabilities while integrating Retrieval Augmented Generation (RAG) technology and eKare's Proprietary Multi-Agent LLM Orchestration Schema. This approach significantly reduces the risk of "hallucinations".

Tailored to retrieve and utilize data from user-specified libraries for distinct tasks, healBot™ excels in precision. For instance, in chat applications, it not only draws answers from user-defined libraries but also transparently indicates when information is beyond its scope, or provides references for its responses, thereby enhancing trust and accuracy in user interactions.



## Applications

CLINICAL PRACTICE	<p><b>KEY FEATURES</b></p> <p><b>Rapid Information Retrieval:</b> Access clinical guidelines instantly within your workflow.</p> <p><b>Document Integration:</b> Upload and reference local or international documents seamlessly.</p> <p><b>Conversational Assistance:</b> Get precise answers from healBot's conversational AI, tailored to your needs.</p> <p><b>Enhanced Decision Support:</b> Enhance decision-making with evidence-based guidance, keeping you in control.</p>	<p><b>USE CASES &amp; IMPACTS</b></p> <p><b>Wound Care Clinics</b> <b>Impact of healBot:</b> Enhances patient care by providing hospital staff with immediate, easy access to the latest wound care protocols and guidance directly within their workflow, optimizing treatment strategies and outcomes.</p> <p><b>Nursing Homes</b> <b>Impact of healBot:</b> Supports consistent preventive care and timely treatment for pressure ulcers in elderly patients, significantly reducing incidence rates and improving health outcomes through structured, guideline-driven care.</p> <p><b>Home Health Care</b> <b>Impact of healBot:</b> Elevates home-based wound care by supplying real-time guidance and recommendations to caregivers and healthcare providers, enhancing the quality of care. healBot facilitates stronger connections between doctors and patients, ensuring continuous monitoring and personalized care, which reduces the need for frequent hospital visits and increases patient comfort and satisfaction.</p>	 <p>Scan the QR code to watch a demo video</p>
CLINICAL RESEARCH	<p><b>KEY FEATURES</b></p> <p><b>Instant Protocol Access:</b> Retrieve trial details quickly, enhancing workflow efficiency in real-time clinical settings.</p> <p><b>Document Management:</b> Effortlessly upload and manage research protocols and compliance documents.</p> <p><b>Conversational AI:</b> Get precise, AI-driven answers to complex queries about trial protocols and guidelines.</p> <p><b>Compliance Monitoring:</b> Ensure rigorous adherence to protocols with real-time monitoring and deviation alerts</p>	<p><b>USE CASES &amp; IMPACTS</b></p> <p><b>Pharmaceutical Research Labs</b> <b>Impact of healBot:</b> Enhances efficiency and protocol adherence, streamlining multi-phase clinical trials management.</p> <p><b>University Medical Centers</b> <b>Impact of healBot:</b> Provides instant access to detailed protocols, supporting academic research and fostering a robust learning environment.</p> <p><b>Contract Research Organizations (CROs)</b> <b>Impact of healBot:</b> Offers customized protocol access and compliance monitoring, reducing errors and improving trial outcomes.</p> <p><b>Hospital-Based Research Units</b> <b>Impact of healBot:</b> Seamlessly integrates with hospital systems, providing protocol references and deviation alerts to ensure optimal patient management and trial integrity.</p>	 <p>Scan the QR code to watch a demo video</p>

PRODUCT RECOMMENDATION	<p><b>KEY FEATURES</b></p> <p><b>Alerts for Non-Healing Wounds:</b> Automated analysis detects wounds at risk for delayed healing, suggesting advanced care options like CTP and NPWT.</p> <p><b>Coverage Alignment:</b> Intelligent system cross-references wound characteristics with the latest local and national guidelines to guide coverage eligibility.</p> <p><b>Reimbursement Simplified:</b> Streamlines billing with automated coding and documentation aligned with current reimbursement policies.</p> <p><b>Customized Care Suggestions:</b> Generates recommendations for advanced wound care techniques based on individual wound metrics, ensuring adherence to your hospital's formulary and coverage standards.</p>	<p><b>USE CASES &amp; IMPACTS</b></p> <p><b>Hospital Wound Care Departments</b> <b>Impact of healBot:</b> Automates the alert system for non-healing wounds, ensuring timely intervention with advanced treatments like CTP and NPWT, and aligns with coverage to optimize patient outcomes and department efficiency.</p> <p><b>Private Clinics</b> <b>Impact of healBot:</b> Provides clinicians with smart alerts for delayed wound healing, facilitating early adoption of advanced care techniques. Enhances financial viability by adhering to detailed coverage guidelines for sustainable patient care.</p> <p><b>Community Health Centers</b> <b>Impact of healBot:</b> Empowers primary care providers with critical alerts for at-risk wounds, enabling quick escalation to advanced wound care aligned with insurance coverage, thus elevating care quality and reducing treatment delays.</p>	 <p>Scan the QR code to watch a demo video</p>
------------------------	---	--	---

WOUND CARE EDUCATION	<p><b>WoundCoach</b> Powered by healBot™ and Nancy Morgan Wound Care</p> <p>See Poster # PI-022</p> <p>Wound Coach was developed using the healBot™ framework in collaboration with Nancy Morgan Wound Care, creating an interactive chatbot platform that enhances wound care education by bridging knowledge gaps and deepening understanding of wound management practices.</p>	<p><b>Interactive Chatbot Platform for Wound Care Education</b></p> <p>When should you use off-loading for DFUs?</p> <p>Off-loading should be used for Diabetic Foot Ulcers (DFUs) as an essential aspect of diabetic wound care to reduce pressure, or offload, which is crucial in managing these conditions. The objectives for diabetic footwear, which plays a significant role in off-loading, include:</p> <ul style="list-style-type: none"> <li>Relief of areas of excessive plantar pressure.</li> <li>Reduction of shock.</li> <li>Reduction of shear.</li> <li>Accommodation of deformities.</li> <li>Stabilization and support of deformities.</li> </ul> <p>When should I do a wound culture?</p> <p>A wound culture should be performed under the following circumstances:</p> <ol style="list-style-type: none"> <li>Signs and Symptoms of Systemic Infection: Cultures are indicated for wounds or incision lines that exhibit signs and symptoms suggesting a systemic infection.</li> <li>Infection Beyond Wound Perimeter: If the infection is suspected to have spread beyond the immediate area of the wound.</li> <li>Lack of Healing: For wounds that have shown no signs of improvement or healing.</li> <li>Clinical Signs of Infection: When clinical characteristics and symptoms standard of care suggest a wound infection, visualization and assessment are crucial for deciding on a culture.</li> <li>Identification and Sensitivities: To identify, confirm, and determine sensitivities of invading organisms, especially when a wound infection is suspected based on clinical</li> </ol>
----------------------	--	---

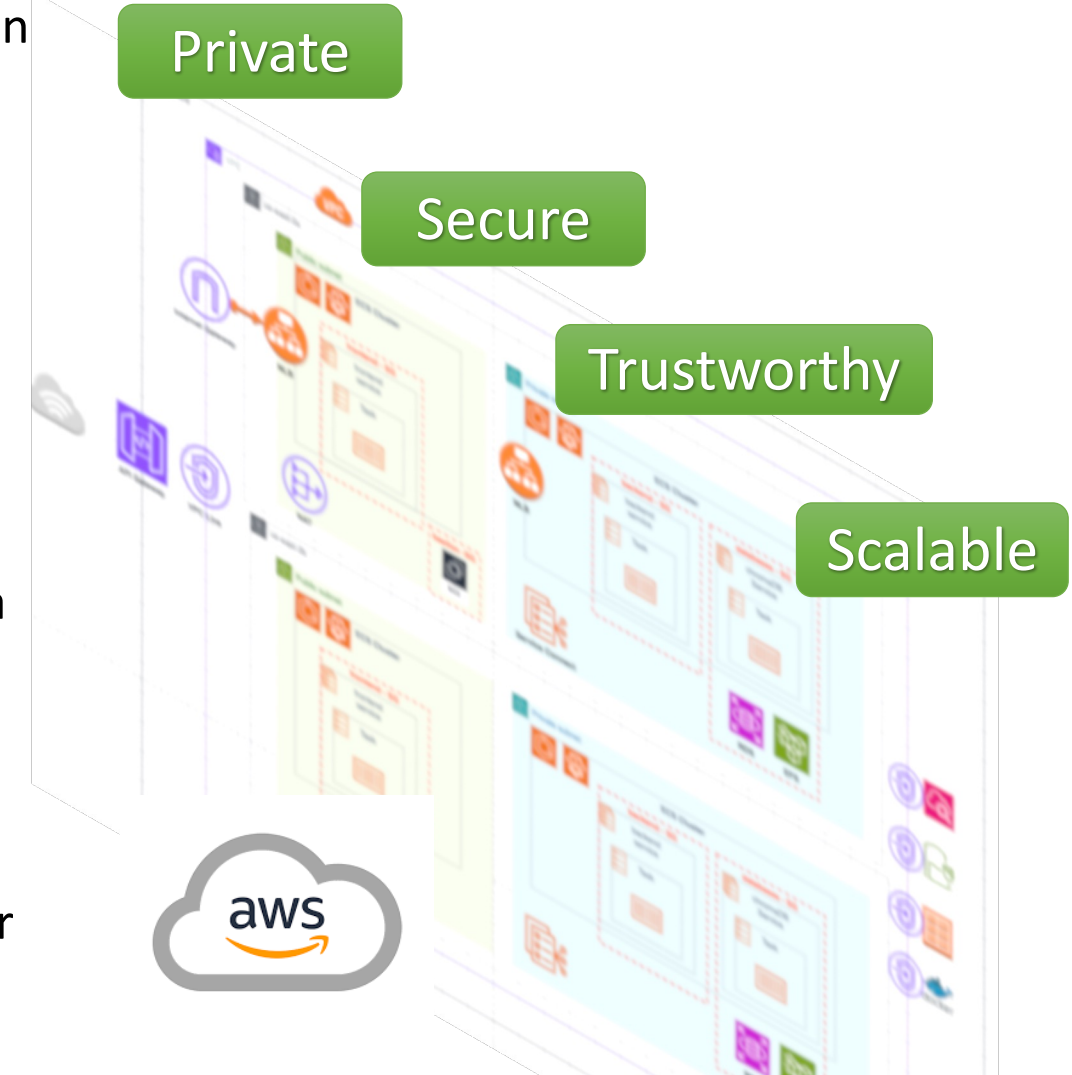
## Infrastructure & Security

**Cloud Deployment:** healBot™ is hosted on Amazon Web Services (AWS), utilizing best practices for robust performance and reliability.

**Security and Privacy:** Designed with privacy at its core, healBot™ ensures a secure and trustworthy environment, scaling seamlessly while safeguarding user data.

**Data Integrity:** Our policy guarantees that no data is shared with third parties, maintaining strict confidentiality and user control.

**Feedback Mechanisms:** Integrated feedback systems enable continuous improvement and user engagement, enhancing the overall effectiveness of the platform.



## Discussion & Conclusion

In **clinical settings**, healBot™ serves as an invaluable aid for healthcare professionals by enhancing decision-making with real-time, data-driven recommendations that adhere to local treatment guidelines without replacing their expert judgment. It ensures a high standard of patient care by reducing variability among practitioners and streamlining the treatment process, thereby boosting both efficiency and efficacy.

In the realm of **clinical research**, healBot™ revolutionizes protocol adherence and data management, critical for reliable outcomes and trial success. Its ability to swiftly access trial details and manage compliance documentation, paired with its AI-driven conversational support, streamlines the workflow in clinical settings.

In **education**, the Wound Coach was developed using the healBot™ framework in collaboration with Nancy Morgan Wound Care, creating an interactive chatbot platform that enhances wound care education by bridging knowledge gaps and deepening understanding of wound management practices.

Moving forward, healBot™ will further integrate into clinical and research workflows, setting new standards in wound care management through enhanced care delivery and more robust research methodologies.

## Contact

For more information, meet us at booth #434  
eKare, Inc | <https://ekare.ai/> | [info@ekare.ai](mailto:info@ekare.ai)