# NANCY MORGAN WOUND CARE

Andy Marxen, BAN, RN, CWCN, MBA, Nancy Morgan, RN, BSN, MBA, WOC Nancy Morgan Wound Care



The transformative impact of artificial intelligence (AI) is shifting wound management from traditional care to advanced, precise methods1. Similarly, recent advancements in Generative AI promises to transform individual learning experiences, leading to innovative educational tools2. Recognizing the importance of education in improving patient outcomes, we introduce "Wound Coach," an Al-powered chatbot platform that offers interactive, accurate, and context-aware learning for wound care professionals.

## Methods

"Wound Coach" is the product of an innovative collaboration between a leading wound education entity (WEE) and a digital wound-imaging company (WIC), utilizing WIC's advanced infrastructure (healBot™). It features a document management system for continuous updates to the educational library by WEE, and an interactive chatbot system that allows users to engage with these curated resources.

The chatbot framework utilizes Retrieval Augmented Generation (RAG) to ensure "Wound Coach" offers accurate information from WEE's library, eliminating AI hallucinations that are typically encountered with existing chatbots3. With its user-friendly frontend and backend prompt orchestration, the chatbot provides an interactive educational experience. To establish a foundation for privacy and scalability, the platform has been deployed on the cloud.



- 1. Mark Swerdlow, Jessica Lo, and David G. Armstrong. Reliability of an Al-Powered ApplicaDon Across Different Mobile Devices for Assessment of Chronic Wounds Advances in Wound Care 2024, vol. 13:1, 14-21, doi:10.1089/wound.2022.009
- 2. Safranek CW, Sidamon-Eristoff AE, Gilson A, Chartash D. The Role of Large Language Models in Medical Education: Applications and Implications. JMIR Med Educ. 2023 Aug 14;9 doi: 10.2196/50945.
- 3. Vipula Rawte, Amit Sheth, Amitava Das. A Survey of HallucinaDon in Large FoundaDon Models, 2023. arXiv:2309.05922

## **Revolutionizing Wound Care Education Through Generative Artificial Intelligence:** The Development and Impact of WoundCoach

#### When should I do a wound culture?

A wound culture should be performed under the following circumstances:

- 1. Signs and Symptoms of Systemic Infection: Cultures are indicated for wounds or incision lines that exhibit signs and symptoms suggesting a systemic infection.
- 2. Infection Beyond Wound Perimeter: If the infection is suspected to have spread beyond the immediate area of the wound.
- 3. Lack of Healing: For wounds that have shown no signs of improvement or healing.
- 4. 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.
- . Identification and Sensitivities: To identify, confirm, and determine sensitivities of invading microorganisms, especially when a wound infection is suspected based on clinical

[ Ask Wound Coach ]

When should you use off-loading for DFUs?

Solution of the second 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:

- Relief of areas of excessive plantar pressure.
- Reduction of shock.
- Reduction of shear.
- Accommodation of deformities.
- Stabilization and support of deformities.

#### [ Ask Wound Coach ]



#### What "Wound Coach" is:

- Bedside assistant guiding safe and appropriate wound care
- A mechanism to make policies and procedures readily available
- An educational tool for novice or advanced beginners in wound care
- An educational tool to verify care decisions for wound care specialists

#### What "Wound Coach" is not:

- A decision-making tool for specific dressings to use
- A decision-making tool for adjunctive modalities and skin substitutes
- An electronic medical record
- Telehealth wound consultation

#### What "Wound Coach" will become:

- An educational platform to earn Continuing Education Credits
- Updateable and customizable platform to guide standardized practice

From March 15th to April 11th, 2024, There were 38 invitations sent to various clinicians with multiple backgrounds. 18 of these responded and used "Wound Coach" on at least 1 occasion. There were 88 total interactions and 47 reactions liking or disliking Wound Coach's answers. There were 39 "Likes" and 8 "Dislikes". It is important to know that 1 beta-tester alone disliked 5 responses and is an outlier due to questions around specific brand names or improper grammar. We will continue to beta-test through mid-May, 2024.





How do I manage hypergranulation tissue?

The recommended methods for managing hypergranulation tissue, based on the given sources, include:

#### 1. Silver Nitrate Application:

 Silver nitrate applicator sticks are specifically used to cauterize and debride hypergranulation tissue or calloused edges in wounds or ulcerations. This method involves carefully applying silver nitrate to the affected tissue, taking precautions to avoid contact with healthy skin or clothing due to its caustic nature. Protective equipment is recommended during application, and any excess silver nitrate should be

#### 2. Sharp Debridement:

 Utilizing sharp debridement as a method to renew the wound healing cycle, which can be beneficial in managing hypergranulation tissue by removing unhealthy tissue and promoting the formation of healthy granulation tissue.

#### 3.Wound Dressing Selection:

• Choosing appropriate wound dressings that suite the wound type, exudate level, and patient condition is crucial. Dressings that provide thermal insulation contain exudate, and reduce pain can support the healing environment for wounds with hyper-granulation tissue. The selection should also consider the wound's location, characteristics, and the patient's specific needs

BETA	Total	Minus Outliner
Total Beta Testers	18	17
Total Interactions	91	82
Wound Coach Response "Likes"	41	40
Wound Coach Response "Dislikes" 😱	8	3



Initial tests of "Wound Coach," focusing on content relevance and accuracy, have shown promising results, confirming the platform's effective delivery of precise wound care information. A select group of wound specialists rigorously tested the platformto collect detailed feedback, further refining its functions and instructional value. This feedback will drive the continuous improvement of "Wound Coach," ensuring that the platform not only delivers accurate and up-to-date information but also aligns perfectly with the practical and educational demands of wound care specialists. (Results below)



"Wound Coach" represents a crucial step forward in Al-driven wound care education, providing a scalable solution for ongoing professional learning. It emphasizes the standardization of care through up-to-date resource management and interactive user engagement. This platform could become an integral part of a modernized Continuing Education (CE) system, offering dynamic and personalized learning experiences. "Wound Coach" evolution aims to revolutionize skill acquisition for healthcare professionals, ensuring access to the most current, standardized, and validated wound care practices.





Necip Gurler, PhD, Samet Bulbul, MSc Patrick Cheng, MBA, Ozgur Guler, PhD eKare, Inc

### **Results**

## Discussion



Visit us at Booth: 434



Andy@nmwoundcare.com