

Application for Efficient Wound Management

Introduction:

In the rapidly evolving landscape of healthcare, precision and efficiency are paramount. This case study unveils a transformative solution that addresses a critical challenge faced by healthcare providers – **the accurate and seamless documentation of patient wounds**. With a focus on simplicity and effectiveness, this healthcare application aims to revolutionize the way wound information is captured, integrated with **Epic EMR**, and communicated among medical teams. Let's explore how this innovation approach has the potential to reshape the field of wound documentation, resulting in enhancing patient care and streamlining medical processes.

Client Details:

Name: Confidential | **Industry:** Healthcare | **Location:** USA

Technologies:

Mobile app (iOS): iOS Native, Swift

Web Backend: Node.js , Express.js

Web Frontend: JavaScript , ReactJS

EMR Integration: EPIC FHIR APIs [patient verification and upload of clinical wound documents]

Challenges:

Here are the key challenges that the healthcare facility faced with wound documentation before implementing the new solution:

- Manual documentation methods were inefficient and error-prone
- Handwritten notes and physical photos made it hard to track wound details over time
- No EMR integration resulted in fragmented patient records
- Lack of central wound database hindered coordination among medical teams
- Documentation took away time from patient care during visits
- Difficult to analyze treatment effectiveness with scattered data

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- Documentation bottlenecks arising out of no wound photo capture

By moving to a streamlined digital system, integrated with their EMR, the facility was able to overcome these challenges and improve clinical workflows related to wound management.

Project Description:

The application introduces a comprehensive approach to redefining wound documentation in the healthcare sector. Seamlessly integrating with **Epic EMR**, this mobile application harnesses cutting-edge technology to alleviate major pain points for providers. It enables a more accurate, efficient, and collaborative approach to wound management, leading to enhanced patient care.

The solution encompasses several key facets:

- **Epic EMR Integration:** By leveraging the power of **FHIR** APIs, the application verifies patient information directly from the Epic EMR system. Furthermore, the clinical wound document report is seamlessly uploaded to the Epic FHIR record, creating an unbroken connection with the electronic medical records system.
- **Barcode Integration:** The application seamlessly incorporates barcode scanner peripherals, enabling swift and precise patient identification. This crucial feature guarantees that the patient's correct information is captured and linked to the precise wound data.
- **Efficient Data Entry:** Healthcare professionals can swiftly input basic wound information through the intuitive user interface. This eliminates the need for manual data entry, significantly reducing the risk of transcription errors and conserving valuable time.
- **Line Chart Progress:** The application displays a dynamic line chart that tracks the progress of patient wounds over time. This visual representation empowers healthcare providers to assess the impact of treatments and make informed decisions about patient care.
- **Innovative Measurement Techniques:** Our healthcare application employs advanced technologies such as Core ML and AR Kit to revolutionize wound assessment. Core ML's machine learning capabilities enable the automatic calculation of wound dimensions from images, ensuring accuracy and efficiency. AR Kit enhances this process by overlaying virtual measurement tools on wound images, allowing healthcare providers to precisely measure length and width. This helps in better treatment decisions, faster assessments for patients, and the possibility of improving healthcare in the long run.

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- **Image Capture:** The solution facilitates the capture of high-quality images of patient wounds. This visual documentation plays a pivotal role in accurate assessment, continual monitoring, and strategic treatment planning.
- **Streamlined Workflow:** The application's workflow is thoughtfully designed for simplicity and efficiency. Guiding users through each step, it ensures that no critical information is overlooked.
- **Data Security:** The application places high importance on patient data security, facilitating secure transmission of information to the hospital's server and ensuring full compliance with healthcare privacy regulations.
- **Enhanced Decision-Making:** The accuracy and comprehensiveness of wound documentation empower healthcare providers to make well-informed decisions about patient care, contributing to heightened treatment outcomes.
- **Time Savings:** By automating the wound documentation process, medical staff can redirect more time toward direct patient care and other mission-critical tasks.
- **Reduced Paper Usage:** The digital approach championed by the solution eliminates the need for physical paperwork, promoting eco-friendly practices and significantly reducing administrative overhead.

Benefits and Results:

Efficiency Enhancement: The application's automation significantly reduces the time healthcare professionals spend on manual data entry and document creation. This efficiency enables them to direct their focus toward providing exceptional patient care.

Error Minimization: Automation serves as a robust defense against human errors commonly associated with manual data entry. By ensuring accurate and dependable patient information, the application enhances the quality of care delivered.

Optimized Patient Care: The swift and precise wound documentation facilitated by the application equips healthcare providers with the necessary insights to make well-informed decisions. This contributes to elevated patient outcomes and a higher standard of care.

Streamlined EMR Integration: Seamless integration with Epic EMR through FHIR APIs ensures that patient data is synchronized across platforms. This integration streamlines communication between the application and Epic EMR, promoting collaboration among medical staff and enabling a more cohesive patient care.

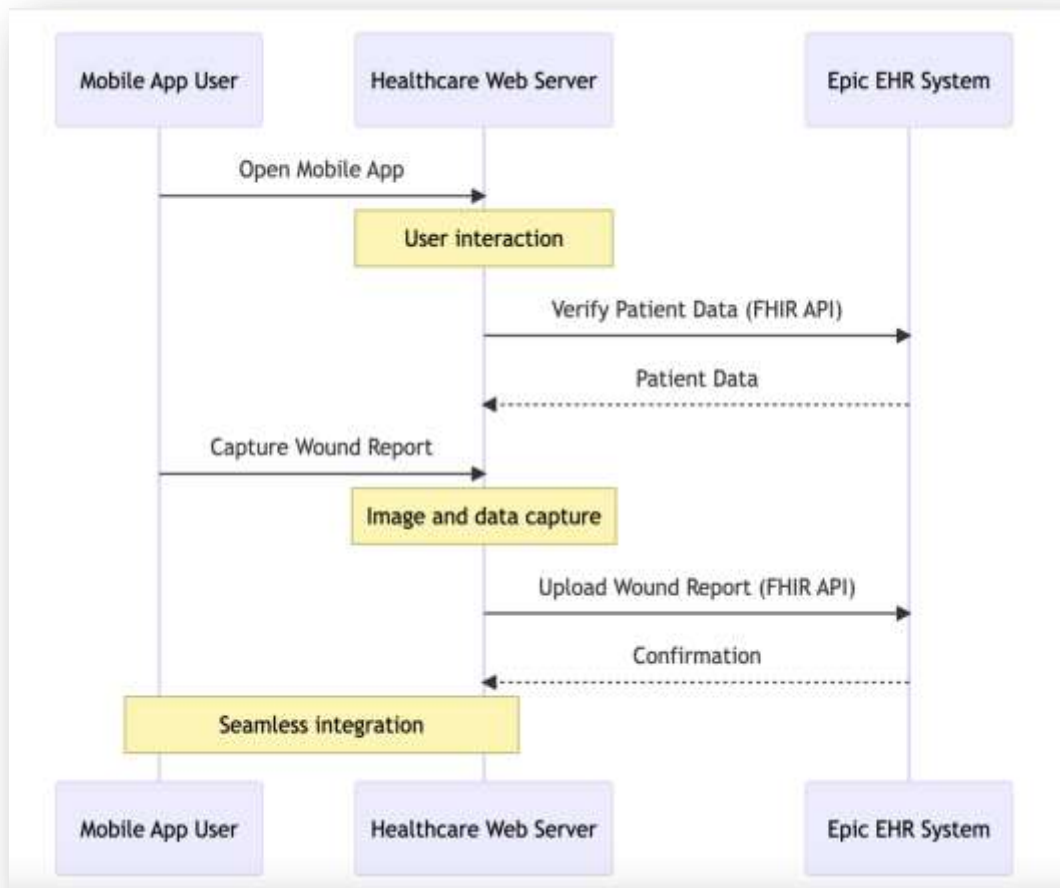
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Rapid Data Access: Digital records are readily accessible to authorized personnel, expediting communication and promoting seamless collaboration among medical staff. This quick access to vital information empowers teams to make timely interventions.

Effortless Communication: The integrated email functionality simplifies the sharing of wound documentation among medical teams and stakeholders. This streamlines communication channels, fostering a collaborative environment and swift decision-making.

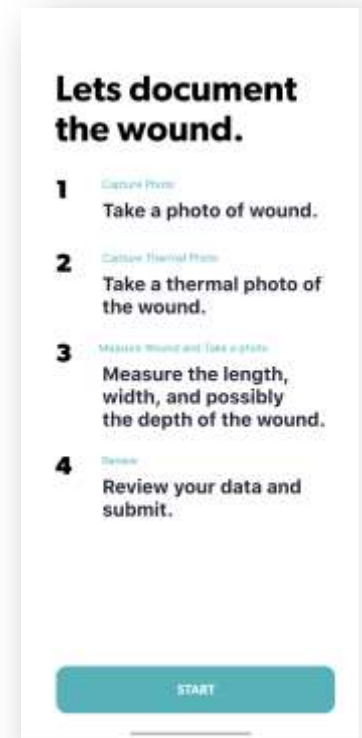
Data Analysis: Digital records enable healthcare organizations to analyze patient data on a broader scale. This data can be used to identify trends, improve treatment protocols, and enhance healthcare services, ultimately benefiting both patients and healthcare providers.

EMR Workflow:



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Screenshots:








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MBN	Wound Location	Wound Type	Date & Time	
	Back	Mud/stain	2022-05-11T16:38:48.205Z	View PDF
	Right	Mud/stain	2022-05-11T16:37:15.984Z	View PDF
	Left hand	No SM/WCS	2020-12-08T09:24:54.950Z	View PDF
	Eye	No SM/WCS	2020-12-08T16:33:34.205Z	View PDF
	Chest	No SM/WCS	2020-12-08T13:51:24.316Z	View PDF

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