

# Frontline Clinical Intervention Program: Use of a Smartphone Application to Improve Post-Operative Care

Innovation, collaboration, and technology to improve care and outcomes, reduce caregiver strain, and increase compliance in Head and Neck Cancer patients post total laryngectomy

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## Purpose

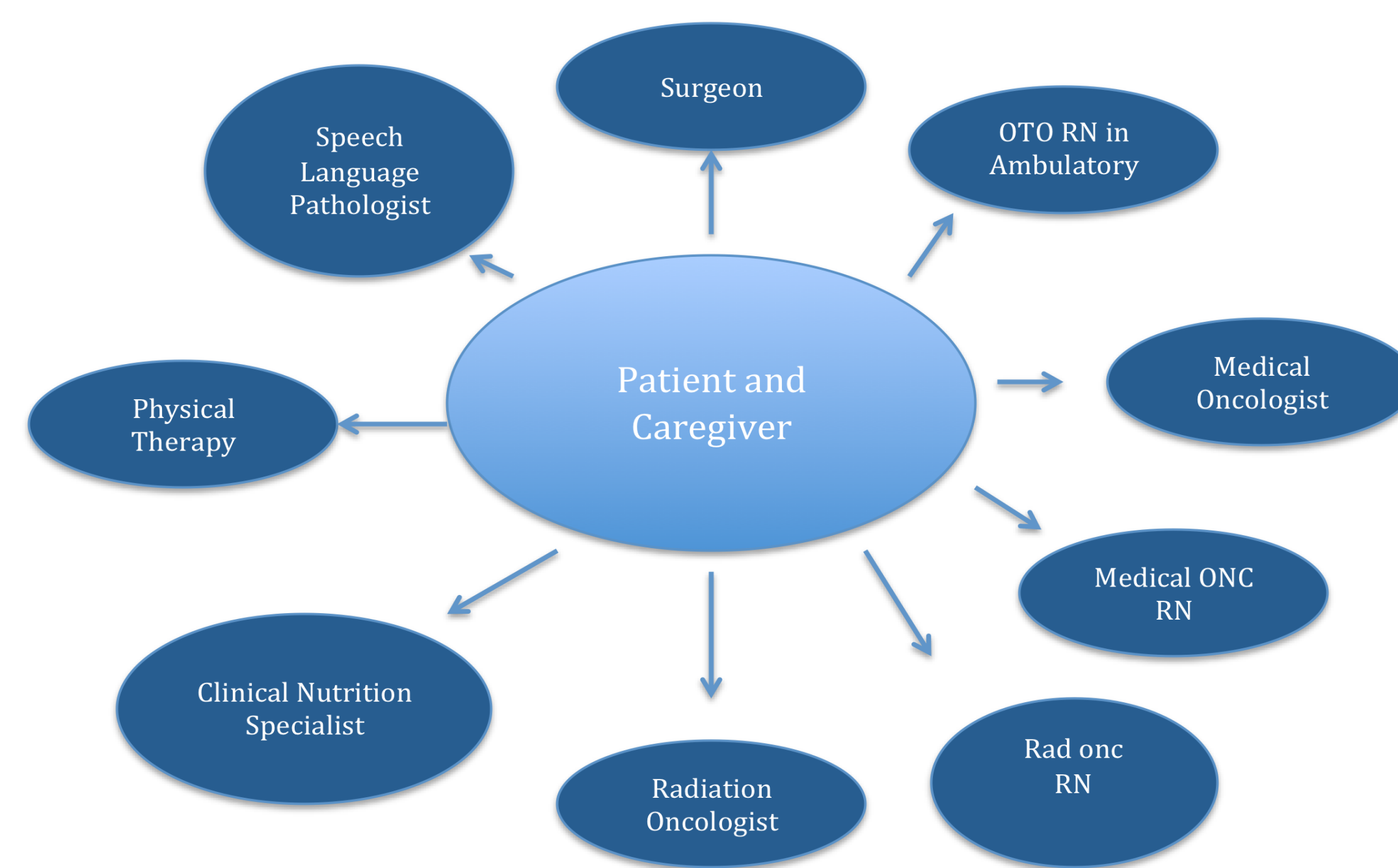
The FitNinja smartphone Application is an opportunity to expand and improve current practice with an innovative technology based tool that will support, monitor, and educate patients along their treatment continuum with multiple providers from surgery through adjunct treatment.

## Objectives

- To understand the components necessary to implement a Smartphone Application Protocol, for patients, and caregivers during treatments for head and neck cancer.
- To identify potential benefits of this technology to the patient, caregiver, provider and hospital.

## Research Questions

- How do head and neck cancer patient's post-total laryngectomy respond to health care monitoring and symptom management using a smartphone application?
- Does a smartphone application increase access to providers and remove communication barriers for the patient?
- Is the smartphone seen as a barrier to Interpersonal care?
- Does daily screening reduce complications, improve daily functioning, and restore quality of life sooner when compared to current treatment?



## Background

Head and Neck Cancer is a disease requiring aggressive surgery and prolonged adjunct treatment with radiation and chemotherapy. The physiological changes to breathing, speaking, and swallowing, along with disfigurement requires the patient and caregiver to perform complex care procedures involving a new airway, wound care, and tube feedings.

Currently patients are overwhelmed with all of the information, instructions, and do's and don'ts from the multiple providers involved in their care. Based on clinical observation at The Johns Hopkins Head and Neck Clinic, those patients and caregivers who were actively engaged (e.g., taking notes, keeping meticulous records) had better clinical outcomes compared to those who did not.

The Smartphone Application is a tool initiated by the Multidisciplinary Care Team that cares for head and neck cancer patients at Johns Hopkins Hospital, to close gaps in medical care and to support patients and their caregivers during their treatment, which averages nine months. The Otolaryngology Clinic nurse is a member of the Multi-D treatment team that meets the patient at their first visit and is the navigator who provides patient centered care and support.

Experienced patient- family centered care after discharge are both important to prevent complications, restore function, and rehabilitate the patient to a functional quality of life. Skilled communication is also a key element of good quality care. A major health care complaint of patients and caregivers is the lack of time from health care providers to explain complex matters in a way patients understand. Post-operative instructions given to patients at discharge using the traditional method are often misunderstood and can lead to poor health outcomes. Providing readily available instructions with the interactive application will help patients and caregivers prevent inappropriate care decisions based on incomplete or missing information.

## Discussion

With this tool, patients and caregivers have access to an organized clinical workflow, to guide them throughout treatment. The application uses a daily schedule to organize post-operative care, such as wound care, and teaches patients when to notify providers if there is a concern.

An adherence reminder system aids patients and caregivers to complete the complicated and time consuming daily care independently and efficiently with the support of technology.

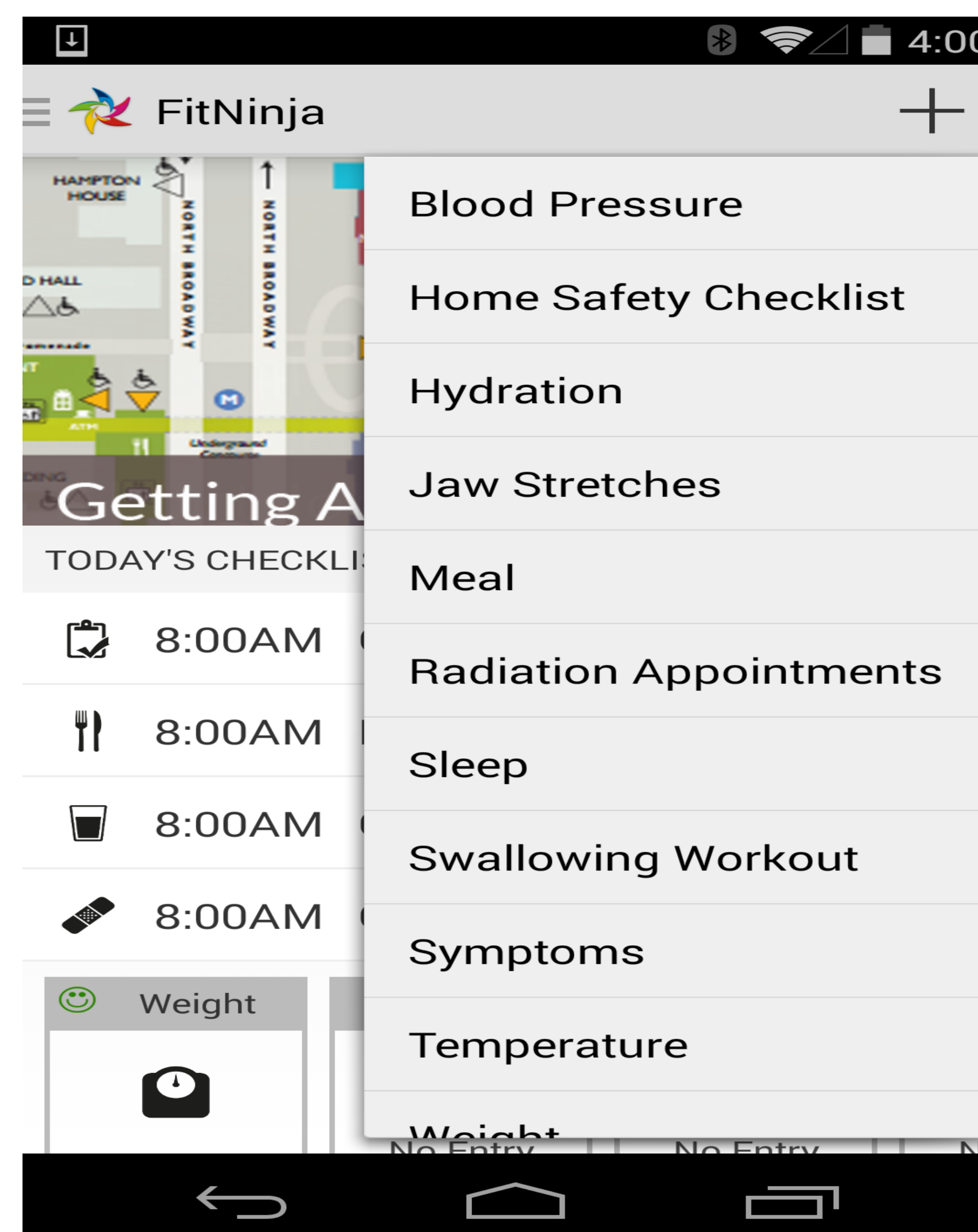
Improved access to providers reduces patient/caregiver confusion and anxiety when trying to follow the traditional verbal and written instructions.

Supporting home healthcare needs decreases stress and improves family coping.

The application removes a communication barrier as the patient completes voice rehabilitation.

Patients and caregivers can be proactive about symptom assessment and management to receive early intervention from providers.

Data received from these devices has the potential to be monitored and integrated in the Hospital Electronic Medical Record as appropriate. Data can also be incorporated into future research projects.

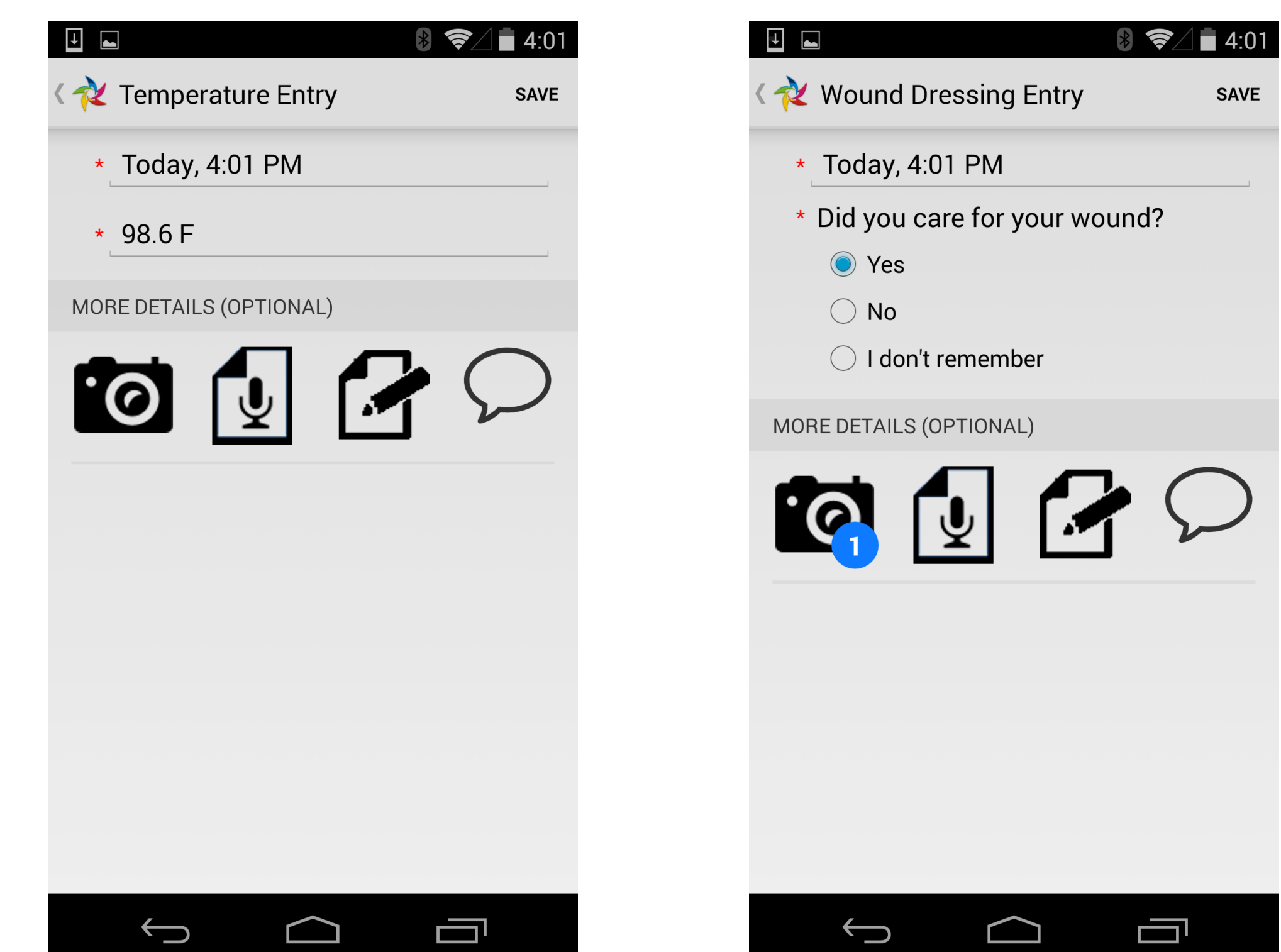


## Implementation / Next Steps

**Significance:** This project connects patients to their multiple providers throughout their treatment continuum, in order to receive timely, individualized and multidisciplinary support. Patients and caregivers will become active participants in their own care and recovery.

**Clinical Implications:** Relevant, readily available visual instructions, timely advice and feedback, and an organized treatment plan led by nurses is reported to reduce physical complications.

**Implications for Practice:** Health and Healing are the central goals of nursing. In creating a partnership with patients and caregivers, nurses support their ability to adapt to challenges set before them, and recover from these physical and psychological insults.



## References

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