

IT 899 Master's Project

Emporia State University

Spring 2026

Name of the Client/Organization

Verdon Parham, MD

Labette Health – Erie Clinic

Brief Description of Client/ Organization

Verdon Parham, MD

Dr. Verdon Parham is a board-certified Family Practice physician with over 40 years of experience serving rural Kansas patients and currently practices at Labette Health's Erie clinic. He has extensive knowledge and experience in heart failure management, predominantly caring for the Medicare population over age 65 living in rural settings.

Labette Health – Erie Clinic

Labette Health is a healthcare organization that has served Southeast Kansas since 1961, operating 11 clinics, four express care locations, and two emergency departments with over 700 caregivers dedicated to providing exceptional care centered around the communities of their service area.

Brief Description of the Audience

The target audience for this intervention consists of adult patients diagnosed with left-sided heart failure who receive care at Labette Health's Erie clinic. These patients reside in rural Southeast Kansas and face significant challenges in managing their chronic condition effectively.

Theoretically, eligible patients would be those whom Dr. Parham has identified as having one or more of the following characteristics:

- Deficient knowledge about the heart failure disease process and management
- Self-care deficits affecting their ability to manage symptoms and prevent exacerbations
- History of nonadherence to prescribed heart failure treatment plans

Patients with significant cognitive, vision, or hearing impairments would not be prime candidates for this educational method, as the intervention requires the ability to interact with and comprehend learning content delivered by the Furhat Social Robot.

This patient population represents individuals who would benefit most from enhanced heart failure education to improve their understanding of the disease, treatment regimens, and self-management strategies essential for preventing hospitalizations and improving quality of life.

Description of instructional problem or scenario, including scope (Bear in mind the ID process and one semester course requirements.)

HF Patient Knowledge Deficits

HF patients often have an inadequate understanding of their disease process, prescribed treatment regimens, and self-care strategies. This lack of knowledge directly impacts their ability to recognize early symptoms of heart failure exacerbation, consistently adhere to prescribed medication schedules, follow dietary restrictions, and safely engage in appropriate physical activity. All of these together form the critical components of effective heart failure self-management.

Barriers to Effective Patient Education

Clinical time constraints, combined with the complexity of information that must be conveyed to patients with a new diagnosis of heart failure or who are poorly controlled, create significant barriers to effective patient education. Traditional patient education methods in the clinical setting often fail to ensure patient comprehension and retention of critical self-care information.

Consequences of Poor Self-Management

HF patients who cannot effectively manage their condition outside of the hospital setting due to knowledge deficits are at significantly higher risk for preventable hospital readmissions. Research demonstrates that patients who possess self-care knowledge crucial to effective HF management experience reduced hospital readmission rates and report a higher level of health-related quality of life.

Healthcare System Impact

HF readmissions that are preventable place substantial burdens on healthcare providers and systems while dramatically increasing the lifetime cost of care. For rural healthcare facilities such as critical access hospitals, these readmissions strain already limited resources and represent both a quality-of-care concern and significant financial challenges.

Requirements: What specific items should the proposal/instructional solution address?

The Need for Innovation

Traditional patient education approaches have shown to be insufficient in addressing these challenges, particularly in rural settings where healthcare resources are limited, and patient populations already face significant barriers to accessing care and education. There is a critical need for innovative, evidence-based educational interventions that can deliver consistent, comprehensive HF education while accommodating varying levels of health literacy and reducing the burden on clinical staff and practitioners.

This project proposes the use of the Furhat Social Robot as a patient health educator to address these intertwined problems by providing standardized, interactive HF education using the teach-back method, an evidence-based strategy proven to improve patient comprehension and learning outcomes.

Project Scope and Implementation

Due to time constraints, HIPAA requirements, and organizational criteria from Labette Health, this project will focus on the development and preliminary testing of the Furhat Social Robot educational content and interaction skill. I will create the heart failure education module and skill, which will be piloted with volunteer participants who will simulate heart failure patient interactions rather than actual patients. This approach will allow for content refinement and technical troubleshooting while maintaining compliance with privacy regulations and organizational requirements.

Educational Session Specifications

The educational intervention should:

- Deliver a 30-minute interactive session covering essential heart failure self-management content
- Incorporate teach-back assessment prompts throughout to verify patient comprehension
- Include pre- and post-interaction knowledge assessments to measure learning outcomes
- Accommodate varying health literacy levels using clear, plain language that avoids complex medical terminology

Deliverables

- Fully developed Furhat robot interaction/skill/script for heart failure education
- Educational content module covering medication management, dietary guidelines, symptom monitoring, physical activity, and warning signs of heart failure exacerbation
- Assessment tool for measuring knowledge acquisition - Atlanta Heart Failure Knowledge Test – version 2 (AHFKTv2)

Required or requested technology, if known.

- **Furhat Social Robot (already have)**