

The Children's Home

Executive Summary

Community Partner

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Background

Established in 1893, The Children's Home of Pittsburgh is an independent, non-profit, licensed organization located in Friendship, Pittsburgh. Their mission is to promote the health and well-being of infants and children through services that establish and strengthen the family. The hospital is set up to treat children from infants to the age of 21 that need special medical attention. In addition to medical care, the hospital provides lessons and guidelines for parents on how to take care of their children after discharge. The Children's Home of Pittsburgh has several streams of specializations including Adoption and Permanency, a Pediatric Speciality Hospital, and counseling services for children and families who do not have the resources to access these services on their own. The Pediatric Speciality Hospital provides care to children who need special medical attention while providing lessons and guidelines for parents on how to take care of their children after discharge.

Project Description

Project Opportunity

Currently, the Pediatric Specialty Care unit at The Children's Home uses a manual verification system to ensure that the correct milk bottle is administered to the patient during the feeding process. This process involves a nurse finding another nurse to "sign off" on a bottle administration on a printed spreadsheet. During this process, the nurses have to manually cross-verify the patient ID with the ID associated with the milk bottle; they also have to manually confirm that the milk in the bottle is not expired. These processes can be easily prone to human error, especially given the speed with which the nurses have to complete tasks during their shifts. If any errors are made that lead to the wrong milk being administered to a patient; or expired milk being administered to a patient, severe health issues can arise that will only worsen the medical condition of the patient. An electronic scanning and verification system for tracking breastmilk inventory will reduce this risk and save the nurses a significant amount of time.

Project Vision

The goal of this project is to digitize the current breast-milk verification and inventory tracking system at The Children's Home of Pittsburgh. Our project is aimed at making the process of cross-referencing breastmilk bottles faster and error free, allowing nurses to provide the

highest quality of care while patients remain within the highest threshold of safety. We will create a Ruby on Rails, custom-built application that serves as a digital breast milk scanning and inventory tracking system. The key functionality of this system would include scanning a patient bottle and patient arm-band, verifying that the scanned bottle and patient are a match, tracking information on bottle location and the milk contained with it such as expiration date.

Project Outcomes

The main outcome of our project is the milk bottle application solution, which helps streamline the bottle check in and checkout processes, saves paperwork from the old manual process, and reduces human error by delegating calculations to the technology. Besides the major technology outcomes, there are also important people outcomes as we provide documentation in-person demo/walkthrough of our solutions in order to teach the end-users about the app and the values it brings. The major process outcome is the improvement of the entire breast milk pipeline process, as the majority of the process is now integrated with our solutions.

Project Deliverables

The deliverable consists of our project repository (in a compressed zip file). The application will be deployed on the client network.

Recommendations

The recommendations for our project include ensuring that the end user systems are up to date in order to support the ongoing maintenance of our application. Another suggestion would be to refer back to our documentation guides as there will be instructions for troubleshooting, design specification and over application specifications for the developers. Finally, the client may utilize CMU as a resource to look for further student developers due to their experience in Ruby on Rails, for example, by posing a internship listing on Handshake.

Student Consulting Team

Tim Wang served as project manager. He is a fourth--year student majoring in Information Systems with a minor in Computer Science, Game Design, and Physics. After graduation he will be working at Chainalysis in NYC as a full-stack software engineer.

Anagha Srikumar was the quality assurance analyst. She is a third year student majoring in Information Systems with a minor in Human Computer Interaction. She will be interning at Goldman Sachs this summer and is looking toward a career in software engineering.

Varshaa Sekar Jayanthi was the community partner relationship manager. She is a third year student majoring in Information Systems with a minor in Business Administration. She will be interning this summer at Designer Brands as a business intelligence analyst intern.