

How can we engage patients to manage their own physical activity and hygiene?

Cincinnati Children's Hospital Medical Center

ADL I-2-3 Adherence Device

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The Opportunity

The I-2-3 initiative was started within the BMT unit in an effort to cut down on infection rates. This initiative was an incentivized program that awarded stickers to patients who completed 3 daily tasks (bathing once, doing physical activity twice and doing oral care three times). Stickers were exchanged for "BMT Bucks" which could be used to buy toys from Child Life. This system was very effective and increased patient adherence from 25% to 75% among young children and teens.

The Challenge

While this system improved patient adherence, it was difficult and time consuming for nurses to manage. LWC was challenged to automate this system, create a device that would effortlessly collect and log points, while also engaging the parent or caregiver.

The Approach

The team investigated ways to automate the point collection process. They developed a touch free device that allowed maximum freedom for all users while taking into account the constraints of current hospital protocols. The team created initial sketches and 3D concepts, and tested them with families and key stakeholders. After numerous rough electronic models were user tested, a working 3D case was developed and further refined with input from clinical engineering.

The Impact

The current prototype is a device that tracks patient bathing, teeth brushing, and physical activity through an integrated system monitored by hospital staff.

Where is it now?

CCHMC Equipment & Standards Committee has approved the device and IRB approval has been obtained. Six devices are currently being tested at the Liberty Campus. Initial results are very promising. An additional 24 devices will be tested through a randomized trial at base campus beginning Q1 FY18. A second iteration of the project will begin at Live Well in summer 2019. Work Published: Hickey V, Flesch L, Lane A, Pai A, Huber J, Badia P, Davies S, Dandoy C. Token economy to improve adherence to activities of daily living, Pediatric Blood Cancer. 2018.



1 I-2-3 Device Design

2 Training Video

3 Automating the System