

How can remote patient monitoring be utilized to improve the patient experience throughout treatment?

Cincinnati Children's Hospital Medical Center Remote Patient Care

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The Opportunity

The LWC utilized the emerging trend of fitness and nutrition tracking for medically-driven purposes to explore uses of fitness trackers for in-home patient monitoring. LWC aimed to map out CCHMC's current working model provide focus areas that could be further explored.

Challenge

Children and their families often leave the hospital with questions and concerns that arise once at home. This is especially prevalent if the child develops unexplained symptoms at home. To allow doctors to optimize time with patients, remote patient monitoring can be an effective way to check vitals and track the child's nutrition. Remote monitoring could allow the medical team to check on the patient without an inconvenient visit to the hospital.

Approach

Through meetings with CCHMC, the LWC team was able to develop an understanding of the hospital's current research process and what steps are being taken to test current fitness and nutritional device trackers. LWC explored CCHMC's current connections and research plans and mapped out opportunities that CCHMC could further explore.

The Impact

The LWC team also identified other monitoring opportunities for CCHMC. By mapping out benchmarking investigations, the team was able to organize a system that best met hospital's needs.

Where is it now?

A QI project for Remote Patient Monitoring (RPM) is underway and actively enrolling participants. Early goals are focused on process measures, offering RPM to everyone who would be considered eligible). Future goals will be clinical outcome measures including early identification and intervention of treatment associated weight loss.



Step Tracking	Heart Rate Monitor	Sleep Tracker	Connectivity	Additional Features	Applications*	HIPAA
2		✓	Bluetooth	Progress Display	FIBIT app	
✓		✓	Bluetooth	Watch + Display Caller ID	FIBIT app	
✓		✓	Bluetooth	PurePulse Heart Rate Caller ID + Watch	FIBIT app	
			WIFI	Weight, BMI, lean mass & body fat percentage	FIBIT app	
	✓		WIFI, Bluetooth	Weight, BMI & fat mass Air quality	Health Mate app Withings Account	
		✓	Bluetooth	Obesity - Check blood sugar level	Health Mate app Withings Account	
			Bluetooth	0-8 years old Automatically updates in-app growth chart flexion needed to avoid mismeasurement when baby moves	Withings Daily Companion App Withings Account	
	✓		Bluetooth	Precise self-measurement of your blood pressure with your smartphone Clear and instant color-coded feedback keeps your blood pressure and heart rate data history on hand Simple to use and easy to share with your doctor	Health Mate app Withings Account	
✓	✓	✓	Bluetooth	Adds physical dimension to communication	HealthKit 3rd party applications	
✓	✓	✓	WIFI, Bluetooth	Communicate with doctors and medical staff Share and receive patient information	Would sync to Oasis Portal / "Clean App"	
	*Patient pending heart rate measurement technology	*Relies on 3rd party applications			*Free unless otherwise noted	*To protect HIPAA + meals

3 CCHMC Patient Remote Monitoring

JUNE 2015
FOCUS ON VITALS & WEIGHT

CURRENT	TEST	PLAN
What is in use	What is under test	What is planned next
eVisit, eConsult, Telemedicine Clinic and Case Conferencing Department: Radiology, Cardiology, Psychiatry, Tumor, Rheumatology, Neurology, Genetics, Biomechanics, Oncology, Ophthalmology, Nephrology, Pediatrics, Pediatrics and OB/GYN Objective: To provide vital to obtain specific and information to identify	In-Home Monitoring Department: Pediatrics Geriatrics, developing for all department usage Objective: Determine how consistently we can collect patient in-home data outside of CCHMC Device: Withings Pulse OX Activity Sleep Heart Rate + SpO2 (model: WUP30) Smart Body Analysis scale Device under consideration: http://www.heart.com	Real-Time Location System Department: Hospitalwide Objective: Improve operational flow of the organization provide better room utilization and improve patient experience by locating all patients and find events and test the hospital Device: Control systems, external location tags for staff/patients (Udacity, mapquest account) currently used for some equipment

“There’s a huge need for validation of remote monitoring devices in pediatrics.”

- Dr. Perentesis

- 1 Device + Service Benchmarking**
 The LWC team used benchmarking to look at existing fitness and nutritional tracking systems. The team then mapped out companies and devices that supported HIPAA compliance along with other device features.
- 2 Organizational Mapping for CCHMC**
 The LWC team established areas that CCHMC could explore further by creating a system comparing various devices and their capabilities.
- 3 Possibilities for Exploration**
 After benchmarking and comparing existing systems, the team created a grid to summarize findings.