Personalized Asthma Therapy for Kids

Qualcomm Incorporated

Qualcomm Incorporated, through its Qualcomm Wireless Reach™ initiative, Qualcomm Life, Inc [1]., a subsidiary of Qualcomm Incorporated, and Rady Children's Hospital-San Diego, the primary pediatric health provider serving San Diego, Imperial and southern Riverside counties, today announced their collaboration on a 3G-enabled kit for monitoring the activities of asthmatic children. The project features Asthmapolis and Zephyr technologies in order to help reduce costs and improve outcomes and seeks to determine whether asthma-related therapy can be personalized based on a patient's physiology, reducing serious asthmatic attacks, emergency room visits, hospitalization and associated costs.

Asthma is one of the most common chronic disorders in childhood, affecting an estimated 7.1 million children under 18 years of age. It is the third leading cause of hospitalization among children under 15. The annual direct health care cost of asthma is approximately $50.1 billion. Asthma is also one of the leading causes of school absenteeism.

Asthmatic children currently use inhaled medications when they have trouble breathing or at pre-established intervals, regardless of their physiological condition. The Wireless Reach-funded research project uses 3G-enabled mobile monitoring devices and web-based applications linked to a patient's meter dose inhaler (MDI) medications to automatically record via a 3G network the date, time and location of asthmatic inhaler use. The goal of the project is to determine if these indicators can be correlated to the patient's heart rate, respiratory rate and activity, better individualizing therapy. The combined system also uses GPS tracking to provide insight to potential trigger areas and patterns where asthma symptoms occur.

Fifty patients between the ages of seven and 17 will be recruited into the project from the Pulmonary and Asthma/Allergy clinics at Rady Children's. Each participating patient and their family will receive a remote monitoring kit and training on how to use it. The kit will include two Asthmapolis sensors that snap on inhaled medications to track use; one Zephyr BioPatch device that will track heart rate, respiratory rate and activity; and one Qualcomm Life 2net™ Hub. The devices will utilize Bluetooth technology to wirelessly send patient information to the 2net Hub, which will then leverage the 3G network to send the data to the patient's care provider at Rady Children's.

Patients and their families will have online access to the information through the Asthmapolis mobile apps and patient dashboard. They will be able to see trends in patient inhaler use over time. They will also receive personalized feedback and education based on the patient's physician-provided action plan via email reports, messaging or online viewing. Clinicians will be able to access the ZephyrLIFE Home portal to view wireless vital sign data which is contextualized with patient activity, movement and posture.

The project collaborators hope that as patients learn more about asthma symptoms, their rescue medication use and other trends in individual biometric data, they will be able to adjust their medications based on their unique action plan.

Qualcomm understands that many advances in mobile technology have already changed access to health care and is working to enable even greater transformation in mobile health. By working with organizations like Rady Children's, Zephyr, and Asthmapolis, Qualcomm aims to leverage its capabilities in order to expand the impact of mobile technology.

Rady Children's Hospital-San Diego is dedicated exclusively to pediatric health care. In collaboration with the University of California, San Diego School of Medicine, it is the region's teaching hospital for the next generation of pediatric physicians. It is also a major pediatric clinical research center, with more than 190 clinical trials and 260 other research projects underway.

Asthmapolis aims to improve the management of chronic respiratory disease for people and healthcare professionals. Their FDA-cleared mobile solution uses a combination of smartphone applications, advanced analytics, services and snap-on inhaler sensors that track when patients use their inhaled medications while revealing triggers, trends and personalized feedback.

Zephyr Technology's ZephyrLIFE Home wireless remote monitoring system continuously monitors clinical patients throughout the care continuum. Clinicians have remote access to their patients' contextualized vital signs any time and from anywhere. Zephyr Technology is a leader in remote physiological monitoring. For the last decade, soldiers in extreme environments, first responders in rescue operations and athletes in elite competitions have relied on Zephyr's solutions.

To find out more about the work Qualcomm and its project collaborators are doing, visit www.qualcomm.com/wirelessreach [2].

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