

# Modern Healthcare

## CARE DELIVERY

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## Digital check-ins, connected inhalers help control asthma

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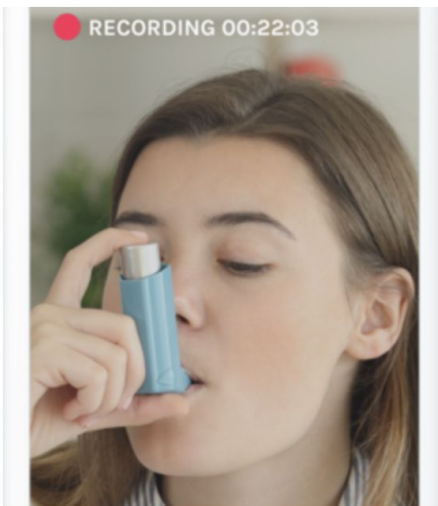
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A core challenge for asthma management is teaching patients how to properly use an inhaler. Asthma patients, many of them children, could avoid emergency department visits or using a rescue inhaler, if only they followed proper inhaler technique.



Daily check-ins help asthma patients track medication adherence and improve inhaler technique. (EMOCHA HEALTH)

To take on that problem, LifeBridge Health in early 2020 enrolled 24 children at a Baltimore primary-care clinic in a two-month pilot program that uses asynchronous telehealth.

It's an example of the growing arsenal of digital health tools physicians are using to tackle medication adherence—a particular challenge for asthma patients.

Pediatric patients in the pilot—all of whom had recently suffered an asthma attack—and their parents were asked to submit daily videos of the child using their inhaler via an app from medication adherence company Eموcha Health. A nurse from Eموcha later reviews the video and provides feedback to improve the child's inhaler technique.

The app also sends reminders to patients who haven't completed a daily check-in.

“It was good to see families and kids respond to the feedback,” said Dr. Scott Krugman, a study investigator and vice chair of the pediatrics department at LifeBridge's Herman & Walter Samuelson Children's Hospital at Sinai.

“That’s something we can’t often get in the clinic setting. Even if you show them how to do it, you don’t know how they’re doing it at home.”

The most common issue, according to Krugman, was patients not holding their breath long enough while using the inhaler.

Previous studies have found directly observed therapy, such as asthmatic students taking medication while observed by school nurses, has helped to improve asthma symptoms. Emocha, which was founded in 2014 to address medication adherence for tuberculosis, aims to make directly observed therapy easier to scale with asynchronous video.

Patients in the pilot at the LifeBridge clinic experienced fewer asthma-related ED visits and fewer oral steroid prescriptions, according to preliminary data.

LifeBridge is planning to scale the program but is working out payment logistics—such as discussing with payers whether remote-patient monitoring codes could be billed for the program or whether this could fit into value-based contracts. There’s the potential for cost savings by cutting down ED visits, hospitalizations and rescue inhaler refills.

Asthma management has been a popular target for digital health programs. The market for “smart inhalers,” or digital inhalers that track medication data by connecting to mobile apps, by some estimates is projected to reach up to \$445.4 million globally by 2027.

Late last year, Apple, Anthem and the University of California at Irvine kicked off a research project to study whether tracking data with the Apple Watch could help members control their asthma, too.

It can be hard for patients to remember to take a daily medication, particularly for pediatric patients using controller inhalers, which involve multiple steps. Some asthma patients stop using their inhalers when they feel better, which can ultimately worsen their symptoms.

“If somebody’s feeling good, they don’t really want to take anything,” said Dr. Mark Corbett, an allergist and president-elect of the American College of Allergy, Asthma and Immunology.

Corbett has used Digihaler devices with built-in sensors that track patients’ use of inhalers from Teva Respiratory, an affiliate of Teva Pharmaceuticals, with some of his patients. He hasn’t made it a standard of care for all of his asthma patients, but said it helps patients better understand their condition.

Dignity Health, which merged with Catholic Health Initiatives to create CommonSpirit Health in 2019, started integrating a digital health program from company Propeller Health in 2014. San Francisco-based Dignity has since implemented the program across six of its markets. It involves outfitting a patient’s inhaler with a sensor from Propeller. An app reminds patients to take medications and tracks trends in medication use alongside allergens or other possible asthma triggers.

The sensors also funnel data to a dashboard that Dignity caregivers review, so they can reach out to patients who are struggling with compliance.

Using data and visuals that illustrate how not taking medication correlates with worsening symptoms has been helpful, said Dr. Rajan Merchant, an allergy and asthma specialist at Dignity's Woodland (Calif.) Clinic who leads the system's program with Propeller. "We can show them trends in ... how their symptoms may change," he said.