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RESEARCH SUMMARY

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Does an Advanced Electronic Tracker Help Families Manage Children’s Asthma Symptoms Better Than a Standard Electronic Tracker?

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What was the research about?
Asthma is the most common chronic illness among children in the United States. Asthma attacks can cause children to miss school and their parents to miss work. Children and their families being aware of asthma symptoms and changing treatments when asthma gets worse may help prevent severe attacks.

This study had two parts. In the first part, the research team compared two versions of an electronic asthma tracker. The tracker is a web-based program that helps families check children's asthma symptoms over time.

- For the standard tracker, children or their parents entered information about asthma symptoms into a website through a computer or smart phone. This version tracked changes in asthma control over time and sent suggestions for care. If symptoms got worse, the tracker sent alerts to parents and the children's clinics.
- The advanced tracker did everything the standard tracker did. To encourage use, this version also sent messages to reward participation and showed how often other families used it.

The team looked at quality of life, asthma control scores, number of school and work days missed, hospital stays and emergency room (ER) visits, and parent satisfaction with the child's asthma care.

In the second part of the study, the team compared children whose families used an asthma tracker with children whose families didn't use a tracker. The team looked at use of medicines prescribed for asthma attacks and the number of hospital or ER visits.

What were the results?
The standard and advanced trackers worked about the same. Throughout the study, children whose families used either tracker had

- Better quality of life
- Better asthma control
- Fewer missed school days
- Fewer ER or hospital visits

Children whose families used either tracker had fewer ER and hospital visits and used less medicine for asthma attacks than children whose families didn't use one.

Who was in the study?
This study included 325 children with asthma who used a tracker and 603 children with asthma who didn't use a tracker. All children received care at health clinics in Utah. Of the children whose families used a tracker, 76 percent were white, 8 percent were other
races, and 13 percent were Hispanic. Children’s average age was eight.

What did the research team do?
The research team assigned nine clinics by chance to use either the standard or advanced tracker. Families from these clinics used a tracker every week for one year. The team interviewed the families at the start of the study and again 3, 6, and 12 months later. Also, the team collected information from the trackers.

Then, as a comparison, the team selected children who did not use a tracker from 42 clinics. These children were the same genders and ages, lived in the same areas, went to the clinics during the same seasons, and had equally serious asthma as the children using the trackers.

The team also looked at medical records for all children in the study to see what medicines children used and if they visited the hospital or ER.

Parents of children with asthma and other people from the community helped design the study.

What were the limits of the study?
More families used the standard tracker (82 percent) than the advanced tracker (18 percent) because different clinics enrolled different numbers of families in the study. As a result, it was hard to compare the two versions of the tracker. For the second part of the study, the team didn’t assign children by chance to not use a tracker. Children and families who didn’t use the trackers may be different from children and families who used the trackers.

Future research could look at the effect of the trackers for people who live in other areas.

How can people use the results?
Children with asthma and their parents can consider using an electronic tracker to record asthma symptoms and improve how they manage the children’s asthma to help prevent asthma attacks.

To learn more about this project, visit www.pcori.org/Nkoy034.