

Helping Caregivers and Their Children with Early Appendicitis Make Treatment Decisions with an App

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What was the research about?

Appendicitis occurs when the appendix, a part of the intestine, becomes infected. Appendicitis can cause stomach pain and vomiting. If the infection isn't treated, it can lead to serious complications.

Caregivers—parents or guardians—usually find out children have appendicitis when they bring them to the emergency room, or ER, for these symptoms.

Surgery and antibiotics are two options to treat appendicitis that is in early stages. These options have different benefits and harms. Surgery is effective, but children may miss one or two weeks of school.

Antibiotics often work and avoid the discomforts of surgery. But some patients still need surgery later. Choosing a treatment can be stressful because caregivers need to decide soon after the doctor gives the diagnosis.

In this study, the research team created an app on a tablet computer to help caregivers make informed, confident decisions. The app explained treatment benefits and harms. The app also showed videos of caregivers making treatment decisions.

What were the results?

Caregivers and children who used the app didn't differ from caregivers and children who didn't use the app in

- How often caregivers chose each treatment
- Caregiver confidence in the treatment decision

- Caregiver satisfaction with the child's medical care
- Number of days caregivers took off work and children missed school
- Number of return visits to the hospital

Who was in the study?

The study included 200 pairs of children and caregivers. The children were 7 to 17 years old and were diagnosed with early appendicitis. The children received care at an ER in Ohio. Of these children, 87 percent were white, 7 percent were African American, 4 percent were multi-race, and 4 percent were another race or their race was unknown. Also, 5 percent were Hispanic. The average age was 12 years, and 60 percent were boys.

What did the research team do?

After diagnosis, the research team assigned the pairs by chance to one of two groups. In one group, a doctor talked with the pairs about treatment options. In the other group, the pairs used the app to help them choose a treatment. Then they had the same type of conversation with a doctor as pairs in the first group did.

Right after making their treatment decision, caregivers took a survey about their confidence in that decision. After children left the hospital, their caregivers took a survey about satisfaction with care. Thirty days after making the treatment decision, the caregivers took these surveys again. A year later, the caregivers

reported how many work and school days they or their children missed because of treatments. The team also tracked how often children went back to the hospital in that year.

Patients, caregivers, and healthcare providers helped design the app and plan the study.

What were the limits of the study?

It's possible that the doctors talked about information from the app with patients who had only a conversation about treatment. Also, the conversation may have given more information than ERs usually give to caregivers. After the conversation, caregivers may have had all the information they needed to feel

confident in their decisions. These factors may have led to the lack of differences in results between groups.

In the future, researchers can test the app with patients in more sites with patients in each group receiving care from different doctors.

How can people use the results?

Both apps and consultations may be effective ways to help caregivers make decisions with doctors in the ER about how to treat appendicitis.

To learn more about this project, visit www.pcori.org/Deans162.