

# Web-based technology improves pediatric ADHD care and patient outcomes

July 26 2016

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As cases of ADHD continue to rise among U.S. children, pediatricians at busy community practices are getting a much-needed assist from a web-based technology to improve the quality of ADHD care and patient outcomes.

According to a multi-institutional study published online July 26 in *Pediatrics*, a new web-based software program is helping reduce ADHD behavioral symptoms in children receiving care at community pediatric practices by coordinating care and ensuring patients get the most effective ADHD medications.

This is important for children with ADHD who rely on extremely busy community based pediatric practices where ADHD care is often poor - especially in the areas of medication management and monitoring, according to Jeffery Epstein, PhD, the study's principal investigator and director of the Center for ADHD at Cincinnati Children's Hospital Medical Center.

"Our data show the software not only helped improve the quality of medication care received by children treated at community based pediatric practices, but it also improved treatment outcomes for these children," Epstein said. "As a result of the improved quality of ADHD care, children treated by pediatricians using this new technology had significantly less ADHD symptoms than children treated by pediatricians who were not given access to this web-based technology."

The ADHD care quality improvement (QI) software was developed by Epstein and research colleagues at Cincinnati Children's. The American Academy of Pediatrics (AAP) has selected this software for use in pediatric practices that are participating in a five-state QI learning collaborative to improve care for children with ADHD.

Available through a web-based portal, the software helps community practices collect, score and interpret reports from parents and teachers regarding children's ADHD symptoms - allowing pediatricians to better gauge whether medications are working with their patients.

Providers at community practices can customize the schedule of collection of these ratings for each patient. When ratings are completed, automated algorithms score and interpret data. Physicians then receive text and graphs charting patient response to medication and other related information, allowing them to determine if ADHD symptoms are improving in response to the prescribed medication and dosage.

The current study involved a randomized clinical trial coordinated through Cincinnati Children's and Nationwide Children's Hospital in Columbus, Ohio, where study co-author Kelly Kelleher, MD, serves as director of the Center for Innovation in Pediatric Practice.

The trial was conducted at 50 community based pediatric practices involving 199 providers. The providers were randomized to either provide ADHD care using the technology assisted QI intervention or without the intervention.

A total of 373 children with ADHD included in study were prescribed ADHD medications for their condition (165 children at practices using the software intervention and 208 at control practices not using the software). A standard rating scale (the Vanderbilt ADHD Parent Rating Scale) was used before and following treatment to rate ADHD

symptoms.

Medicated children cared for at control practices (which did not use the software) experienced an average 10.19-point reduction on the parent-rated scale of symptoms. Children at [pediatric practices](#) using the technology based intervention experienced an average symptom reduction of 13.19 points.

Compared to children at practices not using the technology, [children](#) cared for at practices with the technology had significantly more treatment contacts with clinical staff and a greater number of parent and teacher ratings to monitor the effectiveness of medications. Researchers said that treatment effectiveness and outcomes were more quickly assessed at practices using the software.

Researchers report that the study's community based nature led to some limitations involving the consistency of data collection - making it difficult to generalize the data to all community practices and providers, according to the authors. The study also focused only on the primary outcome of ADHD symptoms. It did not evaluate functional impairments (such as school performance), which are often why families seek treatment for ADHD.

Epstein said that future goals for this intervention include extending the software's use to facilitate behavioral treatment. Researchers also want to explore strategies for expanding use of the technology to include all patients with ADHD (including integrating its use with electronic health records, pay for performance initiatives, etc.) and patients with other pediatric mental disorders.

Provided by Cincinnati Children's Hospital Medical Center

Citation: Web-based technology improves pediatric ADHD care and patient outcomes (2016, July 26) retrieved 3 May 2024 from <https://medicalxpress.com/news/2016-07-web-based-technology-pediatric-adhd-patient.html>

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