CHILDREN'S HOSPITAL ASSOCIATION

HOW CHILDREN'S HOSPITALS USE AI

Children's hospitals are implementing artificial intelligence (AI) to improve health outcomes and patient experiences.

While useful, AI applications have unique implications for pediatrics that should be considered when regulating AI in health care. Keeping these considerations at the forefront of policymaking will ensure AI tools continue to benefit children's health.

OPPORTUNITIES FOR PEDIATRIC CARE

Early Diagnosis and Predictive Analytics: AI quickly analyzes large datasets from electronic health records to identify patterns and predict early onset of disease. These tools also screen and detect disease early in children, which helps prevent disease progression.

Imaging and Diagnostics: AI tools can improve diagnostic accuracy in pediatric imaging, such as reading X-rays and MRIs, reducing the need for repeated imagery and minimizing exposure to radiation.

Reducing Provider and Administrative Burden: AI-driven ambient listening tools can help providers spend more time on patient care and reduce administrative work, supporting a stronger, more sustainable pediatric workforce. AI tools can also automate medical coding and billing, scheduling, claims processing, and other tasks.

Virtual Health Assistants: AI-powered virtual health assistants and related applications support patient care by providing personalized health information, answering families' medical questions, and offering guidance to manage chronic conditions.

Medical Education and Training: AI-powered simulators and virtual reality platforms provide realistic training scenarios, enhancing providers' clinical skills in a safe environment.

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UNIQUE CONSIDERATIONS FOR CHILDREN

Lack of Pediatric Data: AI models must be trained with existing large data sets to create accurate outputs. Pediatric data sets are often limited for certain conditions, but data experts at children's hospitals are working to make data sets available for computerized learning.

Complexity in Pediatric Data: Pediatric medical data has more inputs than adult medical data. For example, pediatric medical data often incorporates information from multiple sources, including clinicians, parents/caregivers, subspecialists, teachers, and more. Merging these data sources makes it more difficult to get accurate predictions. Additionally, most health AI tools are tailored to adult care, not taking into account the considerations that make children's health care unique.

Consent to Use Patient Data: Consent to use data is usually initially obtained from a parent or guardian. When the child reaches the age of consent, the child must re-approve use of their health data. This requires strict monitoring of consent status and can limit the use of this data.

INNOVATIVE AI AT CHILDREN'S HOSPITALS

Epilepsy Surgery

Cincinnati Children's uses AI to reduce referral times for epilepsy surgery. The hospital has trained AI to capture electronic health record data and alert physicians when a patient is eligible to be reviewed by the surgical committee.

Cincinnati Children's®

Innovating Pediatric Behavioral Health

Children's Colorado is conducting research using AI, machine learning, and biosensors to detect early physical signs of neurobehavioral disorders such as changes in motion, heart rate, and facial expressions.

Children's Hospital Colorado®

Pediatric Imaging

Stanford Medicine Children's Health uses AI-powered MRI technology to reduce scan times from hours to minutes while improving image quality. The technology can reduce the need for anesthesia and enable clinicians to detect abnormalities not be visible with traditional imaging.

Stanford MEDICINE
Children's Health

Learn more about using AI tools in pediatric care at ChildrensHospitals.org/artificialintelligence.

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