

The Health-e-Access Telemedicine Program

Location: Rochester, New York

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Category: **Best Practice**

BACKGROUND

Common, acute illnesses in pre-school and school-age children remain a major morbidity and economic burden across the socioeconomic spectrum, accounting, for example, for 40% of the work absences among parents who use childcare. Estimates for the proportion of emergency department visits by children for non-urgent problems have ranged as high as 70%. Using commercially-available information technology that enables clinicians to evaluate and treat ill children at a distant childcare or school site, Health-e-Access (HeA) is a novel and efficient approach to a problem of national significance. The HeA telemedicine system links children in child care programs, Head Start, elementary schools, and programs for developmentally disabled children to their own primary healthcare provider. Current applications of HeA include the diagnosis and management of acute medical problems, behavioral health consultations, dental screening for early childhood caries, and ongoing management of chronic conditions such as asthma and attention deficit disorder. Over 60 childcare or school sites and 10 primary care practices are currently involved in this system of care.

The Health-e-Access Telemedicine Model is guided by the concept of the medical home. The approach to sustainability is based on a model of organizational architecture that recognizes three key drivers: incentives, decision rights, and performance evaluation. Guidelines for care within the Health-e-Access Telemedicine Model detail expectations for certified telehealth assistants at child sites and for telemedicine clinicians in primary care practices.

TITLE V/MCH BLOCK GRANT MEASURES ADDRESSED

#11: Percent of children with and without special health care needs having a medical home.

#15: Percent of children 0 through 17 years who are adequately insured.

PROGRAM OBJECTIVES

The overall objectives of the Health-e-Access program are to:

- Reduce the health, educational and economic impact of childhood illness on children and families
- Reduce racial, ethnic cultural, social, economic and geographic disparities to healthcare access
- Reduce the economic impact of childhood illness on the healthcare system and the community
- Sustain the Health-e-Access Network

TARGET POPULATION SERVED

Health-e-Access is targeted to Rochester's underserved inner-city population and to children with special healthcare needs throughout the Rochester region. Based on the 2000 U.S. Census, about 29,000 of Rochester's 62,000 children under 18 years dwelled in the inner city. The proportions of African American and Hispanic/Latino inner children were 60% and 20%, respectively. Median household income was \$20,575 and 50% of families with children under 5 years fell below the federal poverty level.

PROGRAM ACTIVITIES

Health-e- Access (HeA) is a telemedicine program designed to enable diagnosis and treatment decisions for acute problems that commonly arise in child care settings and schools so children can obtain off site healthcare from physicians through the use of computer technology. This healthcare delivery process occurs in a systematic manner. First, a health problem is identified and brought to the attention of an individual who is authorized to request a telemedicine visit (a phone nurse, primary care physician, etc). The telemedicine coordinator is then contacted and the eligibility of the patient is confirmed; all participants must pre-register for this program. A telemedicine assistant creates an electronic medical record (EMR) for the patient by collecting demographic information and a medical history

from the family. In addition, the assistant captures images (e.g., tympanic membranes, rash), video clips and lung sound files from the patient. The clinician then (1) assesses all available information, (2) determines whether the visit can be completed entirely via the telemed device, or whether an in-person exam is required, and (3) makes diagnostic and management decisions. The clinician communicates with the family and enables treatment as appropriate. They also complete the telemed EMR with clinical documentation and a brief performance assessment (part of the EMR) evaluating the performance of both the telemed system and the telemedicine assistant. If, at any time during or after the telemed visit the patient needs/wants to be seen in person, this is arranged.

Training programs, manuals and online course materials for telehealth assistants and clinicians have been created specifically for HeA. Through a process of continuous quality improvement, they are frequently updated as the basic HeA model is adapted for different settings and circumstances (e.g., for child care, schools, after-hours neighborhood sites, visits with and visits without the parent physically present), as the workflow and information flow processes are refined. Program staff and queries built into EMR software collect data on parent satisfaction, performance and satisfaction of telehealth assistants and performance and satisfaction of telehealth providers (physicians, nurse practitioners). These activities generate feedback to improve performance and align expectations.

PROGRAM OUTCOMES/EVALUATION DATA

Over 10,000 telemedicine visits were conducted through March 2010. The telemedicine program includes over 70 primary care clinicians who have conducted visits. Approximately 97% of telemedicine visits are completed without the need for travel or any additional in-person visits. Evaluation demonstrated that 95% of parents would choose a child care program with telemedicine over one without it, and parents estimate that a telemedicine visit saves them 4.5 hours on average compared to an in-person visit.

The evaluation of this program also addressed the impact of telemedicine on: absence of children due to illness, parents' absence from work, utilization of traditional health services (e.g., emergency department) and overall cost of care. The results of the evaluation include the following:

- There was a 63% reduction in absence due to illness among children attending inner city childcare, which was attributable to telemedicine.
- Children with access via telemedicine from childcare or school make 22% fewer Emergency Department (ED) visits than matched counterparts.
- Given that reimbursement rates for emergency department visits are much greater than for telemedicine visits (reimbursed at the same rate as

office visits), the Health-e-Access telemedicine model results in substantial cost savings.

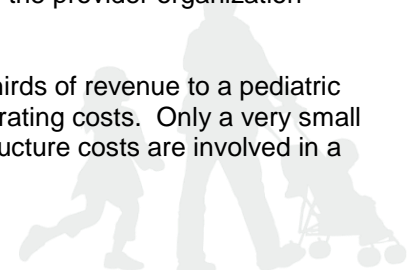
Reduced ED visits, reduced absence and (reduced work loss for parents) can be attributed to capacity for managing illness "on the spot" and receiving "on the spot" physician certification so that the child could stay in school/child care without being a contagion hazard for other children and teachers. Reduced ED visits and reduced absence can be partly attributed to earlier treatment, preventing development of more serious illness. For example, there have been many instances where a flare up of a chronic condition (e.g., asthma, eczema) has been quickly evaluated and treated on site, avoiding more serious flare ups, as well as office and ED visits.

PROGRAM COST

Approximately \$12,000,000 has gone into the development and evaluation of Health-e-Access. Funding was received from federal agencies, NY State, national and local foundations and from individual donors. The program was initiated in May 2001. Health-e-Access is an ongoing program and is currently sustained from reimbursement for telemedicine visits by all local payers, including Medicaid Managed Care.

Economies of scale are critical to sustainability of the Health-e-Access infrastructure. The upfront cost for the child site telemedicine units is about \$14,000. Partly because of their portability, these units can be in use almost continuously throughout the day in many urban schools. Ongoing technology-related costs (hosting, support, upgrades) are a few thousand dollars annually. Because Health-e-Access uses a web-based system, start-up would generally involve no incremental cost for connectivity. Similarly, due to use of personal laptop or desktop computers, there generally would be no start-up cost (other than a web-cam) for technology at the provider end. Because telemedicine assistants capture most of the information needed for clinical decision making, and software facilitates retrieval and assimilation of clinical information and documentation, providers readily manage about six patients per hour with common acute problems. The telemedicine coordinator contributes to efficient operations by managing network resources, directing roaming telehealth assistants to locations where they are needed and scheduling telemedicine visits for after-hours sites that are most convenient for the family. Telemedicine assistants are a substantially less expensive resource than office nurses. In most childcare settings, telemed visits are done by existing staff that we train, so there is no incremental cost to HeA or the provider organization (primary care practice).

Additionally, at least two-thirds of revenue to a pediatric office goes of practice operating costs. Only a very small proportion of office infrastructure costs are involved in a



telemedicine visit. Office exam room space is not required for visits completed via telemedicine. From a health systems, public policy and societal perspective, the tradeoffs between ED and teled visits reimbursement (i.e., \$600 for an ED visit vs. \$60 for a teled visit) and indirect costs (time lost from work and school absence with vs. without HeA teled) yield a cost-effective model of care.

ASSETS & CHALLENGES

Assets

- Collaborative child sites (especially individuals trained as telehealth assistants), collaborative clinicians
- School district leadership that recognizes the interrelationships among health, healthcare and academic performance
- Reimbursement for telemedicine visits by all local health insurance organizations, including Medicaid Managed Care

Challenges

- Resistance to change, misperception that technology is attempting to replace traditional school nursing
- Fear that sick children will be kept in school or childcare causing an additional burden on the health office staff and/or pose a contagion risk to other children
- Lack of reimbursement for telemedicine from traditional fee-for-service Medicaid
- Distributing added value among stakeholders in a manner that promotes scale-up and spread

LESSONS LEARNED

In providing infrastructure that enables more convenient healthcare, the goals of the Health-e-Access telemedicine program appear to be aligned well with those of families, child sites, clinicians, health insurance organizations, employers and the community in general.

FUTURE STEPS

Health-e-Access (HeA) is an ongoing program that continues to expand in Rochester and to be replicated elsewhere in the U.S. In Rochester, for example, access to care through this telemedicine network expanded to all schools in the Rochester City School District in September 2010. Access to health care via HeA from child care operated by the family court system was initiated in April 2011.

Health-e- Access plans to:

- Develop after-hours neighborhood telemedicine access points to supplement child care and school access for care of acute illness
- Expand service to any child care or school site in the city of Rochester using mobile telemedicine units operated by roaming telehealth assistants enabling connection with the child's own primary care practice through wireless broadband

- Expand infrastructure enabling chronic illness management (e.g., asthma, ADHD, obesity) in child care and school settings
- Expand services for children with special health care needs in child development centers to include ongoing management of chronic illness as well as care of acute illness episodes.
- Refine provider-end software for use with handheld computing devices and tablet computers.

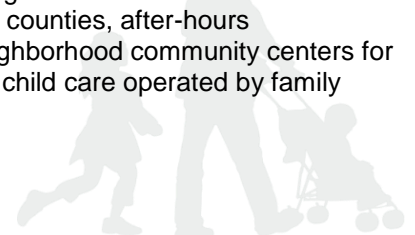
COLLABORATIONS

The primary partners that were involved in the collaboration were health insurance organizations, community and medical center based primary care medical practices, child sites in both urban and suburban settings (childcare programs, elementary schools, day programs for developmentally disabled) and telemedicine systems from TeleAtrics, Inc.

PEER REVIEW & PROGRAM REPLICATION

- McConnochie KM, Wood NE, Kitzman HJ, Herendeen NE, Roy J, Roghmann KJ. Telemedicine reduces absences due to illness in urban childcare: Evaluation of an innovation. *Pediatrics* 2005; 115: 1273-1282.
- McConnochie KM, Conners GP, Brayer AF, Goepp J, Herendeen NE, Wood NE, Thomas A, Ahn DS, Roghmann KJ. Effectiveness of Telemedicine in Replacing In-Person Evaluation for Acute Childhood Illness in Office Settings. *Telemedicine and e-Health*. 2006; 12: 308-316
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- McConnochie KM, Wood N, Herendeen N, ten Hoopen CB, Denk L, Neuderfer J. Integrating telemedicine in urban pediatric primary care: Provider perspectives and performance. *Telemedicine and e-Health* 2010;16:280-288
- McConnochie KM, Wood N, Herendeen N, ten Hoopen CB, Roghmann KJ. Telemedicine in urban and suburban childcare and elementary schools lightens family burdens. *Telemedicine and e-Health* 2010;16:533-542

The Health-e-Access model has been replicated in other settings and populations in Rochester, including development centers for children with severe developmental disabilities, dental screening for children in the Rochester area and surrounding rural counties, after-hours telemedicine access in neighborhood community centers for children with acute illness, child care operated by family



court, senior living communities for older adults, and Rochester City Schools.

The development center population/setting has also been replicated in the Akron, OH area. Replication in other communities is now widespread. The program has provided consultation to 30 different healthcare provider organizations or childcare organizations across the U.S. One example of a replication that followed substantial in-person consultation is My Health-e-Schools (<http://www.myhealthschools.org/>).

RESOURCES PROVIDED

More information about this program is available at www.teleiatrics.com.

VIDEO PRODUCTIONS

Discovery Channel (November 2011)

<http://dsc.discovery.com/videos/patient-ed-health-it-part-4.html>

Agency for Healthcare Research and Quality (September 2010)

2nd video on page

<http://www.innovations.ahrq.gov/videos.aspx>

CBS National News (March 2006)

<http://www.teleiatrics.com/media/>

ABC National Evening News (March 2006)

<http://www.teleiatrics.com/media/>

OTHER SUMMARIES OF EVIDENCE BASE

AHRQ Innovations Exchange

[http://www.innovations.ahrq.gov/content.aspx?id=2084&tab=](http://www.innovations.ahrq.gov/content.aspx?id=2084&tab=1)

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Key words: Service Integration, Access to Healthcare, Family Health, CSHCN, Disparities, Telemedicine

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