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# MEETING THE HEALTH CARE NEEDS OF CALIFORNIA CHILDREN IN SCHOOLS AND CHILD CARE: TELEMEDICINE CAN HELP

*An Issue Brief by The Children's Partnership*

Telemedicine, the use of technology to provide health care at a distance, is showing considerable promise in getting needed health care to children who are low-income and/or living in medically underserved areas. This issue brief describes efforts to use telemedicine in school and child care settings to help meet California's goals related to school-based health centers, health reform and the use of technology to improve the efficiency and effectiveness of our health care system.

## BACKGROUND

Schools and child care centers play a vital role in ensuring the health of the children they serve. Schools, through school nurses and school-based health centers, help increase access to health care for children by:

- Screening for health problems before they become emergencies;
- Helping children manage chronic illnesses;
- Connecting children and families to needed health and social services; and
- Providing urgent care.

Likewise, child care programs, such as Head Start,\* often connect low-income and underserved children to needed health care.

However, many schools and child care centers do not have the resources to meet the health care needs of the children they serve. Telemedicine can serve as a tool to complement and expand the capacity of school health nurses, school health centers, and child care centers to meet children's health care needs by using technology to connect to health providers at another location.

\* Head Start is a national program that promotes school readiness by enhancing the social and cognitive development of children through the provision of educational, health, nutritional, social and other services to economically disadvantaged children and families (from the Office of Head Start, Administration for Children and Families, U.S. Department of Health and Human Services).

## WHAT IS TELEMEDICINE?

Telemedicine is the use of Information and Communications Technology (ICT)<sup>†</sup> to provide health care services at a distance. A closely associated term is telehealth, which encompasses a broader definition of remote healthcare that includes non-clinical services, such as patient education and disease self-management.<sup>1</sup>

Common applications of telemedicine include:

- *Video conferencing* between a patient and a health care provider;
- *Transmission of images*, such as x-rays, photographs, video, and audio files; and
- *Remote monitoring* of vital signs and other health indicators.

Telehealth also includes using ICT—such as video conferencing, Internet applications, cell phones and Personal Digital Assistants (PDA)—to provide patient education; to assist patients with managing common chronic conditions, such as asthma; and to give medical education and support to practitioners.<sup>2</sup>

## THE NEED FOR TELEMEDICINE

Telemedicine is a tool to help children and adults obtain health care they would otherwise face great difficulty accessing. Low-income children living in medically underserved areas, including rural and parts of urban areas, are particularly at risk for not receiving the health care they need. Health care provider shortages, lack and cost of transportation, and time off from work and school are common barriers to accessing health care—barriers that, in part, can be addressed by telemedicine.

<sup>†</sup> Information and Communications Technology (ICT) includes, but is not limited to, the Internet, computers, hardware, software applications, telecommunications technology, advanced media technology, and hand-held devices. For the purposes of this issue brief, ICT also includes other technologies utilized for telemedicine and telehealth applications, such as remote monitoring devices, electronic clinical equipment, and other emerging technologies used to improve the health of individuals.

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## TELEMEDICINE IN SCHOOLS

California currently has 146 school health centers, the majority of which are in areas where low-income and underserved children live. Governor Schwarzenegger has embarked on an effort to increase that number by 500.<sup>3</sup> Telemedicine can complement the services of school health centers and fill the gaps where they cannot provide services to meet the needs of the children and communities they serve.

While access to an adequate high-speed Internet connection, or broadband, can be a barrier to implementing telemedicine programs, the majority of schools in California have access to broadband. This is due, in part, to the Corporation for Education Network Initiatives in California (CENIC), which leverages the resources of educational institutions to deploy high-speed Internet connections to schools across the state.<sup>4</sup> Nearly all schools in California have connections to high-speed Internet via CENIC's California Research and Education Network (CalREN).<sup>5</sup>

Telemedicine in schools can:

- *Connect Children to Pediatricians.* Telemedicine can allow school health centers and school nurses to connect children to health care providers (such as pediatricians and pediatric subspecialists) via video conferencing to help diagnose and treat particular illnesses.

For example, the TeleKidcare program, a partnership between the Kansas University Medical Center and several schools throughout the state of Kansas, allows children and school nurses to interact with pediatricians via video conferencing. School nurses are also equipped with digital otoscopes and electronic stethoscopes. Together, the technology allows the physicians to diagnose and treat, from a distance, a wide range of ailments including acute conditions, such as ear or strep infections, as well as chronic conditions such as Attention Deficit Hyperactivity Disorder (ADHD) and asthma. The physician can even call in a prescription to the family's local pharmacy. Parents are encouraged to come to the school to participate in the consult. Regardless, parental consent is obtained before services are provided.<sup>6</sup>

The project was launched as a four-site pilot in 1998 and has expanded to 31 schools.<sup>7</sup> Evaluations of the program have shown that 47 percent of consults have been for ear, nose, and throat concerns; 31 percent for behavioral health issues; 10 percent for eye-related complaints; 9 percent for respiratory ailments and 3 percent for other diseases.<sup>8</sup> Parent surveys indicated a

98 percent rate of being "satisfied" or "very satisfied," and the project's success has been noted over the years, including being recognized as a Best Practices Initiative by the U.S. Department of Health and Human Services.<sup>9</sup> A cost analysis of TeleKidcare found that, when over 200 telemedicine consults were completed, the average cost per consult dropped to under \$150, making them competitive with traditional office-based consults.<sup>10</sup>

- *Help Manage Chronic Health Conditions.* Telemedicine can also be very effective in helping children manage common chronic health conditions, such as asthma, diabetes, and obesity.

The Asthma Telemedicine Program, a two-year pilot project, connected 96 students in three San Francisco elementary schools with asthma experts at San Francisco General Hospital. Students at the schools visited with the school nurse and had several remote "visits" with an asthma specialist from the Hospital. The specialist assessed the student's health through a real-time video consultation; developed a disease management plan for each student, including instructions on how to use medications; and reviewed the student's use of the peak flow meter and the medication inhaler. Examination results, prescriptions, and the specialist's comments were integrated into a Web-based asthma management plan that was shared with the students' primary care providers.<sup>11</sup>

The program demonstrated significant improvements in children's and families' quality of life as it related to the child's asthma and increased asthma knowledge for both children and their parents.<sup>12</sup>

- *Assist with Screenings and Referrals.* Telemedicine can also be used to help children with needed screenings and referrals.

A pediatric teledentistry program was launched in three school districts in 2006 to meet the dental health needs of underserved children in Tulare County, California. Each school district has a fully equipped dental clinic, video conferencing and specialized cameras that connect to pediatric dentists at Childrens Hospital Los Angeles/University of Southern California School of Dentistry. The dentists supervise an on-site hygienist, provide remote oral examinations and patient education, and develop a treatment plan for the children who participate in the program.<sup>13</sup>

## **TELEMEDICINE IN CHILD CARE**

Like schools, child care centers provide a unique avenue for meeting the health care needs of the children they serve. Many child care providers recognize the connection between health and improved early learning.

Head Start, for example, is required to ensure that the children they serve receive well child health screenings and have access to regular health care, including oral health and mental health care.<sup>14</sup> In 2006, California had 1,927 Head Start programs,<sup>‡</sup> serving 122,093 families, including 14,142 children with disabilities.<sup>15</sup> The majority of Head Start families are economically disadvantaged, and many programs are located in rural or otherwise underserved areas. Telemedicine can help child care centers, such as those that operate Head Start programs, meet their goals of meeting the health care needs of the children they serve by using technology to bring health care on-site.

A program of the University of Rochester Medical Center in Rochester, New York, uses video conferencing to link pediatricians with children in inner-city child care centers, most of which operate Head Start programs.<sup>16</sup> Specialized cameras are also used to provide diagnostic-quality images of the eardrum, throat, eyes, and skin, and electronic stethoscopes capture high-quality lung and heart sounds.

After evaluating the child via telemedicine, the pediatricians make a diagnosis, prescribe treatments, and provide a treatment report to the child's pediatrician when applicable.<sup>17</sup> A survey of parents who participated in the program found that nearly 94 percent of problems managed by telemedicine would otherwise have led to a doctor's office or emergency department visit.<sup>18</sup> The program led to a 63 percent reduction in absences from child care. Finally, more than 91 percent of the parents of the children in the program stated that telemedicine allowed them to stay at work.<sup>19</sup>

The same program has incorporated dental screenings by employing a specially outfitted digital camera to take photos of children's teeth. Pediatric dentists at the University of Rochester use the photos to identify toddlers with early childhood dental caries. A study of the program found that nearly 40 percent of 162 toddlers suffered from tooth decay. Early detection of such decay can prevent the child from painful and costly problems, visits to the emergency room, and extractions of teeth.<sup>20</sup>

<sup>‡</sup> California's Head Start programs include Head Start, Early Head Start, Migrant Head Start, and American Indian/Native American Head Start.

## **TELEMEDICINE IN SCHOOLS AND CHILD CARE CENTERS: THE OPPORTUNITY**

Health care for children has been a priority of California's leaders and residents. In addition, California is in the process of transforming its health system through Health Information Technology. Between July 2006 and March 2007, Governor Schwarzenegger signed three Executive Orders to create a California eHealth Action Forum and state policy agenda, establish a California Broadband Task Force, which includes a health care working group, and accelerate the adoption of Health Information Technology.<sup>21</sup>

In concert with the effort to increase the number and capacity of school health centers and other health reform efforts, Governor Schwarzenegger and California stakeholders should leverage technology to meet the health care needs of children and communities. Specifically, the Governor and stakeholders should develop and pilot telemedicine demonstration projects in schools and child care centers. As such projects are tested and refined, the state can develop replicable models for schools and child care centers to utilize in their efforts to increase access to health care for children.

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### ABOUT THE CHILDREN'S PARTNERSHIP

The Children's Partnership (TCP) is a national, nonprofit organization working to ensure that all children—especially those at risk of being left behind—have the resources and the opportunities they need to grow up healthy and lead productive lives.

The Children's Partnership focuses particular attention on the goals of securing health coverage for uninsured children and ensuring that the opportunities and benefits of digital technology reach all children and families. TCP's newest program, "Defining and Promoting an E-Health Agenda for Children," aims to harness Information & Communications Technology to improve the health of America's children.

With input from its highly respected advisors, The Children's Partnership advances its goals by combining national research with state-based activities that translate analysis into local action. The Children's Partnership has offices in Santa Monica, CA and Washington, D.C.

## NOTES

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