TeleAtrics

Telehealth Solution Overview

Executive Summary

TeleAtrics is a telemedicine solution created to enable telehealth interactions between clinicians (physicians, nurse practitioners, etc.) and patients. Telehealth services encompass diagnosis, treatment, and information exchange with the clinician and patient in different locations, facilitated by telecommunications and information technology.

The TeleAtrics solution provides clinicians and patient groups (childcare centers, schools, community centers, nursing homes, etc.) with an integrated telemedicine package of processes, training, software and computer services to engage in personable and effective healthcare encounters over the Internet.

Designed by pediatricians, the Childcare and School Edition of the software is a proven product having facilitated thousands of telehealth encounters. These "virtual house calls" provide timely medical support without the provider or patients leaving their locations. "Convenient Care" and "Senior Care" versions of the system are in development.

Product Description

The presently available version of the TeleAtrics solution is the Childcare and School Edition. This fully functional system consists of the computers, cameras, electronic stethoscope, software, training and implementation support to enable "virtual house calls" between physicians and patients.

The clinician and patient, while physically separated, are connected by the Internet through high-speed broadband or ordinary telephone lines. Typical healthcare encounters consist of secure, real-time, two-way visual and audio contact between clinician and patient, using inexpensive video conferencing cameras connected to the clinician's and patient's personal computers. Through the use of various "peripheral" attachments at the patient's site (originating site), trained administrators may capture and record various visual observations (e.g. – video clips of a child's ear canal, images of the ear drum, throat, eyes or skin, etc.), recorded sounds (e.g. - auscultation of heart and lungs) and other measurements as appropriate to specific clinical problems needing to be addressed.

Originating sites (community centers, childcare centers, schools, etc.) are typically staffed with certified telehealth assistants (CTAs), trained in the methods and process of using the TeleAtrics workstation. A typical implementation would include an employee at the originating site who is responsible for the health services provided at that location. This person, along with a back-up, receives training in how to use the TeleAtrics processes and system. An important component of the solution is an electronic medical record permitting the CTA to record other observations (e.g. – temperature) and relevant personal medical history as part of the patient's electronic file. Training involves learning how to operate the medical devices and software, and how to interact with physicians to complete a patient encounter.

From the physician's perspective, the physician's workstation (any personal computer) allows the clinician to observe and converse with the patient, review the information documented by the CTA, review and re-review the video, audio and other captured medical observations, and instruct the CTA to capture additional observations as necessary. This process includes access to the patient's electronic medical record and medical history.

The clinician can see and converse with both the patient and the CTA in the same way as an in-person visit, and vice versa. Depending on work process, patient/clinician availability, type of clinical problem, and time of day, it is also possible for the CTA to capture all the relevant information, record the observation, and "store and forward" the data to the clinician for later review, diagnosis and treatment recommendations.

The network configuration of the TeleAtrics solution establishes clinician sites and originating sites. Multiple clinician terminals (personal computer with an Internet connection) may be enabled within the clinician's site to enable several doctors within an office to "see" patients. The system's design permits clinicians to securely access patients at any originating site from any location with a personal computer and Internet connection. This simple design permits physicians to see their patients from their offices, hospital-based practices or even from at-home computers.

Similarly, multiple terminals may be located within an originating site, although more commonly, a community access site will have a single device located within a healthcare room. Typically, multiple originating sites would network within a community to multiple clinician sites, which would include primary care physicians, sub-specialists, clinics, and hospitals. The system is fully capable of supporting originating sites reaching multiple clinicians at multiple sites. The software is FDA approved.

TeleAtrics Network Architecture
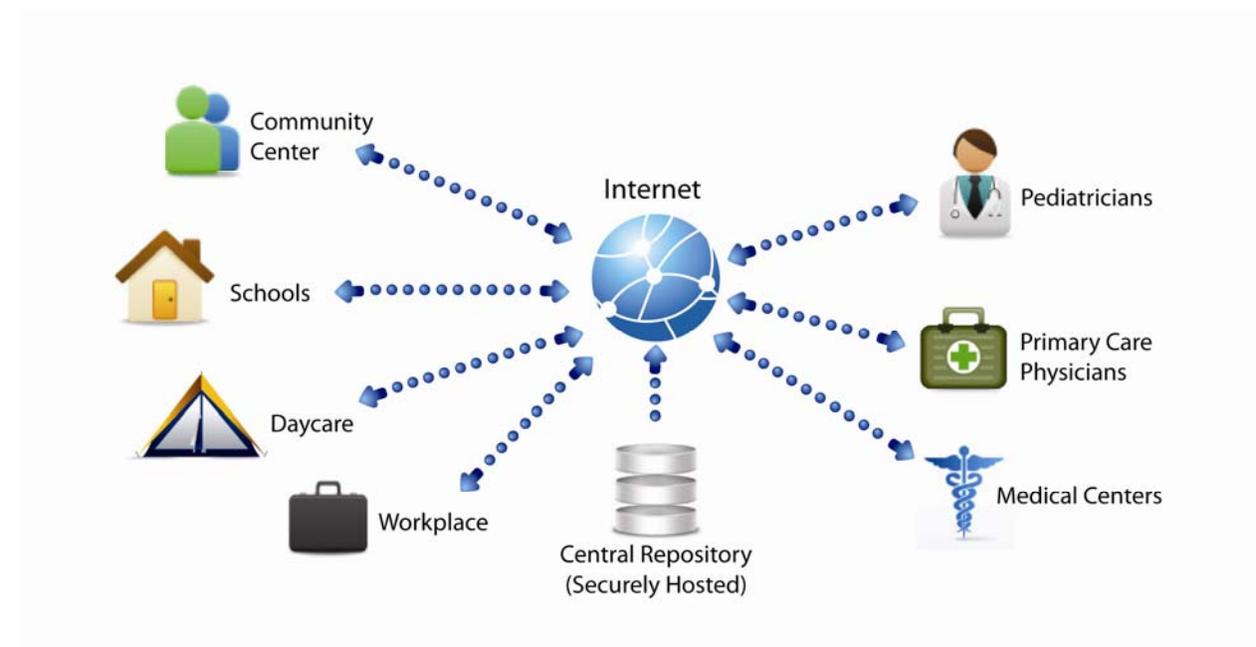
Solution Deployment and System Components

Workstations placed at originating sites are located in HIPAA-compliant areas that can provide the required privacy, security, workspace and environmental conditions. An LCD display of sufficient size, location and resolution that can be seen by both the patient and the CTA is necessary. A high-speed "broadband" connection to the Internet with appropriate security facilitates the optimal patient encounter. Alternatively, an ordinary telephone line may be used under certain conditions. A working telephone handset is also required in the work area. The audio/visual conferencing component of the solution is tightly integrated and sophisticated, capable of delivering varying image resolutions based on recognition of available bandwidth.

At the clinician's site, the design of the TeleAtrics solution permits physicians to access the TeleAtrics software from any PC located in a HIPAA-compliant area that can provide the required privacy, security, workspace and environmental conditions. An LCD of sufficient size and resolution that can be used by the clinician to review clinically-important fixed images, videos and the graphic analog of stethoscope sound files is required. The screen should be of a size to allow multiple windows of visual records to be viewable at any one time. A broadband connection is desirable and a working telephone handset is also required in the physician's work area.

The patient and clinician computers work through a central server repository which securely captures, stores and distributes all the patient information, observations and clinician notes. The system is hosted from a secure Internet service provider (ISP). The TeleAtrics solution acts as a mini electronic medical records system and is built to enable interfaces to multiple hospital or clinical practice record systems. The central repository and its associated administrative operation allow for software to be maintained at the latest levels at all clinician and patient sites, maximized security and privacy, and minimized cost.

Product	Originating (patient) Site	Clinician Site
Standard personal computer with service	X	X
Simple video conferencing camera and headset	X	X
Videoconferencing	X	X
Clinical-quality video otoscope for viewing the ear canal, ear drum, throat, skin, eyes, etc.	X	
Electronic stethoscope and software	X	
Other attachments for appropriate measurements as necessary, including ECG, EKG, blood pressure, etc.	X	
Installation and Training	X	
TeleAtrics Software	X	
Speakers and Microphone	X	X
Broadband	X	X