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LESSON

Home-Telemedicine Improves Access & Quality of Healthcare and Decreases Overall Costs [Implemented: 30 Dec 1999]

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Core Message

Home telehealth improves access to care and educational material by allowing clinicians to monitor patients' important vital signs (including pain), integrates home telemedicine data with Vista (CPRS GUI Cover Sheet); and provides web-based education, questionnaires and disease management surveys to the patients, with their responses and the clinician interaction being integrated automatically into Vista.

Rationale / Need / Adverse Event & Proximal Causes

Among patients with chronic diseases such as Congestive Heart Failure (CHF), Diabetes Mellitus (DM), and Chronic Obstructive Pulmonary Disease (COPD), there remains a relatively high number of Emergency Room (ER) visits and bed-days-of-care (BDOC), as compared to treating diagnoses. The frequent recidivism caused by these chronic diseases adversely affects patients' quality of life and adds significant costs to the healthcare system. In addition, this 'chronic disease' population tends to be the frail, elderly patients, who have difficulty traveling for health care. Many times these follow up clinic appointments for routine monitoring fails to detect unpredictable health events in the home and provide timely intervention. The VA Connecticut home telemedicine program using a vendor home unit improves access to care and educational material by allowing clinicians to monitor patients' important vital signs (including pain) from patients' homes using internet based technology; integrating home telemedicine data with the Vista (Veterans Information Systems and Technology Architecture) Computerized Patient Record System Graphic User Interface Sheet; and providing web-based education, questionnaires and disease management surveys to the patients, with their responses and the clinician interaction being integrated automatically into Vista.

Action Taken / Procedure / System Redesign

(1) Completed a pilot study using home-telehealth on homebound, 'high-resource-use' patients with chronic conditions to optimize success for a larger project; (2) Entered a strategic partnership with vendor to develop a home monitoring device for the elderly, chronically-ill population to allow physiologic data to be transmitted over telephone lines to a secured web site; (3) Integrated vital sign data with Vista; (4) Identified barriers to monitoring health status; (5) Developed a comprehensive informed consent form, individualized health-education and intake forms, objective and subjective surveys, and learning outcome tools linked to

disease-specific educational modules via the intranet. The following is a partial list of the Internet related features supported: (1) A comprehensive web-based “scheduling” program that reminds patients with an audible tone, when to take a specific medication or perform a specific measurement - take BP, weight, complete a web based disease management surveys; (2) Web-based education modules - Education modules use text, streaming video, and audio to deliver content, along with a means to assess achievement of learning, patients respond to web-based health/education questionnaires; (3) Hospital to Home messaging - Providers can send email messages to patients providing valuable feedback to encourage self care; (4) Web-based data reporting scheme for (a) providers organized by patient, date, compliance status and physiologic measurement type (trending reports and graphs)and (b) an Administrative/Director Report to show number of units out, diagnoses being monitored, number of home telemedicine visits, and number of out-of-range parameters; and (5) Web-based patient surveys for disease management (CHF, COPD, DM and Pain developed and in use), satisfaction with home telehealth, safety and more. Presently we are developing an alerting system supporting digital pagers and email to notify designated providers when patients fall out-of-range for disease management surveys, fail an educational module or vital signs exceed pre-set limits.

Measurable Outcomes or Improvements

1) Decrease in overall healthcare costs; a) Move data not people, b)Decrease in beneficiary travel cost, c) Decrease # of ER and clinic visits(Findings to date show a 21% reduction in ER and unscheduled clinic visits for the group of patients on home telemedicine compared to a 3% reduction in the control group – a seven-fold improvement), d) Avoided hospitalization (Findings to date show a 19% greater reduction in BDOC for the group of patients on home telemedicine), 2) Improved management of disease states; a) Empowers patient to manage their health, b) Efficient daily monitoring; 3) Improved compliance with plan of care; 4) Appropriate utilization of resources; 5) Improved level of independence; 6) Informed decision making; 7) Improved continuity of care; 8) Improved quality of life; 9) Treatment in compliance with advance directives; 10) Improved Patient and family satisfaction; 11) Improved provider satisfaction.

Lessons Learned

(1) Education and training of patients, caregivers, clinical and ancillary support staff are essential; (2) Patient health-education programs and learning outcome assessment are imperative; (3) Not every patient is suitable for home-telehealth and patient/caregiver assessment is needed; (4) VISTA integration is key and requires skilled IT support; (5) An intact relationship with a reputable vendor is vital (6) Adhering to information security (IS) policy and regulations and

addressing IS issues is critical (7) VA nation-wide can benefit from this work.

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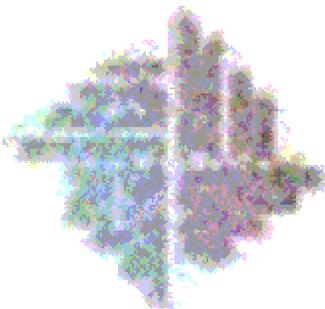
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