Expanding CER Capability through Complex Patient Relationship Management

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Infrastructure Description

This project created a technology infrastructure for bi-directional text message communication between providers and patients, including a link to the electronic medical record (EMR). The infrastructure allowed for the collection of self-reported health data from complex patients between clinic visits and targeted outreach to at-risk patients. Patient-reported data are automatically incorporated into the EMR to inform providers.

Specific Aims

1. Expand administrative and clinical data warehouse infrastructure capacity of an urban healthcare system to create a research database for observational comparative effectiveness research (CER) on complex patients.
2. Create and document a comprehensive set of guidelines, strategies, and reporting mechanisms to promote effective use and dissemination of the research database.
3. Conduct CER studies to determine whether patient care improves when chronic conditions are managed through customized, integrated system reports and automated text messaging communications.

Pilot Study

This nine-month study (N=135) tested the feasibility and usefulness of this newly developed infrastructure. Patients with diabetes were prompted by text message to report blood sugar, blood pressure, and step count data back by text message. System links to laboratory and pharmacy data identified patients overdue for lab tests and medications, and those patients were sent automated outreach messages. Focus groups were held with participating patients to assess satisfaction.
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Patients successfully provided more than 6,000 home measurements of health data (i.e., blood sugar, blood pressure, and step counts), which were automatically transferred to the EMR. Automated outreach to patients overdue for lab tests and medications was achieved, but gaps in pharmacy data required manual quality review. Participants reported improved awareness of their chronic disease status and enhanced self-management skills.

This feasibility study demonstrated that mobile technology has the potential to improve health care quality, clinical outcomes, and patient satisfaction, while reducing overall healthcare costs by helping to engage patients in the management of their chronic illnesses between clinic visits.

Publications (as of September 2013)


Posters and Presentations


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