Potentials of Internet-Based Patient Engagement and Education Programs to Reduce Hospital Readmissions

A Spotlight on Need in Heart Failure

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KEYWORDS

• Internet-based platforms/applications • M-health • Patient engagement
• Care-management • Readmission avoidance • Heart failure • Self-management

KEY POINTS

- The most prominent example and precursor to this technology is the patient portal.
- Internet-based (IB) applications range in functionality and scope from readily available and unmonitored Internet sites providing health information to highly regulated and protected patient care online environments, such as patient portals and telemedicine applications.
- IB applications and mobile technologies (m-Health) are becoming an attractive platform for readmission avoidance programs for patients with heart failure, and for other conditions at high risk for readmission.

INTRODUCTION

Treatment of heart failure (HF) largely depends on the ability of patients to engage in effective self-management activities. The Heart Failure Society of America (HFSA) provides comprehensive guidelines for the education of both HF patients and their caregivers. The essential elements of an HF program are based on targeted behaviors that focus on the following elements: (1) understanding of the overall disease process, (2) recognition of symptoms, (3) indications for medications, (4) modification of risks for disease progression, (5) specific activity and exercise recommendations, and (6) importance of adherence to treatment plan.[1]

Largely based on these elements, hospital-based readmission reduction programs are becoming standard throughout the United States. This increased interest in reducing readmission is at least partially motivated by the threat of financial penalties for excessive

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readmission, but is also motivated by the organization's wish to improve the health and quality of life of the individuals and families in the communities they serve.[2] In addition to hospitals taking notice of the financial ramifications associated with reducing readmissions, insurance companies are also developing strategies to reduce readmissions for their beneficiaries.[3] In most cases, hospitals and insurance providers are using programs that are primarily focused on increasing postdischarge contact with the patient through home visits and via the telephone. The secondary focus of these programs is to improve self-management behaviors through disease-specific education and support for patients and caregivers.[4–6] In light of these factors and motivations, hospitals have become open to trialing innovative and cost-effective strategies to both reduce readmission rates and improve patient outcomes. Specifically, HF contributes to more than 1 million hospital admissions each year, costing the American population more than $20 billion annually. When direct and indirect costs of HF are assessed, the costs are astronomical. It is estimated that those costs exceeded $40 billion in 2010 with costs expected to increase.[7] To mitigate or counter this expected increase in readmission, affordable and easily scalable Internet-based (IB) strategies are becoming increasingly attractive to any organizations that either are responsible for paying for potentially avoidable hospitalizations (insurance companies and accountable care organizations) or that incur stiff penalties for deviations in optimum care (hospitals).

Many of these strategies include the use of health information technology. These technologies are gathering more popularity as potentially viable means of improving care efficiency, patient safety, and patient outcomes. Technological developments such as electronic medical records, computerized medication ordering and prescribing, and decision support are now recognized as making a significant difference in both outpatient and inpatient care.

In general, these improvements are in response to enhanced work flows, improved communication, predictive modeling, and identification and stratification of patient risk.[8] In most of these examples, the focus has been on improving the way that clinicians (nurses, doctors, clinical pharmacists, social workers, and so forth) provide care to the patient. The success of these provider-focused technologies to improve outcomes, in combination with the explosive growth of Internet-based communication capacities, have stimulated considerable thought and energy around developing novel approaches to the traditional provider/patient therapeutic interaction or IB patient engagement and education programs.

The most prominent example and precursor to this technology is the patient portal. The term patient portal implies a variety of software solutions that give both patients and their providers the ability to have a shared view of a patient's health information and the ability to hold a dialogue about that information. The hope is that these technologies will improve communication between the patient and clinician, and shift the ultimate management of individual health toward the patient.[9]

As stated previously, the time between inpatient and outpatient care, termed transitional care, is a time of high risk for patients and families in the postdischarge stage. The use of IB patient engagement strategies is relatively new, but these innovations offer promising potential for improving patient engagement and education, enhancing provider-patient and provider-provider communication, and reducing unnecessary hospital readmission from avoidable causes.[8,10]

HEART FAILURE READMISSIONS: A POTENTIALLY AVOIDABLE SITUATION

HF contributes to 32% to 35% of the hospitalization admissions in the United States each year.[11] Of these patients, approximately 25% are readmitted within 30 days of