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Preliminary Benefits of Information Therapy

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Abstract

Information therapy (ie, information prescriptions) is a potential new tool for primary care physicians that could improve patient knowledge, decision making, and communication between physicians and patients. Although patients have access to numerous health-related articles online, the availability of this health information does not ensure improved knowledge or better health decisions by patients. Communication between patients and physicians is often limited and messages are commonly misunderstood. Information therapy offers a potential solution for the primary care environment. **Method:** Two employers, in different geographical locations of the Midwest, offered the MedEncentive program to employees and their dependents as a part of their health plans. This program also offers primary care physicians the opportunity to prescribe information to patients during office visits. Patients were then eligible to participate in this information therapy (Ix) through a Web-based platform. Both primary care physicians and patients were financially incentivized for participation. Physicians received a monetary stipend for prescribing evidence-based information therapy and patients were refunded part or all of their copayment for reading their condition-specific Ix and answering questions about knowledge, compliance, health status, and satisfaction with the care they received compared to the evidence from the Ix. **Results:** Patients received information therapy from their primary care physicians and reported a high level of satisfaction with care, improved health status, and compliance with pharmaceutical prescriptions. **Discussion:** This case study had a number of limitations and as such the results should be interpreted with caution. However, there is a need for an immediate solution as patient satisfaction with their care and compliance with pharmaceutical prescriptions continue to decrease, despite the amounts of widely available health information. These preliminary findings suggest that information therapy through a Web-based platform, augmented by doctor-patient mutual accountability, could be part of the solution for the current ambulatory health care environment.

Keywords

health outcomes, impact evaluation, prevention, primary care, program evaluation

Information therapy (Ix) has been formally defined as "the therapeutic provision of information to people for the amelioration of physical and mental health and well-being", and described as helping patients through access to information and patient education.[1] Ix has been identified as a strategy to improve patient satisfaction and potentially health outcomes.[2] Patients now have access to millions of medical articles and numerous health-related Web sites; however, the accessibility and availability of untailored information does not ensure better health decisions and health outcomes.[2,3] More specifically, despite widely available information, communication between patients and physicians is often lacking and messages are commonly misunderstood.[4,5] Despite crucial importance and known inadequacies, there is limited empirical evidence to support investments in Web-based consumer health information that might lead to improved communication and patient compliance.[4]

This pilot study examined the effectiveness of incentive-induced Ix and patient reported outcomes. This is a preliminary, independent analysis to describe the immediate benefits of Ix as an illustration of the impact of Web-based health information platforms for consumers. The information therapies described in this study were delivered through the MedEncentive Information Therapy Program,[6] which is a fee-for-service, Web-based incentive system that

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Table 1. Average Monthly Health Members

Employer	2004	2005	2006	2007	2008	2009	Across Year Average
1	534	534	527	514	521	526	527
2	–	–	–	1,384	1,251	1,191	1275

employers adopt as part of their health care coverage plan for their employees. MedEncentive was developed in response to the healthcare environment to help control employers' costs by promoting improved patient health knowledge and improved communication between patients and doctors.[7] Both patients and doctors are financially incented to use the Web-based system to demonstrate adherence to evidence-based performance standards and healthy behaviors. Additionally, they must agree to allow the other party to acknowledge or confirm their adherence. This creates a process of checks and balances referred to as doctor-patient mutual accountability.[7]

Method

This was a case study with no comparison group. In the MedEncentive Information Therapy Program, a participating physician is financially rewarded for voluntarily accessing the program's Web site with each office visit involving a MedEncentive beneficiary to: (1) declare to the patient adherence to an evidence-based medicine (EBM) treatment guideline or provide a reason for nonadherence; (2) prescribe information therapy to the patient by selecting a relevant online medical article(s); (3) agree to have the patient rate the physician's performance against the EBM guidelines described in the Ix; and (4) agree to acknowledge the patient's performance against recommended behavioral changes. The patient earns a refund of all or a portion of his/her office copayment for voluntarily responding to information therapy by accessing the program's Web site to: (1) read or view the prescribed medical article(s); (2) demonstrate to the doctor his/her understanding of the prescribed article(s); (3) self-report to the doctor his/her adherence or provide an appropriate reason for nonadherence to recommended care/maintenance; (4) agree to have the physician acknowledge the patient's performance; and (5) rate the physician's performance against the prescribed article(s) and the physician's declaration of adherence or reason for nonadherence. MedEncentive acquires evidence-based medicine treatment guidelines and health information from HealthGate Data Corporation, Healthwise Inc, and other national resources for evidence-based protocols and medical content.[7]

The Web-based Ix system was accessible to all patients, regardless of locality. Those patients who had barriers (eg, travel or time) associated with seeking medical advice in the past could access information regarding their condition in their own home, on their own time. MedEncentive required employers to provide Internet access for employees and dependents who did not have access to the Internet at home or to those who had field jobs. They also suggested that physicians provide Internet access to patients at clinics as well. This Web-based medium allowed the patient to receive the Ix when they were ready (eg, not during a time when they were experiencing appointment anxiety) and allowed patients increased time to read and retain the prescribed health information (Ix). The system also keeps each patient's prescribed Ix readily available if they would like to review previously prescribed information.

Results

The data from 2 piloted groups were examined. These employers were chosen from a pool of MedEncentive's clients because of availability of their data. Employer 1 involved employees of a municipality (and their dependents) in a Midwestern community with an approximate population of 25 000 people. This employer adopted the program in August of 2004. The average monthly enrollment of health plan members was 527 people (Table 1). Employer 2 was composed of employees (and dependents) of an outpatient, multispecialty group practice owned and operated by physicians in a Midwestern community of about 350 000 people. This employer adopted the program in June of 2007. The average monthly enrollment of health plan members was 1275 people (Table 1). Approximately 25% of health plan members from employer 1 and 39% from employer 2 were eligible to participate and receive Ix from the program because they had an ambulatory/primary care visit.

The overall rate of Ix participation in MedEncentive for employer 1 was 66.9% (2004-2009) and 68.06% for employer 2 (2007-2009) (Table 2). The Ix participation rate was calculated by dividing the number of information therapy prescriptions that were completed by health plan members divided by the total number of information therapy prescription opportunities during each year. An opportunity was defined as an office visit by a MedEncentive eligible health plan member. Both employers' participation rates increased across implementation years; in the second and fourth years, the implementation participation rate was approximately 75% for employer 1, while employer 2 achieved that percentage in the third year. The participation rate was 85% in the sixth year of implementation for employer 1.

Table 2. Information Therapy Participation Rates

Employer	2004	2005	2006	2007	2008	2009	Across Year Average
1	43.8%	74.7%	44.0%	73.8%	80.1%	85.2%	66.9%
2	–	–	–	60.5%	68.4%	75.3%	68.1%

Of the completed Ix prescriptions that involved pharmaceutical medications, participating plan members reported: (1) taking their medication 95% of the time, (2) improvement in their health condition 98.8% of the time, and (3) satisfaction with their doctor's care 96.3% of the time (an additional 3.1% reported "somewhat" satisfied). Of the completed Ix prescriptions that did not involve pharmaceutical medications, participating plan members reported: (1) improvement in their health condition 96.8% of the time, and (2) satisfaction with doctor's care 95% of the time (an additional 4% reported "somewhat" satisfied).

Discussion

These preliminary findings illustrate the immediate effects of incentive-induced Ix and imply that there may be many potential long-term benefits associated with Web-based Ix. Patient self-reported pharmaceutical prescription compliance was 95%, compared with the national average ranging between 43% and 78%.[8,9] Future analyses of these data will cross validate reported prescription compliance with pharmaceutical prescription refill data.

The final year of implementation participation rates were 85% for employer 1 and 75% for employer 2, which was higher than the average participation rate of 60% reported by incentive-induced work site wellness programs.[10] High participation rates are important for program success in terms of outcomes and cost savings.[11-12]

Patients also highly rated their satisfaction with their doctor's care after consuming their Ix and reading about recommended evidence-based care. Patients' reported satisfaction with their doctor's care was 96%. Another important and desired effect of Ix is the potential improvement in patient and doctor communication. These initial numbers indicate that not only are patients satisfied with their physician's care, they understand their condition, and are following a drug regimen they agree with (when medications are prescribed). These combined effects have great potential for influencing and modifying the current patient and doctor relationship. These preliminary findings suggest that doctors who prescribe information therapy will have better patient communications and higher patient satisfaction ratings. This is noteworthy because poor doctor-patient communication leads to patient mistrust and anger, which are commonly associated with malpractice litigation.[13] In addition, this provides one solution to address the barriers associated with patient understanding and adoption of evidence-based medicine guidelines.[5]

Limitations

Although the intervention is innovative in nature, this descriptive study has limitations. One of the most serious limitations is the lack of demographic data for both physician and patient participants. A single employer group, with only aggregated demographic data for participating patients, (mean age, 29; 51% male) can garner conclusions; however, analyses with more complete person-specific data allows examination of biases and outcome rates. The current analysis is based on deidentified claims data, which do not include patient characteristics.

Another limitation is the integrated nature of the Ix with the incentives, which means the impact of each could not be discerned. As a real-world intervention rather than a research project, employers did not want to have partial interventions. One possibility for the future is a multiple phase intervention with staggered implementation to isolate the effects of the multiple intervention components. In addition, no comparison group is available for analysis. This is critical to understand the total influences of these interventions, and as such these data should be interpreted with caution.

Finally, the online survey tool is self-reported data, which is an efficient component of the system. Still, many researchers favor indirect outcome measures (eg, pharmacy refill rates) over self-reported data, employing secondary measures of behavior and behavior change as less biased, and to be correlated with self-reported primary data to avoid these biases.[14] Still, other studies suggest self-reported data can be accurate and must be a tool incorporated into community health research.[15] Because this case study lacked the secondary metrics, we have reported what is available. With these limitations, conclusions on the generalizability of these initial findings are impossible; however, we believe these initial findings are important to share, to encourage adoption and the investigation of such novel interventions. This case study used claims and online participant survey data, under a deidentified agreement to protect the confidentiality of patients.

Conclusions

There is a need for an immediate solution as patient satisfaction with their care and compliance with pharmaceutical

prescriptions and healthy behaviors continue to decrease, despite the amounts of widely available health information.[16] These preliminary findings suggest that incentive-induced Ix through a Web-based platform, augmented by doctor-patient mutual accountability, could be part of the solution for the current ambulatory health care environment. This solution focuses on empowering patients with information that is physician prescribed, specific to their condition, and based on the latest EBM guidelines. Imagine what health outcomes could be achieved if 95% of health care consumers were satisfied with their care and took their medications as prescribed, because they better understood their health conditions and purposes for medications as a result of consuming their information therapy prescription.

Authors' Note

These data used in this investigation were supplied by MedEncentive, Inc. to University of Kansas School of Medicine-Wichita under a Confidentiality Agreement, to conduct an independent evaluation according to a specific proposal to analyze the data. Under this non-monetary exchange and Business Affiliation Agreement, the KUSM-W IRB approved (dated 9/21/09) examination of identifiable records. MedEncentive, Inc. has been given an opportunity to review, comment, make suggestions, and receive from KUSM-W responses to its comments and recommendations. The interpretations and conclusions represent those of the authors.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interests with respect to the authorship and/or publication of this article.

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