

Using Internet Interventions to Control Performance in a Transparent Market

Summary

The democratization of medical knowledge has created a new role for physicians at the same time that performance transparency trends continue to strengthen. As a result, providers are increasingly pressured to take a stewardship role in informing and engaging patients in their care for optimal results. However, short visits and complex medical options demand a new vehicle for informing. Physician-directed Internet interventions offer a viable solution to this need. These web-based portals allow patients to be efficiently “recruited” into their own care in a way that encourages treatment adherence and engagement, more productively manages the informing process, and increases patient satisfaction. Studies show that Internet interventions increase patient knowledge as well as improve clinical outcomes. Given the market trends toward transparency regarding provider quality, patient satisfaction and service efficiency, adding the Internet to the clinician’s “intervention toolkit” may make business as well as clinical sense.

Internet-Driven Physician Informing Function

The nature of the physician-patient relationship has changed dramatically over the past decade and will likely keep evolving if current market trends continue. The presence of Medline and other websites has given consumers and physicians equal access to knowledge bases of medicine (Eysenbach). The rise of health coaching as it relates to “preference-sensitive” conditions has led to well-informed patients who are more likely to take an active role in their healthcare by weighing tradeoffs regarding their treatment and

making decisions based on these tradeoffs. As a result of these trends, many patients use the Internet to research their diagnosis and treatment choices before or after meeting with their physician.

Patients are awash in medical information and looking for guidance from clinicians. An estimated 70 million consumers are searching for health information on the Internet, yet with little physician direction, patients are “left to navigate an information system with no quality control and no patient-specific content” (Christakis). Increasingly, clinicians are being asked by patients to review information from the Internet or answer questions based on

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Internet search findings, and thus are finding themselves charged with the task of contextualizing and interpreting patient-retrieved Internet health information. This role is burdensome and problematic given the current, episodic, time-limited practice delivery model.

Internet-based health information may be misleading or misinterpreted, and thus requires a thorough assessment for validity and clinical relevance, yet physicians do not have the time or ready resources to perform this function and patients’ care can be negatively impacted if they follow this misinformation. Current fee-for-service reimbursement schemes do not include financial rewards for physi-

cians’ patient education efforts, though emerging “pay for performance” programs do reward patient satisfaction efforts. “The system clings to an outdated model,” write Woolf, et al, “relying on busy clinicians to keep their patients informed — a holdover from an earlier time when a physician’s impromptu advice was sufficient and there was little concern about its inherent incompleteness or bias.”

Several factors predict that the demand for this new role of physician as interpreter of health information will continue to strengthen. Patients are being charged with financial accountability for their healthcare and thus have higher customer expectations for quality

Figure 1. Example of Provider Scorecard

Name of Medical Group	Getting the Right Medical Care based on patient records and recommended standards of care	Patient Rating of Business Experience based on patient surveys of their care and service
	Explore this rating	Explore this rating
	Scored Lowest Scored Average Scored Highly Scored Best	☆ Poor ☆☆☆ Good ★ Fair ☆☆☆☆ Excellent
Broon & Toland Medical Group		☆☆
Humbolt-Del Norte IPA		☆☆☆
Mann IPA		☆☆
Sonoma County Primary Care IPA		☆☆
Sutter Medical Group of the Redwoods		☆☆☆
The Permanente Medical Group - Bay Area	The Permanente Medical Group quality program differs from the California Pay for Performance program that is reported here	☆
Valley of the Moon Medical Group		☆☆

Source: David S. P. Hopkins, PhD. Pacific Business Group on Health.

Employer and government healthcare purchasers are rapidly driving the measurement and reporting of information regarding provider quality and costs.

healthcare services. The growing shift toward pay-for-performance and transparency in healthcare implies that as more information about healthcare becomes available to the public, patients are likely to undertake even more Internet research and develop even more questions for clinicians. And younger patients — particularly Baby Boomers — accustomed to using the Internet to manage other personal affairs have come to expect the same web-based resources and services from their physicians. These factors make the need for effective informing crucial, even as they make it more difficult to perform.

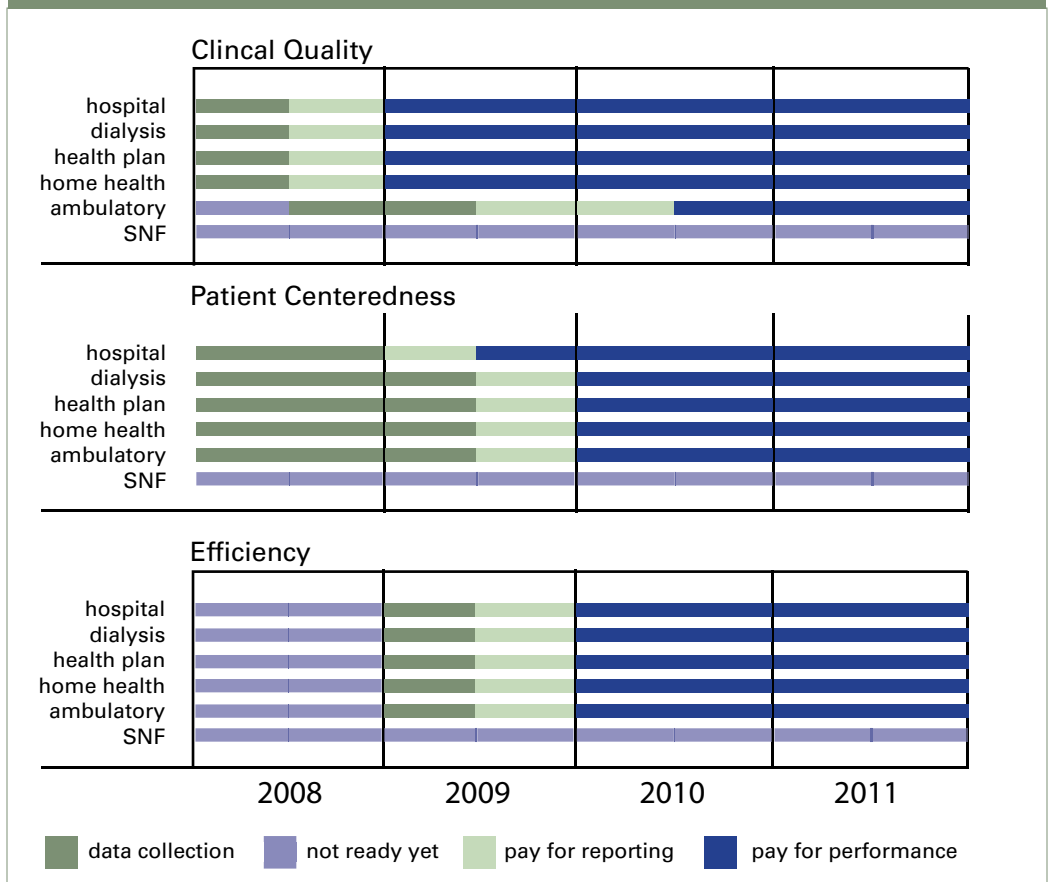
Provider Performance Soon Transparent

Healthcare transparency is a major force behind the need for effective informing. Driven by what is viewed as crisis-level healthcare spending and suboptimal

quality and value, employer and government healthcare purchasers are rapidly driving the measurement and reporting of information regarding provider quality and costs. These organizations are leveraging their financial purchasing power to require healthcare plans or purchasers to demand transparency into provider quality, efficiency, and patient satisfaction measures, as well as to align provider financial incentives with this performance.

There are now well over 100 “pay-for-performance” programs linking provider reimbursement to performance in operation, and the majority of these programs now reward individual physicians and include specialists (Med-Vantage). Currently, about one-third of them publicly report performance results, and it is estimated that by 2007 half of programs will do so. (See Figure 1 for an example of “Provider Scorecard”.) Medicare has also reported its

Figure 2. Institute of Medicine Proposed Medicare Pay-for-Performance Timeline



Source: National Academy of Sciences Institute of Medicine. 2006. Rewarding Provider Performance: Aligning Incentives in Medicare.

Figure 3. The Case for Transparency

“Beyond merely collecting data on provider performance, CMS should *make such data publicly available so that consumers will have the opportunity to fully characterize the performance of providers when making health care decisions.*”

Source: Institute of Medicine’s “Pathways to Quality Health Care - Rewarding Provider Performance. Aligning Incentives in Medicare.” From Committee on Redesigning Health Insurance Performance Measures, Payment, and Performance Improvement Programs, Board on Health Care Services; August 2006

plans for rolling out physician-based pay-for-performance reimbursement over the next 2 to 5 years, and estimated that 20 to 30 percent of total Medicare payments might be tied to performance (see Figure 2 for one recently proposed timeline for Medicare Pay for Performance).

The categories of performance measurements vary across programs, but generally include weighted combina-

tions of clinical quality (either as process or outcome metrics), patient experience, efficiency, and information technology adoption.

Regardless of the eventual success of payment for performance, there is consensus among leaders of purchaser organizations that performance measurement and reporting is inevitable and likely a core component of the transforming healthcare system. Indications that performance transparency is a top priority of the government include a recent report by the Institute of Medicine (IOM) on rewarding performance (“Rewarding Provider Performance: Aligning Incentives in Medicare” from National Academies of Science, 2006) and an Executive Order in August 2006 by President Bush. The IOM report recommended that Medicare publicly report to consumers provider performance results, as a means of promoting competition and adoption of quality improvement initiatives (see Figure 3).

Figure 4. Bush’s Executive Order August 2006

- Agencies shall comply by **January 1, 2007**
 - Medicare**, Veterans Affairs, Department of Defense (TRICARE), Federal Employees Health Benefits, Indian Health Service (**25% of insured Americans**)
- **HIT Requirement** – use HIT that meets interoperability standards in exchanging data between agencies and with providers, plans
- **Quality transparency** – implement programs measuring provider services to beneficiaries and enrollees. Standards established by multi-stakeholder entities
- **Pricing transparency** – make available to beneficiaries and enrollees (and maybe public) prices that agency pays to providers for procedures. Collaborate with multi-stakeholder groups in developing overall cost information.
- **Promote quality and efficient care** – approaches encouraging high-quality and efficient care must be offered to beneficiaries, enrollees, providers; includes P4P and CDH plans

Executive Order, August 22, 2006: “Promoting Quality and Efficient Health Care in Federal Government Administered or Sponsored Health Care Programs.”

Figure 5. Assessing Efficacy of Various Patient Engagement Methods

	Content > Knowledge	Context > Retention, Trust	Interchange > Involvement, Activation	
Highest	<ul style="list-style-type: none"> Verbal + written, graphics Personalized, expert-sourced 	<ul style="list-style-type: none"> Physician-directed to 24/7 portable materials Trusted source — medical experts 	<ul style="list-style-type: none"> Interactive web Ready access to provider for Q & A Support groups/tools 	Internet Interventions
Efficacy Level	<ul style="list-style-type: none"> Verbal + written, graphics Varied depth, expert-sourced 	<ul style="list-style-type: none"> Office visit + industry-sponsored materials Trusted source — medical experts 	<ul style="list-style-type: none"> Some Q & A access Limited support resources 	
Lowest	<ul style="list-style-type: none"> Verbal only Relatively generic and broad if written 	<ul style="list-style-type: none"> During office visit only 	<ul style="list-style-type: none"> Some Q & A access Limited support resources 	

Any tool able to significantly improve patient engagement in an efficient manner for the provider would likely offer a definitive advantage and financial return.

The executive order mandates that the major federal health agencies, including Medicare, begin collecting and reporting quality and price data from all providers who serve beneficiaries and federal employees starting in January 2007 (see Figure 4). “People deserve to know what their healthcare costs, how good it is, and the choices available to them,” Health and Human Services Secretary Leavitt said at the August 22, 2006 signing. “The president’s action today is a major step forward in giving consumers easy-to-use information about the quality and price of their healthcare. This is fundamental to achieving a healthcare system that delivers good value.”

The implications for physician practices of this approaching, transparent healthcare market are significant and multiple. At a fundamental level, these changes require that practices have better transparency and control over the quality, efficiency, and service satisfaction of the care they provide. One key to controlling practice performance is the ability to measure key parameters and features, which implies that some form of informatics platform will be needed.

Another logical business implication of performance transparency and de facto provider competition calls for an identification of which factors that affect quality, efficiency, and satisfaction can be controlled by the physician or practice. For example, service conveniences and courtesies are controllable features of a practice that are likely to affect patient satisfaction.

A core, underlying driver of multiple performance characteristics is the nature of patient engagement in the care process. This has been shown to affect adherence to treatment plans, medical errors, outcomes, and satisfaction with the clinical experience. Any tool able to significantly improve patient engagement in an efficient manner for the provider would likely offer a definitive advantage and financial return.

The Internet Intervention Opportunity

One such tool that promises to benefit both patients and physicians by improving the informing process is the Internet intervention. These dynamic, interactive, web-based patient portals combine health information with interactive components, such as self-assessment and decision support tools, and are prescribed to patients by a physician. Internet interventions can serve to educate patients about their condition, test, and treatment options, help motivate them to change unhealthy behaviors, and offer self-care support.

Effective Internet interventions go beyond patient informing and support by aiming to engage patients in their care (see Figure 5). They do so by operating optimally along multiple dimensions. First, effective Internet interventions have *content* that is high-quality, expert-sourced, and written at an appropriate reading level. Accompanying graphics and personalized advice based on the patient’s individual needs also promote efficacy.

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Second, the intervention must have the correct *context* to promote patient retention and trust in the content. One study that assessed what features engender patient trust in these portals found that being free of advertising or commercial sponsorship, being regularly reviewed and updated by medical experts, and delivered by a trusted source were all critical indicators of trustworthiness (Kerr). Engagement and retention are also best achieved by providing convenient and ready access to both patients, their families and caregivers, as well as by having the intervention delivered, or “prescribed,” by one’s physician. Finally, the intervention should be *interactive* to effectively *engage*. It should offer ready electronic access to the provider for non-urgent questions and include support tools, additional resources, and dynamic qualities that encourage patients to return to the site.

Internet interventions can supplement verbal informing, an approach that on its own is suboptimal at best. The rushed, face-to-face nature of the episodic office visit leaves little time for verbal informing and presents communication and retention challenges. In fact, more than one-third of American patients leave their physician’s office without getting important questions answered (Woolf). Other research suggests that even when patients are informed, the process is ineffective: Studies have shown that patients, on average, recall about half of what healthcare providers tell them. Indeed, up to 45 percent of patients cannot remember the risks of surgery, 44 percent do not know the exact nature of their operation, and many are unable to answer basic questions about the procedures or services they agreed to receive (National Quality Forum). Illness and stress can further hamper patients’ ability to retain information they receive during a physician’s visit.

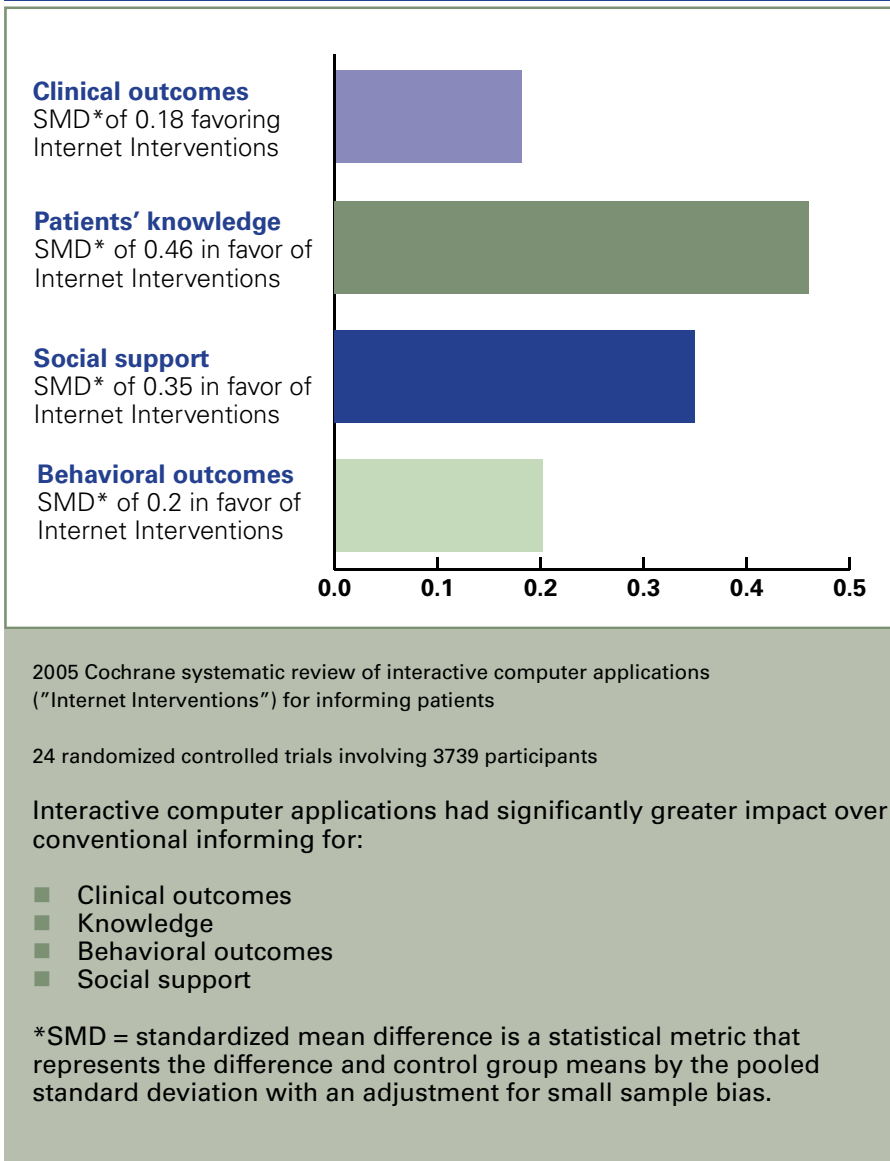
Used in conjunction with verbal

discussion, Internet interventions can be powerful tools in the informing approach. Several factors drive the impact of superior interventions. Internet interventions can contain large volumes of information but present it in small, accessible chunks augmented by simple graphics, video and audio clips, and personal stories. The information can be easily updated and tailored to individuals, according to data provided by the user on their dietary or exercise habits, for example. This increases the personal relevance and retention of information. And Internet interventions can be revisited at the user’s convenience, as information needs change, for a reminder, and to share information with family, friends, or caregivers.

Effective informing benefits patients and practices in myriad ways. Effective informing means that patients receive quality information about relevant health topics, have the ability to ask their providers questions, and get answers to those questions. These patients are more likely to be satisfied with their care, to give their physician high performance ratings, and to refer other patients to the physician.

Patient understanding and engagement also improves treatment adherence, medication safety issues, self-care performance, and outcomes. A growing body of evidence shows that patients who are well informed about their condition, test, and treatment options are more involved in their care and more likely to comply with prescribed therapies (Forkner-Dunn; Guadagnino). For example, a study of breast cancer patients who received online education and support found that they had increased confidence in their physicians and increased competence to deal with relevant information, and were more comfortable seeking information and participating in their own care (Gustafson). Other research reports that patients who are more actively involved in discussions about the management

Figure 6. Evidence of Effectiveness of Internet Interventions



Source: Murray E et al. Interactive Health Communication Applications for people with chronic disease. Cochrane Database Syst Rev 2005;4.

of their diabetes achieve better blood sugar control (Coulter), that informed patients with hypertension are more likely to reach their blood pressure goals (Roumie), and that parents who visit an educational website are more likely to discuss health topics with their children's physician and to implement this advice (Christakis).

Internet Interventions: Evidence of Superior Effectiveness

Evidence of the benefits of effective informing is clear and growing. A large Cochrane review of the impact of Internet interventions (also known as interactive health communication applications or IHCA) in particular shows similar improvements. The review of 24 randomized controlled trials found that Internet interventions have statistically significant, positive effects on clinical outcomes (Standardized Mean Difference, or SMD, 0.18 favoring Internet Interventions), patients' knowledge (SMD of 0.46 in favor of Internet Interventions), social support (SMD of 0.35 in favor of Internet Interventions), and behavioral outcomes (SMD of 0.2 in favor of Internet Interventions). (See Figure 6.) The review also found improvements in behavioral outcomes and self-efficacy. For example, patients' knowledge about their condition or treatment options may increase due to the interactive nature of the Internet intervention; the use of graphics, audio, and video; and the ability to revisit the information repeatedly. Important features of social support in Internet interventions include email access to the provider and the ability to share experiences via online support groups.

Clinical outcomes also benefit from Internet interventions. Studies of children and adults with diabetes mellitus, for instance, show that use of Internet interventions improve HcA1c and lipid levels, decrease hypoglycemic attacks, and reduce depression. Similar research suggests that children with asthma who use Internet interventions with their caregivers have less severe symptoms and fewer emergency room and acute office visits. And people with conditions such as HIV, AIDS, encopresis, and urinary incontinence also experience improved clinical outcomes after using Internet interventions (Murray).

Opportunities for Providers

Internet interventions also offer advan-

Because of their positive effects on clinical outcomes and patient satisfaction, Internet interventions provide clinicians with an advantage as the trend toward pay-for-performance and performance transparency rapidly strengthens.

tages for physicians. They enable practices to extend educational outreach beyond the clinical encounter, giving patients convenient access to health information when they need it (Woolf). These websites are “fundamentally scalable,” in that they can service large numbers of patients at minimal cost to practices, and the information can be updated easily (Christakis). And by providing comprehensive information and email access to providers, Internet interventions have the potential to streamline office practices and use less staff time (Biermann). Directing patients to an Internet intervention prior to their visit can help ease the physician’s burden of contextualizing because proactive informing provides context and anticipates patients’ questions.

Because of their positive effects on clinical outcomes and patient satisfaction, Internet interventions provide clinicians with an advantage as the trend toward pay-for-performance and performance transparency rapidly strengthens. It has been estimated that patient satisfaction may represent some 20 to 30 percent of a physician’s performance scorecard. Internet interventions increase the likelihood of satisfied patients and have the potential to therefore increase performance ratings.

Likewise, satisfied patients are less likely to sue. According to one recent study, 46 percent of settled malpractice claims with outpatient diagnostic errors involved significant patient factors, nearly half of which were related to non-adherence (Gandhi). Internet interventions have been shown to increase adherence to treatment. Patients who have received complete and comprehensive information about their condition, diagnosis, and treatment options are less likely to solely blame physicians if adverse outcomes occur (Hoffman) and are less likely to file malpractice claims.

Finally, Internet interventions give

providers a source of differentiation in the competitive practice market space. Clinicians can proactively get ahead of market trends and deliver higher quality care by engaging patients in their care through practice portal services.

Conclusion

The brief, episodic nature of physician visits practically prohibits effectively engaging patients in their care based solely on face-to-face communications. Yet optimizing the care process as well as outcomes increasingly relies on the degree and quality of patient involvement and adherence to plan.

High-quality, interactive health information in the form of Internet interventions, presents an effective and beneficial solution to this dilemma. “By introducing new e-technology formats to the growing consumer movement,” write Forkner-Dunn, et al, “the online revolution may become the engine driving the next generation of self-care, thereby allowing patients to manage their own health conveniently and proficiently.” Providers who offer Internet portals to their patients simultaneously improve customer satisfaction, service efficiency, and quality of care—a highly leveraged approach in an era of performance scorecards.

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