Session 64

Information Therapy: Prescription Information as a Reimbursable Medical Service

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INTRODUCTION

Information therapy is the prescription of the right information, to the right person, at the right time to help make a better health decision. Information therapy will both revolutionize the role of information in health care and enable the mainstream adoption of the long-promised shift to patient-centered care. Information therapy can be clinician-prescribed, system-prescribed, or consumer-prescribed. Each approach brings unique benefits to consumers and to the health organizations that serve them. Information prescribed by licensed professionals will inevitably be recognized and paid for within government and health plan reimbursement formulas. Health care organizations that systematically implement information therapy applications will gain market share, profitability and prestige over those that do not.

INFORMATION IS POWERFUL MEDICINE

Information is powerful medicine. Information can be as important to a medical decision as any blood test or physical exam. It can be as critical to good health as any medication or surgery. With reliable information, people can avoid disability and death. They can improve their own care. Without it they are vulnerable to medical mistakes, geographical treatment variations, and miscommunication.

Information is at the heart of medicine. Physicians list the advice they give their patients as the most important thing they do. Patients claim that the advice they get from physicians is the most important service they receive. Web-enabled consumers are increasingly demanding information—not just information on health plans and providers, but information on their treatment options and the outcomes they should expect from each. And yet, health technology has barely touched the way physicians communicate information to patients. Just as it has been for over 100 years, the physician almost always informs the patient verbally and from memory. The patient mishears much of the information, records little of it, and forgets most of it before arriving home. Physicians who make extra effort to enhance patient understanding are rewarded only with the knowledge that they have improved the quality of care.

Why has information been so undervalued in medicine? Three reasons stand out:

1. It has been difficult to judge information quality.
2. It has been difficult to document information delivery.
3. The therapeutic value of information has been largely unproven scientifically.

Because of advances in science and technology, those obstacles are now obsolete. Information therapy technology can now deliver and document prescription-strength medical information to the right patient at the right time and in ways that have been shown to result in better health outcomes. Implementing that technology will become a major part of hospital, clinic and health plan strategies for many years to come.

PHYSICIAN-PRESCRIBED INFORMATION THERAPY

The purest and most powerful form of information therapy occurs when a clinician personally prescribes specific information to help a particular patient better manage a diagnosed problem. Such “physician-prescribed” information prescriptions can be written by any nurse practitioner, physician assistant, dentist, or other clinician who has a professional relationship with the patient.

Physician-prescribed information, by definition, must be personalized to an individual, targeted to a “moment in care”, and prescribed by a health professional who knows the patient and his or her health problem.

Personalized

Physician-prescribed information is presented to an individual patient by name and with a message that encourages that person to review it. While health information can be found in great abundance, information directed to a specific patient is rare. Think about your own response to mail that comes addressed to “Occupant” versus mail that comes personally addressed to you. Marketing researchers have long known that the book you are most likely to open is the one entitled “All about [insert your name here]”. Personalization greatly increases the importance that a patient puts on such information and the likelihood that it will be used.

Targeted

Physician-prescribed information can be narrowly targeted to the specific “moment in care” or medical decision that the patient is facing. Narrow targeting of information both emphasizes the information that will be most important to the patient at that point in their care and avoids sending patients...
Prescribed
Personalized and targeted information has greater impact when it is prescribed by a clinician with which the patient has a clinical relationship. The doctor-patient relationship opens a special avenue of communication with the patient. Physician-prescribed information extends that relationship and expands that special communication beyond the clinic.

Clinicians can send information prescriptions to support any or all aspects of the medical care they provide. For most physicians, the motivations of quality, time, loyalty, and regained control are sufficient to justify the move toward the information therapy system—but only if it can be seamlessly added to the workflow of the practice. For all such clinicians, there is good news ahead.

While doctors can now write a URL on a prescription pad and hand it to the patient, little of information therapy’s potential can be delivered without significant technology support. Wireless solutions to prescription writing, order entry, and electronic medical records will create the infrastructure that will take physician-prescribed information therapy mainstream. Selection of an ICD9 diagnosis or other coding can automatically present the physician with a menu of potentially appropriate information prescriptions. Within seconds, the physician can select the most appropriate information prescription and send the e-mail through the Internet long before the patient gets home. Within a decade it may be hard to find a physician visit, diagnostic test, hospital admission, or other clinical encounter that does not generate an information prescription to the patient.

Information prescriptions can also be created by advice nurses, care counselors, pharmacists, or other professionals. Any time a professional health-care relationship includes an educational purpose, it can be enhanced through the use of information prescriptions.

SYSTEM-PRESCRIBED INFORMATION THERAPY
System-prescribed information therapy uses information triggers to predict that a specific person is approaching a specific “moment in care.” Targeted information is delivered to the individual in time to affect decisions and behaviors important to the success of that moment in care. In the end, system-prescribed information therapy is likely to make an even bigger difference to health care quality than physician-prescribed information therapy. Using information triggers from systems set up to support appointment scheduling, order entry, EMRs, lab test reporting, billing, or pre-authorizations; intelligent messaging systems can select the right content and package it with the right message to present it as a supportive and integrated part of health care delivery.

Examples of system-prescribed information therapy include the following:

• A visit scheduled for “knee pain” is preceded by an information prescription with home care instructions plus information on diagnostic and treatment options often encountered with knee pain.

• A scheduled MRI of the knee (CPT-73721) to evaluate a potential ACL injury with the diagnosis of effusion of lower leg joint (ICD9-719.06) automatically results in an information prescription that describes the MRI procedure and how to prepare for it.

• The report of a blood chemistry lab test is automatically delivered with an information prescription that helps the patient understand the results and how they might be used in determining the next course of treatment.

• The entry of non insulin dependent diabetes mellitus without complications (ICD9-250.00) in an electronic medical record automatically sends an information prescription appropriate to the patient’s condition and stage of care.

• The identification of BPH (benign prostatic hyperplasia) in a clinic billing system automatically sends an information prescription with bathroom tips and related information.

• Every pre-scheduled hospitalization is preceded by the delivery of a “hospitalization success guide”, customized to the patient’s condition and pre-ordered services with a clear listing of what the patient and family can do to improve the outcomes of care.

In each of these examples of system-prescribed information the same three-step process takes place:

1. Information triggers from within existing information systems recognize relevant information about a specific person. Triggers involve the use of generally accepted medical codes such as ICD9 and CPT codes or structured medical languages such as SNOMED or MeSH. Trigger systems can also be created from hospital or clinic coding systems used for entering orders for commonly prescribed procedures.
2. The triggers are used to predict a moment in care that the patient is approaching. A moment in care is any specific point in the diagnosis or treatment of a condition. Particularly important moments in care occur at transition points such as the transfer of care from a family physician to a specialist or the hospital discharge. However, many less momentous moments in care also occur. Each moment in care can be associated with key decisions, potential errors in care, and relevant patient behaviors that can improve medical outcomes.

3. An information prescription is sent to the patient with specific links to information that will help the patient understand and manage that moment in care. Of course, the overall value of information therapy depends on the quality of information that is sent. To meet the needs of information therapy, information must be considered prescription-strength. Prescription-strength information must meet each of the following seven criteria:

- Evidence based—using a balanced review of all relevant research
- Referenced—to identify both authors and sources
- Up-to-date—regularly revised to keep pace with medical advances
- Free from commercial bias—in the development and presentation of content
- Reviewed by credentialed experts—in each relevant specialty of medicine
- Decision-focused—if it doesn’t help achieve better decisions, it doesn’t help
- Consumer-friendly—and “intelligent” to support automatic prescriptions

The great advantage of system-prescribed information is the timeliness and consistency with which it can be delivered. In many cases the patient needs information in advance of a physician visit in order to contribute to clinical decisions. Information delivered automatically with every scheduling action or lab report gets the information out at the right time to help with decisions. And the fact that it can be done automatically will greatly increase the number of patients who actually receive the information.

The greatest challenges of system-prescribed information relate to the accuracy and specificity of the prescription. In much of clinical practice the medical coding is often imprecise and unreliable. Using such coding to trigger specific information prescriptions is problematic. Without a clinician to assess if the prescription is, indeed, appropriate, system-prescribed information programs will have to send broader arrays of information which may not be well-targeted to a specific moment in care. Such systems can rely on patient assessments and questionnaires to help narrow the focus to the information most useful for each person.

CONSUMER-PRESCRIBED INFORMATION THERAPY

High quality and well-timed information prescriptions from doctors, hospitals, or health plans can provide patients with most of the decision-support information they need to contribute to better treatment decisions. So, if an effective information therapy system is in place, why would patients ever need to hunt for information on their own?

Consumer demand for information and involvement in healthcare is adding a new member the provider team—the patient. This new member of the provider team brings three unique strengths to the care process: currency, value judgment, and focus. Patients who employ these strengths well can significantly improve both the quality and outcome of the care they receive.

Currency
People are often ahead of their doctors in terms of identifying health issues. Not always, but most of the time, the consumer is the first to know when something in the body starts to go wrong. Consider who is the first on the scene at an accident. Who is first to know of a headache or fever? Who knows first about a change in bowel movements? Clearly, the patient has a timeliness advantage over all other members of the provider team.

Value Judgments
Most medical decisions involve some trade-off of values. Is the risk of the procedure worth the expected benefit? Is the added convenience of a new medication worth the extra costs? No one can judge the patient’s values for each tradeoff as well as the patient.

Focus
The consumer has only one patient to consider. The motivated patient often chooses to spend hours or days (and sometimes weeks and years) researching treatment solutions for his or her condition. No other member of the provider team has such time available. The patient is the one provider who is totally dedicated to his or her own health improvement.
Recognizing these strengths as opportunities to improve their care, people are flocking to the Internet by the millions. However, looking for health information on the Internet is like hunting for wild mushrooms in the woods. If people know where to look and what to look for, or if they look with an experienced guide, they can take away some great treasures—all for free. But, if a person picks wrong, he or she can get sick or die. Consumer-prescribed information prescriptions can improve the experience immensely and make it much safer.

Consumer-prescribed information occurs when a person, without the help of a licensed professional or health care organization, reviews prescription-strength information to help make a medical decision they are facing. The three elements of right information, right person, right time, all still apply. Consumer-prescribed information includes both self-prescribed information and information that comes from family members, friends, self-help groups or other non-professional sources. To qualify as information therapy, even consumer-prescribed information must meet the seven criteria of prescription-strength information described above.

Consumer-prescribed information plays a special role in decision-support. When people find the information themselves, they become more engaged and committed to following its guidelines. When the information is offered from a respected family member or friend, or by a person that they know has come through the same illness experience with success, it has real motivational value.

The problem, of course, is that much of the health information now found by consumers or recommended by family members and friends is inaccurate, out-of-date, or medically inappropriate for the person’s medical condition. Physicians, hospitals, health plans, and other health organizations have an opportunity—and perhaps an obligation—to improve the quality of information that people use for health decisions.

As in other approaches to information therapy, the key to success in consumer-prescribed information comes in correctly identifying the correct “moment in care” that the patient is facing. By organizing information around moments in care and providing tools to help patients or their “health friends” accurately determine when they are approaching such a moment, health care providers can provide great benefit to their patients and members.

INFORMATION THERAPY DEMONSTRATIONS

While the concept of information therapy as defined and presented in this paper is relatively new, some innovative health organizations are now engaged in activities that fit the model pretty well. Three case studies in progress are presented here:

**Doctor Goodwell**

Doctor Goodwell (www.doctorgoodwell.net) is an Internet-based virtual clinic service that connects doctors with their patients outside of the traditional clinic setting. Doctor Goodwell provides office-based physicians and their work-based patients with in-depth health information, secure web messaging, and virtual visits using two-way audio and video exchanges.

Employees are able to schedule their own appointment for a “virtual” visit with their personal physician. During the visit, the physician calls up interactive health information and graphics to facilitate communication, appropriate diagnosis and patient education. Immediately following the visit, the patient receives the prescribed health information content from a central knowledgebase based on their diagnosis and treatment plan.

In addition, the secure messaging system includes a function that makes it easy for physicians to prescribe links to medical content to the patient. The links are automatically suggested by the system based on the nature of the patient’s request. The physician reviews all information links before the message is delivered.

In early implementation of the virtual clinic system, about 65% of the visits resulted in information prescriptions to relevant content.

**Palo Alto Medical Foundation**

The Palo Alto Medical Foundation is a multi-specialty group practice that began as a small clinic in 1930. It has operated as a not-for-profit organization since 1981. Consistent with its long history of innovation, PAMF is one of the first large clinics to attempt to integrate information therapy into the mainstream of its workflow and clinic operations through its PAMFOnline service.

PAMFOnline is a set of secure, Web-based health care services that provide access to health information and a secure way to communicate with PAMF physicians and staff. PAMFOnline was designed to help patients to more fully participate in matters affecting their health. Participation in PAMFOnline is voluntary.
PAMF’s initial information therapy initiative involves using the ICD9 diagnostic codes associated with patient diagnoses to automatically select relevant evidence-based medical information to distribute to patients. While PAMF physicians are involved in selecting and reviewing the links attached to each diagnosis, the specific information prescriptions are invoked by the information system. Once the patient is referred to the specifically prescribed information, he or she has access to a complete medical knowledgebase.

PAMF will be evaluating the effectiveness of information therapy as part of its ongoing assessment of PAMFOnline.

Group Health Cooperative of Puget Sound

In addition to offering deep searchable health content on their member Web site, Group Health has now begun to encourage its physicians to prescribe specific information to their patients. Ted Eytan, the lead physician for MyGroupHealth, reports that many Group Health physicians were “ready” even before the service was offered.

In phase I of the Group Health Information Therapy plan, Dr. Eytan published a “Hotlist” of recommended links for the 100 top diagnoses seen in outpatient medical centers. In the phase I “pre-e” application, the physicians pull the list off their Intranet and use a paper-based “prescription pad” to create an information prescription which is then handed to the patient. Once home, the patient then enters the information on the Web site and clicks right to the content spot prescribed by their doctor.

Because the Hotlist is connected to both ICD9 codes and problem descriptions, it is well-set for the automation planned for phase II in early 2002. At that time the prescription writing will be built into the Intranet system and the prescription delivery will be accomplished through a secure messaging and personal Web page system. Phase II will also expand the program to allow the Group Health Call Center nurses to send information prescriptions to members who call.

Future plans at Group Health call for expanding the Hotlist with more diagnoses and the top 100 medications. In addition, automated information prescriptions are planned in response to on-line appointment requests. Over time, Group Health hopes to integrate information prescriptions throughout their care system.

OUTCOME METRICS FOR INFORMATION THERAPY

While none of the three case studies presented here have yet matured to the point of having reported outcome evaluation metrics, eventual studies of information therapy will look at outcomes with the four sets of outcome metrics presented below. As studies are completed and results are known they will be posted at www.informationtherapy.org.

1. Cost Metrics
   - The cost per information prescription. It is expected that the cost of an information prescription in mainstream implementation will range from a few cents for automated prescription systems to a few dollars for highly-interactive, assessment-based prescriptions. Studies will measure how quickly pilot efforts can move toward low marginal and total costs per prescription.
   - The cost per diagnosis or episode of care with and without information prescriptions. One significant driver of information therapy will be its measured impact on the cost per DRG. Giving the patient a more informed role in medical decisions may change the treatment decision mix. Only solid evaluative research will identify the net impact on costs.

2. Quality Metrics
   - Impact on treatment selection errors. Informed patient participation in treatment decisions will theoretically lead to better decisions and a higher rating of appropriateness of care, particularly for moments of care that are well researched and have an ample evidence-base for prescription-strength information. Examples include the prescription of needed medications that would not have been prescribed without consumer suggestion or the avoidance of inappropriate medications for which the evidence shows limited benefit. The metrics used would require identification of appropriateness of care standards to compare against actual practice experience.
   - Treatment execution errors. Information prescriptions empower the patient to be his or her own quality assurance officer. If the patient knows what medication, test, or procedure he or she is getting, the patient becomes one more safety-check point in the quality system. Some hospitals have adopted the concept of “Without the patient, nothing”. That approach works well only if the patient is informed. The metrics here would be the same as those now in place for recording and reporting medical errors.
   - Malpractice claims and settlement costs. Large-scale studies over time should determine if an information therapy program has an impact on malpractice claims or settlement costs. Some
may argue that information therapy introduces a new liability for providers should they fail to prescribe information correctly. Others, however, point out that because so many malpractice claims are based on a lack of information that information therapy will likely reduce claims. Tracking the true net impact should be relatively straightforward.

3. Health Status Metrics
- Disease-specific outcome measures. In diabetes, for example, the impact of information therapy can be measured not just by the number of people getting regular foot care but also by the number of amputations per thousand diagnosed patients.
- Quality of life measures. ADL (activities of daily living) scores may well increase because of information therapy programs.

4. Improved Consumer Satisfaction
- Satisfaction with physician
- Satisfaction with hospital
- Satisfaction with health plan

E-HEALTH OPPORTUNITIES FOR INFORMATION THERAPY (AND VICE VERSA)

Information therapy should also breathe new life into many e-health business plans that have floundered without viable value propositions. The real value of e-health—beyond transaction efficiency—is its potential for improving health decisions and reducing medical errors. Information therapy can play a huge role in both. Both new dot-coms and long-established players that use the Web to deliver information therapy will find information prescriptions at the core of their value and their success.

Health companies are generally placed into categories for content, commerce, connectivity, or care, each with a different set of success factors. Information therapy contributes significant value to each:

- Content company business plans are either driven by advertising (drkoop.com) or by decision-support service objectives. In both cases, pushing the right information to the right person at the right time can greatly increase both traffic to the site and the number of successful health decisions.
- Transaction company business plans depend on the high-volume, low-cost transfer of information about every medical transaction from lab tests and medication prescriptions to service billings and surgery schedulings. Transaction companies control the information used as trigger sources for predicting which information to send to a specific patient. By embracing information therapy, transaction companies provide another major benefit from their information infrastructure—for little marginal cost.
- Commerce company business plans are dependent both on volume and on the success of targeting efforts to pitch the right product to the right person at the right time. Although specific “opt in” permission must be granted in advance, for those who do participate, information therapy provides all of the tools for adding objective, effective information along side the product offerings.
- Finally, the business plans of e-health care companies are custom made for information therapy. For plans ranging from electronic medical records and computerized order entry systems to the complete virtual clinic, the need to send the right information to the right person at the right time to support health decisions is at the central core.

THE CASE FOR THE REIMBURSEMENT OF INFORMATION PRESCRIPTIONS

There is a compelling case for Medicare, Medicaid and health plans to begin reimbursing for certain information prescriptions. With the barriers of documentation, quality assurance, and proof of therapeutic effectiveness resolved, nothing stands in the way of opening up reimbursement formulas to include information prescriptions. Physician-prescribed information should be an easy qualifier for reimbursement. Licensed professionals who prescribe evidence-based medical information to their diagnosed patients to help them better manage a relevant moment in care, should be paid—period. While the value is high, the reimbursement factor may be low, perhaps as low as a dollar or two per prescription. When handheld computer solutions for medications, physician order entry or electronic medical records are in place, the marginal cost of adding information therapy applications is quite modest.

The discussion of reimbursement for information prescriptions has only recently been introduced into the policy think tanks of Washington, DC. Because the Medicare program has often been the bellwether determinant of funding policy, if the funding case can be made there, private health plans are likely to follow. Reimbursement policy change does not happen quickly. Years of work lie ahead for defining the criteria for a reimbursable “episode of care” using information therapy. Clear quality
standards will be needed to determine what will and will not be included. In spite of these challenges, the case for reimbursement of information therapy is compelling, and the potential for a policy change in the long term, is high. Policy planners in both major political parties have expressed interest in the information therapy concept. An information therapy policy paper is expected to be published by the Progressive Policy Institute by early 2002.

CONCLUSIONS

Health care in the future will be both evidence-based and consumer centric. Information therapy has the technology and framework to bring the two together. Hospitals, physicians, and health plans that embrace information therapy will see that information prescriptions lead to better outcomes, fewer medical mistakes, and more satisfied consumers.

For health care to evolve to the evidence-based, consumer-centric level, two fundamental changes are needed:

• The role of the patient must evolve to one of a primary provider. Only then can the promise of consumer-centric health care be achieved.

• The role of information must grow from being an uncompensated, hit-or-miss, and undocumented part of the doctor-patient exchange to being recognized and technologically supported as a core and reimbursable element of medical care.

Information therapy is the revolutionary service that supports both changes. The potential is so great that by the end of the decade, information prescriptions will be part of every medical visit, every hospital admission, and every order for medications, tests, or procedures. Prescribing the right information to the right person at the right time will significantly improve the practice and outcomes of health care.

AUTHOR BIOGRAPHY

Donald Kemper is the Chairman/CEO of Healthwise, Inc., a nonprofit leader in self-care, shared decision-making, and information therapy. Healthwise handbooks and online information reach over 20 million people annually.