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Drug Adherence Throwdown: Disruptive Women Take on America's Other Drug Problem

Perspectives from
Disruptive Women in Health Care

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It has been estimated that 3 out of 4 people report that they do not take their medications as directed, resulting in hundreds of billions of dollars annually in related medical costs and an enormous number of hospital admissions and readmissions.

The reasons for this are complex and varied. This is a particularly vexing challenge for young, chronically ill patients, for people with mental health diagnoses and for the elderly who may suffer from memory impairment. Anyone on a complicated drug regimen knows how committed one must be to remain adherent.

For some, cost is an issue while for others side effects can be unpleasant, travelling can compromise the best of intentions as can the need for refrigeration when none is available. Some patients must take some drugs on an empty stomach and others on a full stomach. Some patients are simply not ready to accept they have a serious, or lifelong illness. It is complicated.

Because the implications, both clinical as well as financial, are significant, we have invited a number of our Disruptive Women bloggers, as well as some other experts in the field, to join us in a series of policy posts on this critically important issue.

Our Drug Adherence series will analyze this challenge from a number of perspectives: patients, providers, researchers. In addition, we will also offer innovative solutions.

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Founder, Disruptive Women in Health Care

Robin Strongin is an accomplished public affairs expert with more than 25 years of experience working in Washington, DC. Her areas of specialization include health care, science, technology and innovation. Robin has worked with and for Federal and state governments, regulatory agencies, Congress, think tanks, nonprofit organizations, corporations, coalitions and trade associations. Robin is currently serving on the Public Affairs Council's Senior Executive Task Force and the AcademyHealth Health Policy Communications Interest Group Advisory Committee. She has recently been appointed to the board of the Juvenile Diabetes Research Foundation (JDRF).

The Scope of the Problem

A new report, *Thinking Outside the Pillbox: A System-wide Approach to Improving Patient Medication Adherence for Chronic Disease*, issued by the New England Healthcare Institute (NEHI) found that patients who do not take their medications as prescribed pay a price in poorer health, more frequent hospitalizations and a higher risk of death.

Collectively, noncompliant patients incur up to $290 billion annually in increased medical costs–that's $290 billion in avoidable medical spending every year, according to the NEHI report.

This is not a new problem, nor is it unique to the US. In 2003, the World Health Organization (WHO) issued a landmark report entitled *Adherence to Long-Term Therapies* in which it noted:

> Adherence to therapies is a primary determinant of treatment success. Poor adherence attenuates optimum clinical benefits and therefore reduces the overall effectiveness of health systems.
>
> "Medicines will not work if you do not take them." Medicines will not be effective if patients do not follow prescribed treatment, yet in developed countries only 50% of patients who suffer from chronic diseases adhere to treatment recommendations. In developing countries, when taken together with poor access to health care, lack of appropriate diagnosis and limited access to medicines, poor adherence is threatening to render futile any effort to tackle chronic conditions, such as diabetes, depression and HIV/AIDS.
>
> This report is based on an exhaustive review of the published literature on the definitions, measurements, epidemiology, economics and interventions applied to nine chronic conditions and their risk factors. These are asthma, cancer (palliative care), depression, diabetes, epilepsy, HIV/AIDS, hypertension, tobacco smoking and tuberculosis.

In the intervening years since the WHO issued its report, adherence has become more problematic. Numerous reports highlight the ongoing challenges, which are especially critical in the mental health arena.

A study in the American Journal of Psychiatry found that close to 60% of schizophrenics who were prescribed anti-psychotic drugs did not take the medication as prescribed by their physicians. "We looked at adherence to anti-psychotic

medication because they form the backbone of treatment for schizophrenics," said Dr. Dilip Jesete, co-author of the study. "These medications are good, but only work when taken properly."

The study found that psychiatric hospitalizations were higher for people who did not take their medication as prescribed.

When schizophrenics, a disease which affects over 2 million Americans, do not take their medication, they are at risk for dying by suicide. Four out of ten people who suffer from schizophrenia attempt suicide and one in ten die by suicide.

Solutions

Despite the complexity of adherence related challenges, a number of promising solutions, innovative responses and well-researched efforts are underway. Many of these will be described in greater detail in our Drug Adherence series.

Some of these include:

- Text message alerts to remind patients
- Greater use of health care teams
- Integration of health information technology
- Creation of online and offline medication management systems, reminders
- Health e-games
- Insurance reforms
- Public awareness campaigns
- Patient education
- Mobile phone applications
- Research in gender-based barriers

We look forward to your comments and input as we shed light on this critical policy issue.

Please visit the individual blog posts at http://www.disruptivewomen.net/category/policy/drug-adherence/ to add your comments.

Adherence: A Patient Perspective

"What appears to be non-compliance from a medical perspective may actually be a form of asserting control over one's own behavior."

I've always liked this characterization of patient adherence from Peter Conrad, *The Meaning of Medication: Another Look at Compliance*. It takes into account the fact that we're dealing with **people**. What many times seems *irrational* to us as healthcare professionals, has most times been **rationalized** by the people for whom we provide care.

Human **behavior is complex**. Behaviorists describe human development as a 4-part process: physical (how we grow or age), cognitive (how we think), emotional (how we feel) and social (how we are valued). In listening to (researching) tens of thousands of patients – across therapeutic categories – over the last two decades, I've found that the following hold true:

How Patients Think: Most people know only the most superficial facts about their health. However, when presented with **unexpected, personally relevant information** many are motivated to act (e.g. adhere). Women were motivated to do annual mammograms when they were told how much "finding a lump the size of various millimeter-size pearls" equated to surviving breast cancer.

This is not to say that we all need a Ph.D. in what ails us. Judith Hibbard's work at the University of Oregon suggests that

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"controlling costs and achieving health care quality improvements require the participation of *activated* and *informed* consumers and patients". Her model focuses on patients acquiring **knowledge**, **confidence** and **skills to act**.

How Patients Feel: Fear operates to produce adherence in one patient and rapid non-persistence in another. **Trust**, on the other hand – in the healthcare system, our personal healthcare providers, and health products and services – **resonates** across audiences.

Most of us don't see or directly interact with many of the stakeholders involved in our heathcare (e.g. our governments, managed care organizations, pharmaceutical companies). Instead, we see or talk to our personal physicians, pharmacists, and health agents who provide service. **Trust in daily health interactions** is key to patient adherence to a recommended plan of action.

How Patients Are Valued: Personal and professional supports – spouses, parents, children, friends, co-workers, physicians – strongly influence our health decisions and behaviors. Where there is no or poor personal and professional support there is many times low patient adherence. On the other hand, when we feel **valued and respected as a result of our health behaviors** by those who directly care for and come into contact with us, we comply and persist with the behavior. Unfortunately, patients too frequently say they walk away from health exchanges feeling devalued or stigmatized.

How Patients Age: People that are sicker have typically developed patterns of thinking and behavior that make disease easier to deal with as part of daily life. Experience is the best teacher. In life-threatening and life-altering conditions the lessons comes fast – as does the **incorporation of health routines into daily life.** Patients benefit from **access to "people like me,"** but the access has to be practical for someone already taking on a host of new behaviors (e.g. going to the doctor, filling prescriptions, processing health claims).

A "Patient" Solution

Listening for the Problem: A JAMA study *Soliciting the Patient's Agenda* found that physicians often redirect patients' initial descriptions of their concerns ("after a mean of 23.1 seconds"). **Patients allowed to complete their statement of concerns** ("used only 6 seconds more on average than those who were redirected") consequently, had fewer late-arising concerns. Although the article did not specifically address patient adherence, one has to imagine that solving the

complaint of most concern to the patient rather than the problem the physician chose to solve would increase one's motivation to act.

A Caring Voice & Climate: Miller and Rollnick's work in Motivational Interviewing recommends a tone on the part of public health, health psychology, and medical professionals that is **nonjudgmental**, **empathetic**, and **encouraging to patients**. It allows patients to work through their ambivalence about behavior change. A 2002 Health Psychology Article examining *Motivational Interviewing in Health Promotion: It Sounds Like Something is Changing* further encourages health counselors to establish a **non-confrontational and supportive climate** in which one feels comfortable expressing both the positive and negative aspects of one's (adherence) behavior.

Maintenance Under Stress: Adopting a healthy behavior is difficult, particularly if you're a "healthcare Rookie" (someone new to implementing a health behavior change), but Hibbard's model suggest that sustaining the change under stress can be even more difficult. The stressor can be clinical (a co-morbidity), financial (job loss), lifestyle (divorce), emotional (stigma or societal pushback), health system-related (change in insurer), etc. in nature. **Laying down the treatment plan** is a first step; **having the right monitoring and follow-on systems** in place – at the moment the patent most needs prompting/encouragement– has also been shown be critical to patient success.

A take-home message from The 2003 World Health Report on Patient Adherence was that **patients need to be supported, not blamed.** *The common belief that patients are solely responsible for taking their treatment is misleading and most often reflects a misunderstanding of how other factors affect people's behavior and capacity to adhere to their treatment.*

National Consumers League – National Medication Adherence Campaign

As Robin illustrated in her post, poor medication adherence results in poor health outcomes for millions of Americans, and costs billions of dollars in increased medical costs. When three-quarters of Americans concede they don't take their prescription medications as directed, we are faced with a public health problem that demands a broad, multi-faceted response.

As the nation's oldest consumer organization, the National Consumers League has long worked to improve medication safety, patient education, and consumer education in the health community. With planning funds from the Agency for Healthcare Research and Quality (AHRQ), NCL is spearheading a first-of-its-kind national education campaign to raise consumer awareness of the importance of good medication adherence. As called for in the 2007 NCPIE report, a public-private education campaign to motivate patients to improve their medication-taking behavior should be a national health priority.

Since the campaign planning phase got under way just a little more than a year ago, we have worked around the clock to bring together a diverse and committed group of stakeholders interested in improving medication adherence. From government agencies to health care practitioner professional associations, community health plans to national health plans, pharmaceutical manufacturers to consumer advocates, the list of supporting organizations tops 100 and continues to grow.

The campaign, which NCL anticipates launching publicly in the

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Sally Greenberg's focus at NCL is on four key priority areas: fraud, child labor, LifeSmarts, and health care forums. Sally comes to NCL from Consumers Union, where she'd worked since 1997 on auto safety and legal and liability reform and to improve the legal system for consumers. Before CU, Sally worked at the Justice Department's Foreign Claims Settlement Commission, and before that, spent a decade serving as the Eastern States Civil Rights Counsel for the Anti-Defamation League, based in Boston. Sally was president of the Women's Bar Association of Massachusetts and the Women's Bar Foundation, served on several gubernatorial commissions in Massachusetts, and currently serves on several boards of directors, including those of HALT and Trillium Asset Management.

third quarter of 2010, aims to educate consumers through mass media, including many new social media tools. The depth and breadth of involvement from stakeholders will help reinforce the messages to ensure that consumers are educated, engaged, and empowered as they manage their health. The campaign has involved health care practitioners (HCP) from the start, and HCPs will play an active role in improving adherence as they engage their patients.

Because poor adherence is especially harmful to people with chronic health conditions, such as asthma and diabetes, the campaign will focus special attention on those populations. More than 45 percent of, or 133 million, Americans are affected by at least one chronic condition, and employers are seeing billions of dollars lost to chronic-condition related absenteeism. Every dollar that goes toward improving patient adherence is money well spent, ultimately resulting in long-term savings for the consumer – saving the consumer and the health system $7 in medical costs for those with diabetes, $5 in medical costs for those with high cholesterol, and $4 in medical costs for those with hypertension.

To motivate consumers to adhere to their medications, they must first understand that they play a key role in the management of their own health conditions. As consumers–and their communities– become more aware of the importance of taking medication safely and appropriately, the campaign hopes to improve behavior and positively affect health outcomes. We look forward to working with employers to help engage and empower their employees to manage their health, resulting in a healthier and more productive workforce. We are also pleased to work with health care practitioners eager to educate their patients about the importance of medication adherence. Finally, we believe this major public health problem is getting the attention it deserves.

We welcome your support and involvement as we continue to raise awareness about the issue and the many ways in which we can address it. Please contact me at sallyg@nclnet.org or 202-835-3323.

Drug Adherence: A Straightforward Personal Commitment Based On Choice

Joyce A. Cramer

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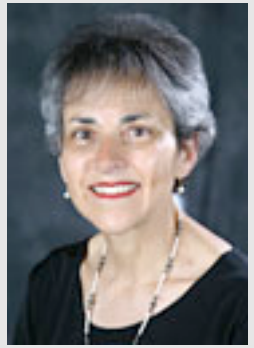

"Drugs don't work in people who don't take them" said former Surgeon General C. Everett Koop. While performing research on this topic since the 1980s, I have been continually surprised that the results are uniform: People take, on average, three-fourths of medication as prescribed[1]. This has held true across many diseases and types of medications. There seems to be no consequence so severe that everyone with that disorder takes all doses (e.g., organ transplantation, epilepsy, asthma, etc.).

One of the first studies I published included extensive neuropsychological testing. It showed that not taking all doses does NOT relate to intelligence[2]. There are numerous studies showing the ineffectiveness of health education. Many people get good scores on knowledge linking disease control/ management with medication, but do not carry-through by taking all doses.

Interviewing lots of people led me to realize that the main reason is forgetfulness (on a daily basis or during a disrupted schedule). I then developed a simple system to teach people skills on HOW to take their medication. It consists of asking the person (a) what is the best time of day to remember a dose, and (b) what daily activity can you link this to as a reminder[3]? Typical responses are the best time is in the morning (ask to set a range of time, i.e., 7-8 am), and link it to making coffee, taking the dog for a walk, etc. Only the person who is taking the medication can select the most convenient time and the personalized cue. The "Cramer Method" does work, as demonstrated in several studies.

The system works only when the person has accepted the diagnosis and need for treatment.

On the medical side, I teach doctors to ask whether the person is willing to take the medicine, then proceed to teach them how to set time and personalized cues. Explain that if the first cue does not work well, select another cue.

I often hear that someone had an exacerbation of symptoms after missing doses or discontinuing treatment. Sometimes the same person has multiple episodes until the personal lesion is learned. That's human nature. I do not look at medication adherence as a complex behavior mediated by psychological issues. Much of it is a straightforward personal commitment based on choice, coupled with acceptable tactics to do what is being asked. Diseases differ in requirements, ranging from one tablet daily for hypertension to diet, exercise and oral or insulin treatments for diabetes. People differ in their willingness to perform health-related tasks – changing over time based on other priorities in their lives[4]. Yes, people make choices for which they are responsible, both actions and inactions. The doctor can't make it happen without a willing partner.

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Drug Adherence: Using Social Cognitive Theory and a PRECEDE/ PROCEED Framework

Last term, my Program Planning for Health Behavior Change workgroup was charged with using theory to help explain a health behavior and design a targeted intervention. With several MDs in my group, we chose improving warfarin adherence to reduce risk of stroke in elderly patients with atrial fibrillation.

2.2 million Americans suffer from AF, a condition that causes a 4 to 5 fold increased risk for stroke. What is worse is that 5% of those ages 65+ have AF. Luckily, warfarin is an inexpensive, generic drug that, if taken consistently and with regular physician monitoring, can reduce the risk of stroke for AF patients. However, compliance is a problem and as a result non-compliant AF patients remain at risk for stroke.

My group utilized a PRECEDE/PROCEED framework to conduct a hypothetical needs assessment and identify the underlying causes of the problem that our resulting intervention would address. This framework provides a conceptual way of organizing multiple levels of factors that explain prescription regimen noncompliance and identify places where an intervention may be effective. Utilizing our course textbook, Health Behavior and Health Education: Theory, Research, and Practice by Glanz, Rimer, and Viswanath, we found that examining the following factors was particularly important in explaining whether one is adherent:

- **Predisposing factors** – the motivation or rationale for behavior

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and include one's attitudes, beliefs, preferences, skills
- **Reinforcing factors** – the reward or incentive for persistent behavior such as social support, modeling, peer influence
- **Enabling factors** – direct or indirect antecedents that allow motivation to be realized, including environmental and structural factors

We also used **social cognitive theory**, which focuses on the individual as a health behavior change agent, and its theoretical constructs. In reviewing the literature, we found that elderly AF patients may:

- lack the ***self-regulation*** to remember to take their medication consistently or to organize taking this particular medication among others that need to be taken throughout the day
- have a weak ***self-efficacy*** belief and feel incapable of adhering to their prescription regimen
- lack ***incentive motivation*** and not see the link between adherence and good ***outcome expectations***; if they take warfarin once or several times, they may not see an instant reward, feel different, or see that they have reduced their risk of stroke
- have ***facilitation*** difficulty in physically getting to their provider's office for the required physician monitoring

In summary, we found that adherence is an individual behavioral issue with layers of causal factors (identifiable via social cognitive theory) and surrounded and impacted by environmental factors, which can be organized using the PRECEDE/PROCEED framework. Although we designed a hypothetical intervention that addressed the predisposing, reinforcing, and enabling factors specific to warfarin compliance, these tools could also be used to examine adherence issues for other drugs.

Adherence: Working Across Our Boundaries

In the many years that I've been with the pharmaceutical industry, few issues have been both as divisive and unifying the way medication adherence has, all at the same time. It's divisive because various stakeholders in the healthcare space each own a different—and often seemingly conflicting—component of this common yet complex problem. It's unifying because not a single one of those stakeholders can solve the issue on their own. The unique opportunity this situation creates is that, to address this costly and serious challenge with the price tag of $100 billion each year, we all have to come together and work across our boundaries and individual interests.

When I talk about healthcare stakeholders, I certainly include the manufacturers, but also a whole host of other key players in the healthcare space: starting with patients, doctors and nurses, and including managed care organizations, insurance companies, employers, public health organizations, policy-makers and regulatory bodies such as the FDA or EMEA.

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Elizabeth Sozanski is the former Adherence Leader for AstraZeneca. In that role, she was responsible for building the adherence strategy and initiatives in support of 5 largest brands; had a leading role in developing adherence-related partnerships with multiple healthcare partners; and served as the main interface to the organization for adherence best practices aimed at improving appropriate care and healthcare outcomes.

As manufacturers, our hope is that patients who use our medicines benefit from their full value by using them appropriately. As an industry, we put so much effort into discovering and developing new medicines for patients—the therapeutic benefit of these medicines is clearly compromised unless an appropriate doctor-prescribed regimen is adhered to.

There are as many theories as they are people as to why patients deviate from their doctors' guidance, and choose to "prescribe" their own treatment regimen instead. I won't go into them because they have been very well covered already in this debate.

So what can a manufacturer do to address the issue? While no pharmaceutical company can single-handedly remove all of the underlying issues which drive patient adherence (in fact, none of the other healthcare stakeholders can either), there are many things we can do as an industry, and even more we can do if we partner with others in this challenging mission.

There are three key areas where we can bring particular value to this challenging issue:

1. First and foremost, we have both the ability and the obligation to understand the needs of our patients—as individuals—and not as "numbers" or a "disease." We can, and should be, helping patients in ways that are relevant to them. Through many years of research, we found that patients tend to follow certain adherence behavior patterns depending on their "healthcare personality." This personality guides their actions, and tends to hold true regardless of the type of medicine or condition it treats. There are many excellent patient support programs offered by AstraZeneca, and by our industry peers. These programs (such as In Your Corner TM or Healthy Horizons TM), which usually offer the patient a combination of personalized reminders, education and information combined with some simple rewards, help keep adherence top-of-mind. Patients who participate in these programs typically stay more adherent to their prescribed treatment, especially if the offerings are relevant and tailored to their unique "healthcare personality."

2. Second, as an industry with long-standing and important relationships with physicians, it is our job is to support them in clearly communicating the importance of therapy adherence. While the healthcare and adherence dialogue clearly belongs to the physician and their patient, there are tools that we can provide to make that interaction as strong as it can be. For example, during the starting phase (the first 4 prescriptions, or approximately 120 days), adherence drop-off is especially dramatic. A simple tool, such as SERVTM, which has been designed to work within the reality of a busy practice, can help the physician encourage their patients' adherence, starting from the first prescription.

3. Third, we need to play an active role in addressing non-adherence in the broader context of public health, through coalition-type partnerships, public education, and policy forums. Because non-adherence has a profound impact on all healthcare stakeholders, it can be a well-recognized rallying point for all of us. Here again, there are many great examples of various parties coming together for this important common cause: a pharmaceutical company and a health plan building and testing a voice-activated reminder technology together; a national pharmacy chain and a manufacturer building a customized in-pharmacy counseling program for patients; a health literacy initiative between a

pharmaceutical company and the American Academy of Family Physicians; a state working together with Medicaid and a manufacturer (Florida: A Healthy State program) on a broad health-improvement initiative including adherence.

With these examples to build on, there is no reason why we shouldn't be able to rise above our individual interests and boundaries to address non-adherence. As manufacturers, we clearly own a component of the issue—as well as of the solution. But to really make a difference in this complex challenge, we must work together across the healthcare spectrum. With that approach, as the patients benefit, so will all of us.

Medication Adherence and Medicare's Part D Prescription Drug Program

If only it were an urban legend that senior citizens in the United States were cutting their physician-prescribed pills in half or ignoring their medications altogether in order to have enough money for food and utilities, but one doesn't need academic studies to know that this kind of economically-forced non-adherence has too often been the case in our country.

After Congress passed the Medicare Modernization Act (MMA), creating the Part D prescription drug program, the Healthcare Leadership Council – an advocacy group comprised of chief executives of healthcare companies and organizations from all health sectors – literally took its show on the road. Having worked for passage of the MMA, we felt a responsibility to ensure that the new Part D program was implemented successfully and that seniors knew how to take advantage of the new benefit.

In community meetings across the country, I met with scores of elderly men and women who told me heart-wrenching stories of the hard choices they had to make between medications and other necessities, knowing they were putting their health at risk.

Has the Medicare Part D prescription drug program made a difference in drug adherence within this vulnerable population? The results are quite positive but they also show that further improvements remain necessary.

The impact of Part D on drug adherence among the elderly is unquestionable. A survey in April of this year by KRC Research

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(commissioned by *Medicare Today*, a coalition of local and national organizations we founded to provide reliable Part D information to seniors) found that three of every 10 Medicare beneficiaries reported that they are now taking medications that they had previously either skipped or rationed.

A more recent study published this week in the *Journal of the American Medical Association*, involving data collected over a three-year period from over 24,000 Medicare beneficiaries, found that 11.5 percent of beneficiaries skipped medications in 2006, after the drug benefit was introduced, compared to 14.1 percent in 2005. The study also found that 7.6% reported cutting back on spending for basic needs in 2006 to afford medications, compared to 11.1% doing so the previous year, before they had prescription drug coverage.

That's significant progress, coming in just the first year of Part D implementation.

The JAMA study also showed, however, that the sickest beneficiaries, those requiring the most prescriptions, showed no improvement in their drug adherence. That data underscores the need for further improvement in the Part D program.

It can be presumed that many of those high drug spenders fall into the so-called "donut hole", the spending gap within which Part D doesn't cover prescription costs. Health reform bills working their way through Congress right now include provisions to cut in half those "donut hole" out-of-pocket costs. This would be a welcome change and one that presumably would strengthen drug adherence among less-healthy Medicare beneficiaries.

Focus needs to be given, as well, to the approximately two million Medicare beneficiaries who are eligible for low-income subsidies but are not enrolled in the prescription drug benefit program. Not only is intense community outreach necessary to help enroll these beneficiaries, but Congress should also take a look at the asset tests that may be keeping many economically-vulnerable seniors from the benefits they need.

We're moving closer to the day in which economics ceases to be a barrier to drug adherence among the elderly, but there is still work to be done.

Got Meds: Drug Adherence for Young People with Chronic Medical Conditions

If medication adherence is a problem for adults, consider how difficult it is for young people with chronic medical conditions.

Alternate flavorings, formulations, and suspensions can help the medicine go down in children. But what is the solution when taste is not the problem? One approach we need to take is to put the young person center and first. Talking past the child to the parents is a practice that continues today and even with many young adults patients. If we want young people to succeed in self-medication management, they must be the drivers of their care.

Child-centered care:

Psychoeducation: As soon as the child is able to participate, he needs to be educated about his condition and medication regimen so he understands what his happening to his body. Participating in the decision-making process, e.g., whether to take the morning medicine after brushing teeth or at breakfast, protects the child's autonomy and sense of control.

Contracts help in getting the young person to take ownership, and patient records are an age-old but effective method of monitoring adherence. Children can check boxes on printed forms, manually or computerized; parents can help by incentivizing adherence with tokens or rewards. Encouraging the child to share the record in the next medical visit further

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When Dr. Bhagat's daughter became critically ill at the age of 8 years, she had to withdraw from a medical fellowship at the Armed Forces Institutes of Pathology not to care for her child, but to manage her child's health care. In spite of having preferential care from her pediatric group, prime health insurance, and medical training, she went on to experience a health care nightmare. Dr. Bhagat felt she needed to understand the health care system from the outside, so she decided to study health policy and pursued a Masters in Public Health at the George Washington University School of Public Health and Health Services. Dr. Bhagat received her medical degree from the University of Bangalore and completed her residency in pathology and laboratory medicine at the Georgetown University Medical Center.

increases his autonomy – a critical issue when one loses the sense of control over one's body. Physician follow-up is critical to promoting adherence, e.g., counting pills, checking records.

Communication skills and understanding the young person's perspective are key ingredients to building trust. A non-judgmental attitude along with a willingness to negotiate and temporarily modify medications can help a young person understand the need to adhere to a regimen.

Problems may surface when the child enters adolescence and considers engaging in risk-taking behaviors. This is also the time to foster health self-management and start the transition process to adult-oriented health care. As the teen matures, he must be educated and encouraged to learn about his condition and management. The physician should work with the family to develop a step-wise approach to increase responsibility, e.g., first succeed at level 1 for x months before moving up to level to 2. For example:

1. Monitor patient-recorded adherence chart
2. Make doctor's appointments and record on chart (physician visits are associated with adherence)
3. Order prescriptions and record on chart
4. Fill medication trays

Of course, parent buy-in is critical. They need to be educated about the condition, medication, side-effects, costs, and they should be given a written strategy to manage medications. In addition, a school-based team approach may be needed. Parents' personal and cultural beliefs may impact their management. Physicians need to appraise parents and keep communication channels open since medicating young people raises several concerns:

1. The lack of studies done in children and prescribing drugs off-label,
2. Hormonal changes in puberty effect on drug levels and health, and
3. Problems when titrating and weaning medications.

As children grow up and become self-sufficient, parents may need help in letting go and learning to taking risks with their child.

A simple technique that improves adherence is texting. Young people prefer this mode of communication: it is non-intrusive and short and sweet. We used to prompt our daughter to take her medications by telling her in person or calling her by phone. When I asked my daughter to text us after taking each medication dose, we witnessed a 95% improvement in self-managed adherence. Plus, texting takes the nagging voice out of the equation, and one thinks twice before sending something negative in writing.

Young people with chronic conditions often feel isolated and say their healthy peers do not understand them. Group psychoeducation or mentorship improves self-management and adherence, and it is financially smart. A promising emerging practice is the use of transition coordinators and clinics to help young people with chronic medical conditions learn how to manage their own health and health care.

New technologies, e.g., health games, should be fast-forwarded to move them into implementation stage to help these young people gain control over medication adherence now. These young people have much to gain by being in good health now and as they grow into adulthood and live their entire lives with a chronic condition. Equally, they have much to lose from poor health status and its repercussions on their growth, development, education, social life, and quality of life. A couple of projects in the making that I like:

1. Embeddable medication management device in teddy bears or backpacks for kids with cystic fibrosis. Provides alerts to child and caregivers.
2. PHR application for teens to share and negotiate health care status and needs with providers. Uses real time data: moods, music, photos.

These ideas and strategies are not rocket science. They require a concerted commitment of time and energy, reimbursement, and financial investment. Most of all, they require an attitude shift to make our young people with chronic medical conditions and disabilities a national priority. These children and young adults are growing up quickly…

What are we waiting for?

Medication Adherence Requires a Team-based Approach

As our population ages the importance of one's ability to remain independent as long as possible will become even more important than it is today. One of the leading causes for the placement of a frail adult in a nursing home is due to non-adherence to medication regimes. In fact, 10 to 25 percent of hospital and nursing home admissions annually are because of an individual's lack of adherence.

The American Academy of Nursing working with the Agency for Healthcare Research and Quality has published practice guidelines for nurses working with the older adults in the community on the management of their medication. There are many risk factors that affect the individual's adherence from physical ability to depression and beyond.

We know that nursing interventions and evidenced based transitional care innovations where an advanced practice nurse leads an interdisciplinary team can help the patient and their caregivers prevent non-intentional and/or intentional non-adherence of medications.

Both patient and financial outcomes are well served by these interventions that can help prevent costly nursing homes stays, hospitalizations, emergency room visits and improve the quality of life for patients and their families. Knowledge, understanding and support for these interventions should not be limited to any one profession regardless of the individual professional who actual delivers the specific service.

Pat Ford Roegner
CEO,
American Academy of Nursing

Pat combines her clinical nursing experiences with community organizing training to advocate for common sense health care. She joined AAN from the American Institute for Medical and Biological Engineering (AIMBE), where she was Executive Director. Pat is a Board member of the National Health Council and an Advisory Board member for the National Partnership to Prevent Chronic Disease. She was a founding member of the National Health Policy Council and co-founder of the Nightingale Policy Group. She was inducted as an AAN Fellow in 1998. Pat holds a Master's Degree in Social Work and Public Policy (and the School's 1995 Distinguished Alumni Award) from the University of Pennsylvania, a Bachelor's Degree in Public Policy from West Chester State University and an Associate's Degree in Nursing Science from Gwynedd Mercy College.

Patient and family education remains a critical factor in the complex process of medication management which has many phases and activities. More research is needed for specific interventions that work in self-management. A small amount of financial investment in the assessment and monitoring of individuals with multiple medication regimens seems like a wise investment and one that could all health professional along the way as they provide the individual with the right care at the right time.

Tips for Consumers When Taking a Drug

"Set daily routines to take medication. It can be helpful to connect taking the medication with normal, daily activities such as eating meals or going to bed. You can also keep backup supplies of your medication at your workplace or in your briefcase or purse.

"Keep medications where you'll notice them. For a medication that should be taken with food, place that medication on the dinner table or TV tray, or wherever you eat on a regular basis. If there are medications you need to take in the morning, put those medications in your bathroom, next to your toothbrush or your deodorant, or something else that you use as part of your morning routine.

"Use daily dosing containers. These are available at most pharmacies and allow you to keep medications in compartments that are labeled with the days of the week and various dosage frequencies.

"Keep a written or computerized schedule. This can cover the medications you take, how often you take them, and any special directions. Thanks to modern technology, there are a number of devices that have been designed to help patients adhere to a prescribed medication schedule. These include medication reminder pagers and wristwatches, automatic pill dispensers, and even voice-command medication managers. Ask your pharmacist for suggestions as to which particular devices may be helpful for you. FDA offers a form that can be printed out and used for listing all of your medications: www.fda.gov/Drugs/ResourcesForYou/ucm079489.htm"

From "Are You Taking Medication As Prescribed?" U.S. Food and Drug Administration Consumer Update, 2009. http://www.fda.gov/ForConsumers/ConsumerUpdates/ucm164616.htm

A healthcare and medication organizer that could help medication adherence

For many years I was a caregiver and advocate for my family and friends. I discovered that taking their medications correctly was one of the main problems. The struggle occurred mostly because they were often taking multiple medications prescribed by numerous physicians, and using various pharmacies to fill their prescriptions.

This resulted in either missing medications, or taking them incorrectly, to simply becoming frustrated and not taking them at all. This was especially true for my mother who was on 16 prescription and 6 over-the-counter medications when I decided to design a medication chart to assist her. That developed into a healthcare and medication system, easy-to-use spiral notebook. This can be seen on www.mymedmanager.com.

Medications can be very beneficial, but to get the most benefit, they must be taken properly. Following instructions from the prescribing physician is extremely important, but reading and understanding the warning labels placed by the manufacturer is just as important.

For example, many people think if the warning label says, “take with food,” it is to prevent getting an “upset stomach.” Therefore, many will ignore that warning label and take it on an empty stomach because they believe they have stomachs “made of steel.” What they may not realize is, in many cases, food helps to increase the absorption of the medication. There are

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numerous examples of this type of confusion.

My experience with working with individuals has shown me that when using a tool such as the *my*medmanager medication chart, the simple act of filling out the form after reading the instructions carefully on the bottle and warning labels affixed can make a huge difference in their adherence.

The next important step is for the patient to take their medication chart to all their physicians. Ask them to review their meds and make a copy for their files. Someday we will be able to retrieve things electronically, but for now, we must rely on the patient to know what they are taking and why.

Having the medication chart creates a team among the patient, the physician, and the pharmacist. My mother always took her chart with her to the pharmacy before purchasing over-the-counter medications, and asked for advice.

In my opinion, pharmacists have the even more knowledge about medications than the prescribing physician because they deal with meds all day long; plus most pharmacies have the software programs that can check prescription drugs, including over-the-counter medications, herbals, etc., quickly to assist the pharmacist. Their time is valuable, and I suggest we use their brains and not just their hands for counting out pills.

So, the best advice I can give to all readers of this blog is to make a complete list of your medications, indicate if you are allergic to any meds or foods, a list of who to contact in case of an emergency, and your insurance information. Keep a copy at home and one in your wallet. The life you save may be your own.

Improving Adherence with the Help of Pharmacies

Poor medication adherence affects all of us in healthcare — it's a problem that our entire industry is trying to tackle. By many estimates, more than 50% of patients aren't taking their medications as prescribed. And that's a real problem: it's adding $177 billion in additional healthcare costs and contributing to sicker patients. Reports associate lack of adherence with 10% of hospital visits and 40% of nursing home admissions.

Stacey Irving
Director, Channel Marketing, McKesson Patient Relationship Solutions

At McKesson, we're trying a new approach. We've partnered with pharmaceutical manufacturers to sponsor programs that get community pharmacists involved in promoting medication adherence. Independent and small-chain pharmacies, including McKesson's chain of Health Mart pharmacies, have a reputation for building strong relationships with their customers and delivering excellent service. By getting pharmacists to spend time counseling patients about their medications, we're helping patients become more informed, more confident, and more motivated to adhere to their medication regimens.

In one of our first programs, the Pharmacy Intervention Program, we've trained hundreds of pharmacies in motivational interviewing and other key health behavior change techniques — asking patients open-ended questions and having a true discussion about the patient's knowledge, feelings, beliefs, goals and expectations. This patient-centered approach to counseling helps pharmacists be as effective as possible in providing education and support to patients.

Here's how it works: when patients come to pick up their prescription for one of the sponsored medications, the pharmacy's computer system alerts the pharmacist or pharmacy technician that the prescription is eligible for counseling. Before the patient leaves the pharmacy, a pharmacist begins a conversation with him or her about the medication and

provides the patient with literature to take home. Pharmacists are reimbursed financially for the 5 minute counseling time — something they ordinarily do for free — further encouraging them to take the time to promote patient adherence.

We're already seeing incredible results from the program. In our pilot program this summer for two products, our pharmacists achieved a 24% increase in adherence (the number of patients returning for refills) for a smoking cessation therapy medication, and an average 38 % increase in adherence rates for a COPD medication. These are mind-blowing results, and the manufacturers with whom we're working have taken notice. We're all excited about the impact of this program and the results that community pharmacies may be able to achieve in driving medication adherence.

So many times in our healthcare system, a patient's different care providers work in isolation to promote better outcomes. But programs like the one we've introduced at McKesson suggest that more collaboration and coordination — reinforcing common messages about conditions and medications from the physician to the pharmacy counter — can make a huge difference. We're also seeing the real difference that strong relationships and quality, patient-centered discussions can have on a patient's understanding of and loyalty to a therapy. These are things to keep in mind as we ponder how to address this very large issue our healthcare system faces with medication adherence.

Just a Spoonful of Sugar: How Healthy Gaming Can Support Drug Adherence

I've always been someone who (pretty much) does what I'm told. When my parents or a doctor told me "Take your medicine", I complied. However, I remember a number of years ago when I was taking an antibiotic for a bad kidney infection; I started to feel better and I wondered why I should continue to take the drug. It wasn't until someone explained to me that by not taking all the medication, or even skipping a few pills, the bacteria-causing infection could become resistant to future antibiotic treatment – they'd be bigger, "badder", bacteria. This tidbit of information made perfect sense to me and I'm pleased to report that today, I take all my medications as prescribed, even when I might not have any symptoms.

Based on my personal experiences, I was very surprised to learn what an extreme problem drug adherence is to the health care system. It appears that many, many people are not listening to their health care professionals about taking their medicine as they should.

Before looking at possible solutions to this national epidemic, let's identify a few reasons patients don't take, or sometimes, even fill, their prescriptions. One common reason is a lack of understanding about the disease or diagnosis for which the prescription was written. Other reasons may be concerns about the drug's effectiveness, fears related to medical side-effects, lack of belief that they can control the disease, or like me with the antibiotic, they stop taking the medication because they are

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feeling better and don't realize the side effects of not taking all of the prescription. It seems to me that many of these reasons for non-adherence can be addressed if people were provided with more information about both their medical conditions and how their medications can be of benefit.

One possible emerging solution to this information/education problem is the application of healthy games – multimedia experiences that are fun and deliver health benefits. Healthy games hold the potential for many benefits, including improving health literacy, physical fitness, cognitive fitness, condition management and motivating behavior change (like increasing the likelihood of drug adherence).

iConecto, a company working to empower personal health and organizational performance though healthy games, gaming technologies and social media, has collected the largest database of healthy games for consumers and professionals. In addition, iConecto is tracking the evidence and experience of the benefits of these games. Currently, there are over 35 documented studies which show that well-designed games can help engage and empower consumers health behaviors leading to higher treatment regime adherence, better overall health, and more clarity in communication with others about their conditions. These clinical studies have focused on a variety of areas, including cancer, asthma, diabetes, cystic fibrosis, exercise/weight loss and brain games. This blog post will focus on a few examples related to improving drug adherence through the use of healthy games.

One of the more well-known healthy games is "Re-Mission", developed by Hope Labs, a first-person shooter game where players shoot and kill cancer cells while learning about the efficacy of different forms of treatment. According to an August 2008 article in the journal Pediatrics, results from a randomized, controlled study found that playing Re-Mission improved adolescent and young adult cancer patients' cancer-related knowledge, self-efficacy and adherence to their prescribed cancer treatment plan. In a "Re-Mission" study conducted by the University Medical Center Utrecht in the Netherlands, one group of cancer patient played "Re-Mission" while the other (control) group played "Indiana Jones and the Emperor's Tomb" – a strictly entertainment game with a similar design and interface to "Re-Mission". This study, which included 375 male and female cancer patients aged 13 – 29, showed that those patients playing "Re-Mission" had higher drug adherence to both antibiotics and standard chemotherapy drugs. The assumption made in the study is that by playing "Re-mission", the patients learned more about their disease and how they could control it through medication and chemotherapy.

Similarly, two asthma-related multi-media games have demonstrated increased knowledge of asthma and decreased asthma symptom days (perhaps from better adherence to daily doses of inhaled corticosteroids). Games designed around diabetes (Packy and Marlon, Escape from Diab and Nanoswarm) have shown, or are in clinical trials to show, improved self-efficacy and self-management. In the Packy and Marlon study, the treatment group who played this game had a 77-percent decrease in diabetes and emergency and urgent care clinical visits. Another approach to gaming for kids with diabetes is Bayer's Didget, and its precursor Glucoboy. These are two blood glucose meters designed for kids with diabetes. They interface with the Nintendo DS and reward children with diabetes if they measure and track their blood sugar levels. Blood sugar levels in the correct range will unlock fun games on the Nintendo DS. Initial evidence has shown that kids with diabetes are much more likely to measure their blood glucose levels with this innovative meter. Didget also connects users to an online community to add the benefits of social networking to good health behavior motivation. Bayer's Didget is not yet available in the U.S. but more information is available on www.bayerdidget.com.

If we consider exercise a health prescription (and there are plenty of people not adhering to that prescription), there are many examples of exergames, like the Wii Fit and Dance, Dance, Revolution, that have shown when exercise is made "fun", people show a greater physical exertion rate and greater long, term exercise program adherence. Games have also been shown to improve overall healthy behaviors – for instance improving eating habits, enabling smoking cessation and reducing stress.

Finally, when it comes to medication, you may have heard that "Laughter is the best medicine!" and I agree wholeheartedly that having fun is key to our physical, mental and emotional well being. It serves to reason then, that since games are fun, engaging and educational – they can be a great approach to help us adhere to the best medicine of all.

Medication Adherence: Bring on the "Carrots." Hold the "Sticks"

My initial enthusiasm for blogging on the subject of adherence policy "carrots and sticks" faded the more I contemplated the disputes that would arise by suggesting "sticks," so mostly I'll – pardon the pun – "stick" to "carrots."

In recent weeks these blog pages have been filled with ways to support patients: reviewing insights about human behavior, the young, the old, reminder systems, games and team care. In fact, this series could have continued all month and we'd not have exhausted the ways in which patients are supported, encouraged and cajoled to be adherent.

Yes, we've dispensed plenty of sugar to make the medicine go down, but we've not proposed any "sticks" in the event it does not. Let's face it; we're not ready for the outrage in the *public policy* world if we seriously suggested that patients somehow should be held accountable.

In the *private sector*, some accountability-style policies exist (though not to my knowledge regarding medicines). For example, one major company warns employees that if they have an automobile accident requiring hospitalization and committed a moving violation or failed to wear a seat belt, they'll be responsible for paying an additional $1,000 deductible. It's a policy that requests responsible behavior in return for a benefit. I don't sense that we're ready for that same kind of "tough love" talk with patients. Not yet.

Glenna Crooks,
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Glenna Crooks solves some of the toughest health care problems of our times by distilling chaos and complexity into recognizable and easily digestible, action-oriented insights. Her clients, businesses and governments around the world, have used her Centricity Principle™ approach to create successful organizational, national and global transformational strategies. Her work is based on a professional history in senior government positions as a Reagan appointee, lobbyist and professional society and bio-pharmaceutical company executive. She served on the Bill and Melinda Gates Foundation Pediatric Dengue Vaccine Initiative Board of Scientific Councilors and was a member of the Institute of Medicine committee to advise the Department of Defense on bioterrorism countermeasures.

I liked Joyce Cramer's notion of the "patient as willing partner" and wonder if we, as patients, sit at one side of the partnership table, what does "the other side" offer us?

In fact, it offers us a lot in the way of benefits, opportunities and "carrots" regarding our medication needs.

- Availability. More medications are available today than ever before, brought to us by public funding and policies that underwrite the cost of basic biomedical research, science education and advanced graduate training. Public policies also provide intellectual property protection to those who successfully innovate to produce new medicine solutions and then – after a time – allow that intellectual property to be used by others to produce cheaper, generic copies of those once-innovative products.
- Assurances. Medications are studied, reviewed and regulated virtually continuously, by regulatory agencies and major health care systems to assure safety, effectiveness and appropriate use. We can report side effects and are encouraged to do so. Those data are monitored and used to further improve pharmaceutical care.
- Accessibility. Medications are more accessible than ever. There is a pharmacy – on average – at every square mile in the US, each one staffed by experts in the use of medications and the management of complex combinations of multiple products for those of us with multiple chronic conditions. These experts can generally tell "in a heart beat" if the side effect we suspect is the medication or the way we're taking it. For those locations where the "on average" does not apply, mail order pharmacies fill the gap.
- Affordability. Medications are more affordable than ever. The range of generic and therapeutic substitution options allow clinicians and patients to consider the cost of medicines and to pick affordable choices for the vast majority of conditions treated today. Public and private sector coverage for medicines has never been better and every company has a patient assistance program for those who do not have coverage or cannot otherwise afford the medications.
- Alternatives. In this chronic disease epidemic era a large share of the medications we take are intended to treat conditions that could have been prevented. Public policies have invested in understanding the drivers of preventable illness and educating us on everything from nutrition and exercise to stress management and back-injury prevention. Surely not everyone, but many people can practice the alternatives if they choose.
- Accountability. Those who develop, manufacture, prescribe and dispense medications are held accountable for their mistakes. A company that misrepresents the safety, efficacy or indications for their product is subject to legal sanctions and litigation. Clinicians who inappropriately prescribe or pharmacists who inappropriately dispense are subjected to similar consequences. Preventable errors in hospitals are reported and related care is not reimbursed.

Each of these is important and as patients we'd want nothing less. Can we legitimately ask for more? In some cases, yes.

Those with multiple or serious chronic conditions requiring some of the newest biotechnology solutions face great financial burdens. They can legitimately ask for relief. The same is true for people who suffer from cancer and some rare diseases with very expensive therapies. Then, there are those with currently incurable conditions; they can legitimately ask – if not for a cure – then at least for a treatment.

In return for what we have been given, can something be asked of us as patients? I'd like to think so, but I know of none that would gain traction in today's debates. Are we ready to suggest that the non-adherent hypertensive patient be charged more for heart attack or stroke care? I don't think so.

Until we are, we may as well ramp up the "carrots," so many of which have appeared in these pages, stop the handwringing about the cost of non-adherence and haul out our collective checkbooks.

Drug Adherence Tools That Meet Patients Where They Are

The tools are coming! The tools are coming! For a while now, tools to manage drug adherence have been developed, many designed to enable the patient to self-manage in the context of and in collaboration with the health care system from a specifically designed device or heavy application. Patient adoption, however, has been slow and the vision for self-management of drug adherence not yet reality. But recently from the budding Health 2.0 space, we are seeing tools built on more accessible web and mobile platforms that allow patients to manage when and where they want to with their mobile device (e.g. iPhone, Blackberry, cell phone). So, in much the same way many people's lives have changed as a result of being able to use Facebook or Twitter, or read the Washington Post from their phones on the bus or out at lunch, patients who have previously required proximity to their home device or desktop to log medications taken can now not only track on their phone what they take from their pill box, but also take advantage of glow cap or smart label technologies that can technically interact with a phone-based mobile application.

It was one thing when the Brazilian government was sending text messages to remind women to take their birth control pills (which, by the way, has been highly effective), but we are in a new age of both passive and active patient engagement with mobile platforms. There are iPhone accessible apps like Polka and TheCarrot.com that enable patients to schedule and track their medications taken along with a number of other health topics including sleep, exercise and mood, among others.

Julie Murchinson
Executive Director,
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Julie Murchinson has over 15 years of experience in the healthcare industry assisting healthcare organizations with information technology (IT) strategy, service operations, business plan development and change management for health information technology adoption. Ms. Murchinson's unique approach addresses cross-industry interests in the potential for health information technology and consumer-centric strategies to prepare healthcare delivery for the reality of personalized health care. Her work has pioneered industry-leading health IT readiness methodologies, funding and special-interest collaborations, and perspectives on privacy, security, and consumer rights, all resulting in organization-specific and collaborative strategies that are moving health care delivery and policy toward an interoperable, informative and consumer-centric direction.

Medic8Manager provides an iPhone solution that goes a few steps deeper on drug adherence for managing scheduled medications with reminder functionality, refill tracking, missed dose alerts, as-needed meds and discontinued medications. A similar application in development from Informediq even uses the tagline, “enabling healthcare anywhere”. While some products are typically used solely by patients without involvement required from a physician or other caregiver, we are starting to see more user-friendly tools that originate from the physician-patient care process, while allowing for more consumer-friendly adherence tracking, a good example of which we are seeing from the new AdhereTx product. The next step in innovation can be seen from eMedMobile which facilitates a phone working with “smart labels” on prescription medication bottles that store drug data and send alerts to caregivers when a drug is missed.

What mobile drug adherence applications cannot do is change the character of the person using their phone for this purpose.

- Will we choose to tweet about our day, check the latest scores AND log our Lipitor on our phone?
- Will we enter all of the drugs we take and their respective schedules into one of these applications or will we demand that that information be automatically downloaded from our doctor or pharmacy as part of the electronic prescribing process?
- Will we be more inclined to use these tools if we are doing so in tight coordination with our physician?

A growing number of technology companies are betting on the fact that mobility will enable flexibility and meet the patient where they are, providing enough value to help them change their drug adherence behavior to some extent. We are even seeing some products go the next level to provide incentives to patients like Health Honors, which uses a points-reward system that can be used on health-related awards like fitness equipment, co-payment discounts and other financial benefits. We, the broad “we”, are hopeful if not excited about the prospects for these tools to have a significant impact on adherence once and for all. Although time will tell, innovation in this area is both notable and promising.

Five Opportunities for Our Health System to Improve

Janet Wright
Senior Vice President, Science & Quality, American College of Cardiology

If the Disruptive Women series on medication adherence has shown anything, it's that there is a nearly endless number of potential solutions to address the nearly endless number of reasons patients and their prescribed medications do not "stick.". Over decades of practice in cardiology, I had a first hand view of the challenges patients face in adherence – inability to afford the prescription to incomplete understanding of a med's value or benefit to overestimating the risk to unclear directions or complex instructions on how and when to take the drugs..

Now, in a staff role at the American College of Cardiology, I join others in the search for solutions to help other cardiologists and health care professionals improve adherence to complicated medication regimens. Successful medication adherence is not a failure on the part of the patient to take their medication, but rather a failure on the part of the health system – including patients, their providers, the reimbursement structure, the insurance companies, etc. – to make it easy and worthwhile for the patient to take his or her medicines..

In July a group of key stakeholders met to brainstorm potential solutions to improve medication adherence. The sponsoring groups represented the major players in improving medication adherence – the drug stores (National Association of Chain Drug Stores), the drugs (PhRMA, GlaxoSmithKline), the patient (National Consumers League) and the ACC representing the physician joined the coalition this fall. In addition to these groups, there were about 40 leaders in the field who shared their wisdom. With the knowledge gained from the discussion in July and in the context of the proposals being considered by Congress, the group is formally recommending five solutions that will improve medication adherence:

Quality Improvement Strategies. Many of the Congressional proposals being considered focus on how to improve quality in the health care system. It is imperative that any national quality improvement effort explicitly acknowledge and address medication adherence as one of its aims.

Care Coordination. Many of the proposals being discussed also include methods to improve care coordination. To improve medication adherence, any care coordination plan must include one often overlooked person – the patient. By having open discussions with our patients about the importance and rationale of each medication prescribed and allowing patients to ask questions and give feedback, we increase the chances of desired outcomes all around. .

Use of Health Information Technology (IT). With the passage of the health IT provisions in the stimulus bill, the number of offices and hospitals using technology is likely to increase. We must demand that health IT have the ability to improve the flow of medication information between patients and their physicians and identify gaps in patients' medication use. A crucial component of that, as mentioned by Julie Murchinson in her post, will be using technology to engage patients in the management of their medications.

Patient and Provider Education and Engagement. The fourth recommendation addresses physicians helping patients to help themselves. As patients understand their conditions and the benefit of meds in managing those conditions, adherence increases. It's up to providers to make this happen. If they don't understand, there's no hope that 6 months, a year, two years out they'll still be taking the medications they need to live active and healthy lives.

Health Services Research. More research on medication adherence is needed to understand what we know and what we only think we know. By studying under-researched areas in medication adherence, we can begin to close the research gaps and better understand what methods work best for improving adherence and improving clinical outcomes.

Successful patient medication adherence is not just about the patient taking his or her medication – it's about the health system working together to allow the conditions to exist to enable the patient to take his or her medication. The time has never been better to implement the solutions explored during this series.

Payment Reform: A System-wide Solution to Medication Adherence

Valerie Fleishman
Executive Director,
New England Healthcare Institute

Patient adherence represents a rare "win-win" in health care, so it's no surprise that all sectors have been busy seeking potential solutions. Technology companies have developed reminder gadgets, employers have redesigned benefit plans to remove cost barriers to chronic disease medications, pharmaceutical companies have developed combination drugs to simplify regimens, and providers have begun implementing new patient education and counseling techniques. However, efforts to date have remained largely sector specific and silo-ed. An earlier post by Janet Wright correctly pointed out that poor adherence is not the fault of patients, but rather the fault of the entire health care system. Ideally, we need to move beyond silo-ed efforts and develop a system-wide approach to the problem.

Recognizing that, the New England Healthcare Institute (NEHI) launched a multi-stakeholder initiative earlier this year to identify system-wide solutions to poor adherence. Several of these solutions have been mentioned in this series such as improved care coordination and the use of health information technology. However, I would like to highlight a fundamental system-wide change that has not yet been discussed in great detail, and was one of the critical findings from NEHI's multi-sector expert roundtable and issue brief: payment reform.

It is important to keep in mind that patient medication adherence is ultimately a quality issue. As NEHI's research shows, the link between medication adherence and improved health outcomes is clear. Studies of chronic disease patients have shown that adherent patients have significantly lower hospitalization rates than nonadherent patients. Unfortunately, the current payment model is not designed to reward providers for patient outcomes – of which medication adherence may qualify as either a means toward that end or an endpoint itself. Either way, using payment reform to move away from

rewarding volume of services and towards rewarding good health outcomes would go a long way to improving medication adherence and patient outcomes.

Performance-based reimbursements, global service payments, and Accountable Care Organizations are all being discussed as ways to reform our payment and delivery system. Performance-based reimbursements would reward providers for helping patients achieve measurable, positive health outcomes. Global service payments would give providers a lump sum to manage a group of patients as they see fit – with the expectation that the payment is used to achieve the best possible outcomes. Accountable Care Organizations are collaboratives within which a hospital, primary care physicians, specialists and other providers accept shared responsibility for the cost and quality of the care provided to a group of patients.

With the ultimate goal of better patient outcomes, all three of these models could provide the needed incentives and resources for providers to invest in interventions that would help them monitor and improve adherence. For example:

- Providers would have incentives to review and act on patient adherence data such as claims or pharmacy records, which could be used to identify non-adherent patients so that providers could intervene as appropriate.
- Physician practices would have additional resources needed to invest in longer visits with patients. Moving beyond the 15 minute model would allow physicians and other providers within the practice to engage in activities such as medication reconciliation, motivational interviewing and patient education.
- Payment reform to promote adherence and improved health outcomes could be extended directly to non-physicians as well. We have an enormously valuable and untapped resource in our community pharmacists, and yet they are not reimbursed for patient medication counseling beyond limited medication therapy management programs. Creating the appropriate reimbursement incentives could encourage community pharmacists to provide additional services and to work collaboratively with physician practices around medication reconciliation and adherence.
- Clinical pharmacists could be hired by physicians to assist their practices with medication related needs. Given the skill set that clinical pharmacists have in pharmacology and medication use, they could be utilized on a regular basis to care for patients struggling with complex medication regimens.

- Providers would have incentives to better coordinate patient care, particularly during times of care transitions such as hospitalizations. Under an Accountable Care Organization model, providers would be accountable for ensuring that medication lists are reconciled before patients leave the hospital, that patients understand post-discharge care instructions and that the appropriate follow-up is made to ensure that patients have filled their prescriptions and are educated about taking their medicines appropriately.

Payment reform is an essential first step in taking a system-wide approach to medication adherence. It is critical that we align incentives to focus on and reward better patient outcomes. Without the appropriate payment incentives, it will be exceedingly difficult, if not impossible, for our health care providers to make any meaningful dent in the widespread problem of poor adherence.

Why Drug Adherence?

"Medication adherence, or taking medications correctly, is generally defined as the extent to which patients take medication as prescribed by their doctors. This involves factors such as getting prescriptions filled, remembering to take medication on time, and understanding the directions.

"Common barriers to medication adherence include

* the inability to pay for medications
* disbelief that the treatment is necessary or helping
* difficulty keeping up with multiple medications and complex dosing schedules
* confusion about how and when to take the medication

"Poor adherence can interfere with the ability to treat many diseases, leading to greater complications from the illness and a lower quality of life for patients."

From "Are You Taking Medication As Prescribed?" U.S. Food and Drug Administration Consumer Update, 2009.
http://www.fda.gov/ForConsumers/ConsumerUpdates/ucm164616.htm

To receive invitations to events, announcements of special series, and other news from the Disruptive Women in Health Care blog, please sign up on the site.

Disruptive Women in Health Care is a blog dedicated to serving as a platform for provocative ideas, thoughts, and solutions in the health sphere. We recognize that to accomplish this, we need to call on experts outside of the health industry.

The Disruptive Women have audacious hopes for our blog:

* We're driving change;
* We're creating chaos;
* We're finding cures;

…We're disrupting the health care status quo.

Disruptive Women is a project conceived of and owned by Amplify Public Affairs.

Amplify Public Affairs is the next generation in public affairs, leading the way in the integration of new media and traditional communications strategies. With unequalled expertise in aligning allies, connecting voices, and promoting action, Amplify serves as a relationship builder, creating and sustaining win-win collaborations to move issues forward and influence targeted audiences. Through the blending of innovative communication technologies, credible coalition building, grassroots and top-tiered public affairs expertise, Amplify leverages connections to achieve targeted objectives in the public, private, and political arenas.

This e-book was compiled from the October 12 through November 16, 2009, drug adherence posts on the Disruptive Women in Health Care blog, http://www.disruptivewomen.net/category/policy/drug-adherence/.