

# → Improving Adherence OUT OF DISRUPTION

*The industry is on the brink of one of the biggest disruptive changes in marketing history —*

*comprehensive relationships with patients using integrated tools.*

**T**he industry is facing many difficult hurdles in 2013 and beyond, but perhaps none so elusive as improving patient adherence through understanding consumers and their resistance to behavioral changes. Anyone who has tried to lose weight or quit smoking can tell you how difficult it is to change a behavior even when the result is a better health outcome. To learn how to improve patient adherence, companies must first learn more about patients and understand their behaviors, a task made more difficult by the fact that as patients, we often don't understand ourselves. However, our experts say establishing long-term relationships, offering value beyond the pill, and actively engaging with patients will set the stage for a new patient-focused commercial model.

According to EY, in its Progressions: 2012 — The Third Place: Health Care Everywhere report, companies are beginning to make an evolutionary change, moving from a product-oriented transaction model to value-oriented, outcomes-based relationships. In this approach, adherence is no longer about the drug or prescription regimen, but about establishing a long-lasting connection with consumers.

In other words, to effectively change patient behavior and improve patient adherence, companies need to switch from the straight pitch of treatments to a more engaged and meaningful exchange with patients, says Sanjeev Wadhwa, principal, leader, life sciences R&D and patient adherence, at EY.

"Adherence is no longer a one-way proposition but rather a multisided interaction, where companies, patients, families, and communities adhere to each other based on a mutual exchange of value," he says. "To develop lifetime patient relationships, organizations are going to need to coordinate across the healthcare ecosystem to develop patient-centric, provider-supported collaborative care networks in a participatory model."

Through such approaches, companies are gaining important knowledge from their in-

teractions with patients, and completely re-vamping their strategies.

The change is monumental, according to Diego Miralles, M.D., founding partner and head, Janssen Healthcare Innovation.

"The demand for change is coming from empowered healthcare consumers, and technology is a great enabler of this," he says. "The switch to a patient-centric business model will be a big, big change."

According to Kathy Gram, associate director, corporate communications, at Millennium: The Takeda Oncology Company, traditional marketing strategies directed toward patients are shifting toward social networks both on and offline. Peer-to-peer influence is growing in all markets and pharma is no exception.

"Patients have credibility and are a trusted resource for healthcare information and advocacy activities," she says. "It is critical for companies to have a presence and a voice within the patient community in addition to being informed regarding patient opinions."

The patient-centric approach will be a game changer for market research, according to Greg Rice, senior VP, digital strategy, Klick Health. The industry must move beyond traditional, intermittent methods of gathering insights from customers via market research to a more sustained model of building more enduring relationships with groups of patients and care partners.

For example, he says companies should consider identifying patients and care partners who would be interested in participating in enduring collaborative relationships that can assist in program development.

"Technology facilitates these relationships, from the identification of ideal participants to the creation of online collaboration spaces that operate as private social networks," Mr. Rice says. "There are many examples from within and outside of pharma where these co-creative relationships have spawned valuable programs that the company could not have developed without this critical stakeholder input."

At Millennium, the company has devel-

## FAST FACT

THE CENTER FOR HEALTH TRANSFORMATION ESTIMATES THAT NONADHERENCE LEADS TO \$290 BILLION IN DIRECT AND INDIRECT HEALTHCARE COSTS ANNUALLY — 13% OF TOTAL U.S. HEALTHCARE EXPENDITURES.

Source: EY

oped relationships at both the national and the local level. According to Ms. Gram, the company is a true believer in the importance of both national and local patient outreach.

"Nationally, we support patients by funding financial assistance and educational programs through grants to advocacy foundations," Ms. Gram says. "We are also national sponsors of fundraising events that engage the patient community in raising awareness and generating funds for research with the common goal of finding a cure for cancer."

"Locally we have created a unique approach of connecting real patients with real stories through outreach and education," she continues. "Together with our partner Snow Associates we have recruited close to 50 patient ambassadors, branded and unbranded, to share their life experiences as cancer patients."

Ms. Gram says the patient stories offer hope and encourage patients to know their treatment options, seek second opinions, and most importantly stay on treatment. In the three years since its inception, the ambassador program has reached more than 10,000 patients and caregivers within a relatively rare disease state, and the company has strengthened partnerships with a growing network of patient support groups.

"Attendees leave the speaker programs feeling both educated and empowered and view Millennium as a company that understands



LEIGH HOUSEHOLDER • GSW Worldwide

***“Pharma’s opportunity is to take action on behalf of their valued customers to fill in the gaps in care and context.”***

the individual patient perspective beyond manufacturing a product,” Ms. Gram adds.

Janssen Healthcare Innovation is addressing the changing healthcare business landscape by developing integrated care businesses that put the patient at the center of care. For example, the company is piloting a comprehensive cardiac rehabilitation program that addresses patient recruitment, retention, and the factors that motivate positive behavioral change to achieve better health outcomes.

“Additionally, we are exploring how novel technologies, such as mobile health apps, can influence consumer behavior, improve medication adherence, and help consumers manage chronic conditions,” Dr. Miralles says.

### **A Two-Way Pipeline of Patient Data**

Enduring relationships with patients are just the beginning, as the new model will also provide opportunities for all members of the



DR. DIEGO MIRALLES • Janssen Healthcare Innovation

***“The pharmaceutical industry has the capacity to change, and it must change to survive.”***

### **Focus On Health Outcomes Means the Pie Becomes Larger**

According to EY, some in the pharma industry are worried that moving into areas of prevention and improving health outcomes could hurt revenue by cannibalizing their drug business. In fact, EY says the opposite is true, because the pie becomes larger. Deep and enduring relationships with patients provide a trove of data — and information is where the value will truly lie in the evidence-based future of medicine. In addition, companies can create additional revenue opportunities, such as services around disease, solutions focusing on behavioral and lifestyle aspects, palliative care, and education.

types of enduring value exchanges, they must strive to understand their customers better.”

At Millennium, the ambassador program is designed to empower patients to ask questions and form a healthcare team comprised of

healthcare network to share and engage in clinical, commercial, and real-world health outcomes-based trials.

“This two-way exchange of information not only creates value for patients in improved outcomes and insights, but also allows participating organizations to develop lifelong relationships with other stakeholders,” Mr. Wadhwa says.

This forward-thinking model requires new technology capabilities, processes, and skills that are not fully present in the industry today, according to Bob Harrell, VP marketing, healthcare, Appature.

“It takes a significant amount of time to build relationships and to gain understanding of the triggers that influence treatment decisions,” Mr. Harrell says. “More comprehensive approaches to the application of data, campaign management, and analytics will help life-sciences companies begin building life-long customers, which will ultimately result in patient adherence.”

Understanding consumers is critical for developing messages and information that resonates with them.

“I think the key challenge here is building enduring relationships,” Mr. Rice says. “For this to hold true, there must be a sufficient value exchange or people will simply disengage. In order for companies to create these





**GREG RICE** • Klick Health

***"Co-creative relationships have spawned valuable programs that companies could not have developed without critical stakeholder input."***

### FAST FACT

IN THE UNITED STATES, AS MANY AS 50% OF PRESCRIPTIONS ARE NEVER FILLED, AND ONLY 25% TO 30% ARE TAKEN PROPERLY.

Source: EY

friends and family to assist with care and activities of daily living. Ambassadors strongly encourage patients to bring an advocate with them to all appointments so they can be sure to capture all information about their treatment plan. Millennium developed a list of questions for the patient to ask their physician so that nothing falls through the cracks.

"We also have developed a patient starter kit regarding the treatment plan, lab values and other test results, calendar, and available patient resources," Ms. Gram says.

The nature of these relationships should not necessarily aim to be deeper, but more holistic, says Leigh Householder, VP innovation strategy, GSW Worldwide.

"Pharma's opportunity is to take action on behalf of their valued customers to fill in the gaps in care and context," she says. "People stop taking their drugs for all kinds of practical and deeply emotional reasons — from painful side effects to not realizing their doctor expected them to refill; from not wanting to feel like a patient to not wanting to spend tight family resources on themselves."

Understanding the real dynamics involved in each individual customer's motivations will allow marketers to create the right connections at the right time, Ms. Householder says.

"It's all about valuable relationships with both clinicians and patients, but the value must be in terms of better disease management and better patient experience," says Matt Hall, CEO, Human Care Systems. "For example, text reminders can be seen as valuable or as noise if they are received as one-offs. Integrated multichannel engagement using the Web, email, mail, mobile, and phone calls are the most impactful. It's this multichannel support based on behavioral science that can successfully drive behaviors, including adherence, by removing barriers and focusing on events that happen in real time."



**BOB HARRELL** • Apperture

***"More comprehensive approaches will help life-sciences companies begin building lifelong customers, which will ultimately result in patient adherence."***



**MATT HALL** • Human Care Systems

***"The new model is all about valuable relationships, but the value must be in terms of better disease management and patient experience."***

As companies strive to bring value beyond the pill to patients through adherence tools such as text reminders and monitoring, another more intrinsic benefit surfaces, and that is that the patient perceives value in his or her participation in clinical trials.

"Patients put value on getting healthier, but they also put a lot of value on contributing to improvement of healthcare," says David Handelsman, principal, SAS Health Analytics Practice.



DAVID HANDELSMAN • SAS Health Analytics Practice

***“Patients put value on getting healthier, but they also put a lot of value on contributing to the improvement of healthcare.”***

These long-term relationships will result in the uncovering of a multitude of patient needs that companies may not traditionally be comfortable in addressing. For example, companies will have to get comfortable in providing more health management-focused content versus product-focused content, Mr. Rice says. When a patient is first diagnosed and prescribed a treatment, they and their care partner will have questions and concerns about a prescribed therapy, but those concerns can often be eclipsed by other concerns about how the condition or disease will impact their lives, such as family burden, job, financial health, etc.

“In addition, all content needs to be optimized for the multi-screen environment and offer the patient the opportunity to connect

with peers who are experiencing the same challenges,” he says. “Both multi-screen optimization and peer-to-peer programming are still in the early days within our industry.”

### Changes in Strategies Bring New Challenges

There is nothing easy about aligning patient adherence strategies across all departments and in effect changing the way the industry has done business for most of its existence. As one of our experts put it, it’s hard to build a new boat while the ship is sinking. The industry must learn, build, and collaborate if it wants to bridge the gap between sinking now and being more effective in the future.

And it’s going to be quite a learning curve, according to Dr. Miralles, who says a significant challenge for the industry to establishing consumer relationships is that the patient has never been the primary customer before.

“Our customer has always been the prescriber and that is where we have always focused,” he says. “We have had very limited relationships with consumers, if any. And in some cases, regulations prevent us from having a relationship with the consumer. I think that is a big barrier.”

Another hurdle comes from the fragmentation of the system, he says.

“There are many things we are able to do only through the provider system, not directly engaging consumers,” he says. “And to compound the lack of unity among stakeholders this divide between patient and stakeholder occurs at all levels in healthcare — between the hospital and the patient, between the specialist and the patient, the insurance company and the patient.

“Right now each party is only focused on its specific portion or transaction and not looking at the big picture of how to go beyond and integrate stakeholders and patient transactions,” Dr. Miralles continues.

While the industry has other hurdles, such as regulatory restrictions, it is also guilty of short-sightedness in dealing with these limitations, by only looking for immediate solutions, as opposed to anticipating a resolution coming further down the line, says Richie Bavasso, president, VPSN.

“Pharma’s multichannel activity is myopically focused, partially because of regulatory

restrictions focused on cost-reduction, thus limiting appropriate communication and some is self-imposed, because pharma is a business, from R&D to market, built on selling.

“There is not much in the short term that pharma can do to impact regulatory pressures, however, perhaps if it embraced payer initiatives it can eventually earn, over time, to participate as an equal,” he says. “Before it can successfully change the behavior of its consumers, the industry must change its own, but that will take tremendous self-discipline.

### Case Studies in Patient Adherence

#### NEPHROTIC SYNDROME

In June 2012, Human Care Systems began working with Questcor Pharmaceuticals to provide specialized support for patients who were prescribed a six-month regimen of H.P. Acthar Gel, a treatment for nephrotic syndrome (NS), a rare collection of symptoms that can cause long-term kidney damage. The program was designed to help patients overcome confusion and frustration about the nature of NS and support adherence. Human Care Systems and Questcor report that patients experienced an increased initiation rate of 20%, as well as a decreased discontinuation rate of 60%.

#### CHRONIC HEPATITIS B EDUCATION

To educate both physicians and patients on the need to get tested for hepatitis B, the adherence program had to first address the social stigma of having the disease. For example, there have been cases in some Asian families where if a member has tested positive for hep B, the rest of the family will no longer eat with them. Not only is hep B a major global health problem, but people avoid getting tested because they would rather not know. To address this issue, Human Care Systems worked with Gilead Pharmaceuticals and developed a hepatitis B awareness campaign called “B Informed: Understanding Chronic Hepatitis B.” Participating physicians experienced an increase in the number of patients requesting hepatitis B screenings. A multichannel program provided education to both clinicians and patients through a speaker series and print materials, as well as through online channels. Clinicians learned to proactively identify patients who needed to be tested and how to have an effective conversation with them by overcoming patient barriers, which led to more patients getting tested and initiating therapy.

Source: Human Care Systems. For more information, visit [humancaresystems.com](http://humancaresystems.com).





**SANJEEV WADHWA** • EY

***"Adherence is no longer a one-way proposition, but rather a multisided interaction."***

"It is very hard to take the time to design and build a new boat while the ship is sinking," Mr. Bavasso continues. "Until the revenue slide abates, pharma will cling to old ways until its last dying breath. A complete transformation of practice will be required. To quote Picasso, in order for something to be created, it must first be destroyed."

The industry will be hard pressed to gain the momentum needed to achieve these radical changes, because of its historic reluctance for change and its fear of risk compounded by the lack of proven metrics and insufficient business savvy for this new model, which presents a larger than life hurdle.

"I think there is a knowledge gap and probably some fear in how to effectively engage patients and care partners in an enduring collaborative relationship in a regulatory compliant manner," Mr. Rice says. "It is a new way of doing business, so there sometimes is sim-



**RICHIE BAVASSO** • VPSN Inc.  
@RABavasso

***"Until the revenue slide abates, pharma will cling to old ways even though a complete transformation of practice will be required."***

ply status quo thinking that can serve as a roadblock."

The status quo of aiming for the middle will also hamper any truly creative communication that might occur between the companies and their consumers, Ms. Householder says.

"Everything about the way we're built today rewards designing for the middle, finding the message we can say or give to everyone," she says. "That creates experiences that few like and none love. It stands in the

way of truly personal communications and actions."

Measurement is equally challenging. With a limited view of customers and so many potential influencers, it's hard to see what ultimate impact efforts could have on their lives, since there's no clinical trial for a CRM program. Instead, the industry must rely on interim measures like clicks, visits, and signals that prove the value, which Ms. Householder says limits taking action on the things that can be measured and limits investment in tactics that seem worth that level of engagement.

The primary hurdle for companies in developing lifetime relationships with patients is that it will require a level of collaboration and information sharing that organizations involved in healthcare delivery have not previously undertaken on any level of scale, Mr. Wadhwa says.

"In addition to working through the legal, regulatory, and financial specifics, significant complications exist in aligning incentives, designing quality metrics, and designing architecture for information exchange," he says.

Mr. Bavasso believes the industry has



**KATHY GRAM** • Millennium: The Takeda Oncology Company

***"The industry of tomorrow will create value for its patients purely through patient outcomes."***

barely scratched the surface in terms of its efforts to communicate with patients and HCPs.

"Efforts have been on a periphery level at best," he says. "Pharma needs to be present in the non-pharma discussion in real-time to represent the limited yet substantial pharma impact on patient outcomes — and yes, I said limited. It is equally important that pharma, unless it plans on buying hospitals, delivers care through HCPs, and organizing insurance programs, it realizes its role is limited in the continuum of care." **PV**



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# → CHALLENGES OF Developing Patient-Adherence Models

*Influencing patient behaviors brings new challenges.*

**T**he EY Progressions: 2012 report predicts that patient adherence practices will evolve from getting patients to take their medicines to the broader prospect of improving health outcomes. This shift will require more focus on influencing patient behaviors and getting each patient to the best possible outcome for that individual — not just medicinal treatment, but all along the complete care continuum, including prevention and monitoring. This patient-centric model for adherence has begun to transform how the industry is developing and marketing its products.

According to Sanjeev Wadhwa, principal, leader, life sciences R&D and patient adherence, at EY, building long-term relationships with consumers will fundamentally change the industry's marketing strategies in that consumers will become an even bigger influence in driving their own healthcare decisions. This shift will require companies to design commercial models focused on conveying value and driving adherence from not just the perspective of the physician, but also the patient and the patient's sphere of influence.

Another hurdle comes from the fragmentation of the system. There are many things that can only be done through the provider system, rather than directly engaging consumers.

Unfortunately, this kind of fragmentation is not unique to only the pharmaceutical company-consumer relationship. It happens at all levels in healthcare. Right now each party is only focused on its specific portion or transaction and not looking at the big picture of how to go beyond the silo and integrate stakeholders and patient transactions.

Matt Hall, CEO, Human Care Systems, says the focus on patient adherence must occur along all the functions within a company, not only from a commercialization perspective, but also from the development perspective if it wants to be effective.

"The idea of silos is fading fast as we all re-

**MATT HALL** • Human Care Systems

*"The industry is now saying change isn't going to be easy, but we can better solve the whole problem, and that is worth doing."*

alize that traditional business models are no longer going to be sufficient in the future — the lines are blurring and a company can no longer be banking on the next drug coming to market being the driver for everything else," he says. "The patient needs to come first, right from the beginning."

The industry must be prepared to partner with both patients and providers and consider new strategies, says Richie Bavasso, president, VPSN. For example, pharma needs to determine whether developing non-brand specific strategies that clearly benefit the patient will also help meet its bottom line. Partnerships with providers and payers may also shift some of the challenges caused by formularies.

"I believe pharma fears that after it helps lower the cost of care and improve outcomes, payers will still defer to cheaper therapies with lower outcomes just to achieve a short-term cost savings," he says. "Providers and payers must also accept some of this risk by having longer-term goals."

Mr. Wadhwa agrees that historically, the relationship between pharma and payers has been characterized by mistrust and opposing interests. However, with the dynamics of healthcare rapidly changing, stakeholders now realize that their interests are often aligned.

"By focusing on patient outcomes, life-sciences companies can work with payers to tackle significant health challenges," he says. "In addition, because of the shift to risk sharing, accountable care models with more demonstrated care protocols, we will see payers acquiring providers to better manage their



risk. This trend, combined with the desire of other players in the healthcare ecosystem to develop relationships with patients will increase the productivity and transparency of the payer/provider/patient relationship."

Along with collaborations with insurers and large employers, the more patient-centric model may force the industry to change how it spends its marketing budget. Focusing on relationship building with patients may require it to invest less on generic marketing communications and more on targeted creative strategies that focus on ways to solve patient problems.

"Strategies should aim for a longer-term goal of better health outcomes, better health economics, and better patient quality of life by engaging with customers in a way that is meaningful around awareness, diagnosis, initiation, and adherence," Mr. Hall says. "Solving the broader problems opens up the opportunity to change the argument with payers from the 6% of global healthcare spend that is pharmaceutical to the 94% that is everything else in healthcare."



SANJEEV WADHWA • EY

*"All stakeholders, including payers, will soon realize that everyone's interests are often aligned."*

of disease and population health problems," he says.

The two key events driving this are the abrupt edge of the patent cliff combined with the challenging new product development environment.

"These two factors have driven a new religion within pharma around thinking that this change isn't going to be easy, but we can better solve the whole problem, and that is worth doing," Mr. Hall adds.

Ms. Householder believes the industry will slowly evolve in a three-step process, from marketing strategies that feature only the product, to ones that add value around the pill, to ultimately the industry being a service provider that helps people get access to the support they need to choose a healthier life.

"This shift requires a radical shift in how we connect with people," she says. "It means



LEIGH HOUSEHOLDER • GSW Worldwide

*"Industry focus will switch from 'we're there when you need help' to 'we're actively helping you.'"*

we will switch our focus from 'we're there when you need help' to 'we're actively helping you.' " **PV**

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# → PATIENT ADHERENCE

## Tools Get Personal

*Tools from blister packaging to text reminders to consortiums are helping drive patient adherence.*

**A**ccording to EY, tools for patient adherence are increasingly changing from a one-size-fits-all approach to a more personalized one. While blister packs and text reminders are still integral tactics to promoting compliance; adherence programs in the future will also focus on creating personalized incentives to drive adherence. Here are a few examples from our thought leaders.



**RICHIE BAVASSO**  
VPSN Inc.

The success of any new endeavor relies on repeated hypothesis and experimentation. No one has yet figured out the appropriate innovations that will be party to successful patient-centric strategies. I know one thing for certain, it will not be one single strategy nor will it be a slight variance or facsimile of past practice. I give credit to companies like Novartis, Novo Nordisk, Shire, and others for trying different social utilities and apps. None of them have been overwhelmingly successful but they are a step in the right direction.



**DAVID HANDELSMAN**  
SAS Health Analytics  
Practice

While there is a lot of interest around generating apps directed at consumers, there are also initiatives that focus more on the therapeutic level than the commercial pharmaceutical level. For example, the CEO Roundtable on Cancer, a nonprofit corporation, is comprised of chief executives from more than 30 major American companies representing diverse industries, from nonprofit organizations that are committed

to fighting cancer, several National Cancer Institute-designated cancer centers, and pharmaceutical companies. Christopher Viehbacher, CEO of Sanofi, is chairman of the roundtable.

There is also growing interest in enabling patients to be more active contributors to improving health outcomes. As an example, most clinical trial participants are surprised to learn that the data they provide as part of a trial are typically very limited in how the information can be used. There are valid consent and privacy reasons for the limitations, but many cancer patients want their data contributions “to do more,” and not be limited in scope. They actively share their experiences in public online forums and they view their clinical data as part of those shared experiences.

Through organizations like the Life Sciences Consortium (LSC), a task force of the nonprofit CEO Roundtable on Cancer, these collaborative limitations are fading away.

The LSC is bringing together diverse parties together — advocacy groups, government, payers, healthcare providers, and pharma and biopharmaceutical companies — to collaborate on creating better health for cancer patients.



**BOB HARRELL**  
Appature

One of the most important and growing areas for innovation in life sciences is the application of big data. The volume of data we are all faced with managing is only accelerating. In fact, a recent IBM study demonstrated that 90% of the data in the world today has been generated in the past two years. The idea behind big data is that this explosion has reached a scale where it cannot be made sense of without new approaches to data management and analysis. This in turn requires having a pro-

gressive data infrastructure in place and ensuring both analytics teams and marketers are learning the new skills needed to make the most of this new opportunity. An example would be using data to identify the signals that a patient may be having difficulty or losing focus on treatment and providing proactive interventions before he or she actually discontinues the drug, a point after which it becomes much more difficult to influence their behavior or motivate them to return to treatment.

There are many other interesting emerging trends, including the entry of new devices and data sources that provide new engagement opportunities, whether that is integrating with HCPs' workflow through EMR and practice management applications or interfacing with patients through new wireless self-monitoring tools. Market research and testing of these new tools will be very important to learn what is most effective in driving patient adherence.

Marketers should not let the shiny new thing distract them from evolving the overall marketing strategy, and they should also not overlook the tried-and-true tactics just because something new is available. In fact, sometimes the most out-of-the-box thinking comes from taking a hard look at the tools and processes that are already available, but we have failed to maximize. For example, look how Amazon streamlined its ordering process with one-click ordering and reduced friction in the buying process, or how MP3 players didn't gain traction until the iPod made the devices just simple enough through improved user interface and its online music store to spark mass adoption.

Likewise, life-sciences marketers already have many tools at their disposal that can make a large impact, but most companies have not been equipped to orchestrate them in the sophisticated manner that other industries have learned to do to influence behavior. The industry must move from loosely aligned

push marketing tactics to a more coordinated, cross-channel, data-driven and customer-centric campaign approach.



**LEIGH HOUSEHOLDER**  
*GSW Worldwide*

No question, there are a lot of cool tools out there. From ones that show great early results such as integrated text and social support to ones that we can't help being curious about like the computer chip pills that track what's going on inside your body.

Personally, I think the two that are really changing medicine are remote monitoring and smart listening. Several studies have validated the power of remote monitoring to change behavior and improve results. It works like this: a doctor gives the patient a tool to track, say, his blood pressure at home for six months. The act of tracking keeps the health issue top of mind and the cool new tools that plug into iPhones and laptops make the tracking fun. Phone detection algorithms have put big data to work to detect illness or struggle, just by listening to a person's voice. In the time it takes to make a short phone call, these new programs can diagnose Parkinson's, flag depression, or simply rate overall mood. This all points to a future that is driven by intervention. In our busy, multitasking, resource-crunched world, we may never crack the code on wellness. But, technology will allow us — or our insurance providers — to spot threats.



**GREG RICE**  
*Klick Health*

I think we will see more companies exploring reward-based adherence programs similar to what was outlined in the EY report.

We have seen a few innovative company offerings in this space that have embraced behavioral economics principles, and I believe this will be one the most effective tools moving forward to truly change patient behavior.

In addition, I think we will see more advances in passive monitoring technologies like Proteus Digital Health's ingestible sensor. Passive monitoring will give the most accurate view to clinicians of what really is happening, allowing them to adjust treatment regimens based on reality, not expectation.



**NEERAJ SINGHAL**  
*Cegedim*

As manufacturers of drugs, life-sciences companies are closest to the drug development, packaging, and distribution process. If all life-sciences companies integrate consumer thinking into this process, it could lead to more innovations. Take the example of smart packaging. This could be a nonintrusive way to communicate with patients, their loved ones, and prescribers, to ensure that patients take their medication at the appropriate time.

Failure to do so could trigger messages to caregivers based on business rules, leading to quick rectification of the situation before it becomes an unfortunate incident.

This process could start with drug dosage as prescribed by a physician being seamlessly downloaded from a Smartphone adherence app that the patient is offered as part of the prescription. Patients would not need to worry about missing a dose of medication because this app would remind them in advance. If they needed to get a refill, the app would automatically send a message to the pharmacy. Based on the ailment, the patient may be able to input their condition, which the physician could monitor remotely, and adjust the dosage accordingly. This wellness assistant could combine other information on the patient's daily regimen, like diet and exercise, to deliver strong benefits. Patients could be more compliant, hospitals would not be burdened by avoidable admissions, and life-sciences companies and their partners could offer a truly valuable service to consumers.

The behavioral information and other data collected with patients' consent in this wellness app can power future drug research, dosage and packaging decisions, and will benefit many others in the future.

Life-sciences companies, based on this anonymized information, could objectively demonstrate to payers that they are not only playing a role in developing cures, but also in prevention and monitoring, thereby enabling them to have better changes for market access due to their ability to impact healthcare outcomes.

The main issues that one can foresee in the implementation of such innovation are primarily privacy and trust. There can be many ways in which this innovation and the data generated from it can be misused by all parties.

Some ground rules and legal boundaries will have to be established before implementation.

Hopefully the legal boundaries would not be high enough to stifle innovation and future benefits.



**SANJEEV WADHWA**  
*EY*

Health technology is already making strides toward creating algorithms to find the incentive that works for any given person. For instance, Health Honors (now acquired by Healthways) launched its proprietary patient behavior modification technology, Dynamic Intermittent Reinforcement (DIR). DIR, which uses principles developed by behaviorist B.F. Skinner, includes the use of intermittent reinforcement schedules, a linked behavior/reward sequence and education to condition patients and allows patients the opportunity to earn points as determined by a suite of complex behavioral algorithms. The algorithm calculates the lowest level of reward to drive adherence, making the product cost-effective. Patients can participate in the system using a Web interface, an interactive voice recognition system by phone, and through a mobile application. Points can be saved in accounts and be used on health-related rewards such as gift certificates, co-payment discount coupons, and fitness equipment. Health Honors has signed agreements with McKesson Health and Kaiser Permanente for the use of its technology.

Text reminders and blister packs are also giving way to more sophisticated technology, which not only serves to remind patients to take their medications but also allow physicians and healthcare practitioners to monitor patient compliance. Novartis is already making headway in this field, and has teamed up with Vitality on a reminder package called GlowCap for its hypertension drug Diovan. This is a new technology that includes a bottle cap embedded with a wireless chip that signals to patients if they are late in taking their medicine by triggering flashing lights and audible alerts. If the patient fails to open the pill cap within two hours of the scheduled dosage, an automated phone reminder is initiated. GlowCap also tracks the monthly compliance data, which can be shared with the physician. Novartis is also partnering with Proteus to launch an ingestible sensor, which can be embedded into a given pill. When ingested, the sensor is



## Disruptive Innovation: Patient Adherence

activated by the stomach fluid and sends a signal to a skin patch, which then wirelessly transmits the data to the Proteus smartphone app.

Pharma companies are beginning to conduct large-scale surveys and studies to find the reasons behind nonadherence. This will in turn help them design more targeted adherence programs in the future.

For example, Lilly, Kowa Pharmaceuticals, and National Lipid Association have conducted the largest known survey of statin users known as USAGE (Understanding Statin use in America and Gaps in Education). The study involved more than 10,000 users in the United States. The USAGE survey provides data on why patients stop taking their cholesterol statin medications. In the survey, side effects (62%) and cost (17%) emerged as the leading reasons why respondents stopped taking their statin, with lack of treatment efficacy cited as third most important.

The use of predictive modeling to identify nonadherent patients well in advance is another innovation, which could become more common in the future. Express Scripts, one of the largest PBMs in the United States, has developed therapy adherence predictive models that can identify patients likely to become nonadherent up to 12 months in advance. Its adherence solutions and programs then accordingly intervene with patients who need help in maintaining adherence. The company is cur-

rently piloting programs using pharmacy claims data and behavior management interventions to understand which adherence solutions help patients activate their intentions to adhere.

Merck has signed a deal with the insurer Cigna under which Merck will offer discounts to patients using its diabetes drugs, Januvia and Janumet. If patients stick to their regimes, Cigna adjusts levels of co-pay, based on adherence.

By leveraging a number of behavioral approaches including financial incentives, education, reminders and gaming, companies are aiming to tackle the issue of noncompliance. For example, Health Prize offers a unique medication adherence program that rewards patients for compliance with their medication regime. The HealthPrize Engagement Engine gathers daily compliance data from users, verifies their prescription refills, and rewards them for adherence. Financial incentives come in three varieties: loyalty points, weekly sweepstakes, and monthly competitions, with a prize to the highest point earner per month. While the financial incentives serve as a compelling extrinsic motivator designed to maximize opt-in rates, and the loyalty points, in particular, serve to maximize persistence over time, targeted and repeated education in the form of weekly quizzes and daily fortune cookies (for additional points) is also incorporated into the solution in order to build and

strengthen a consumer's intrinsic motivation to remain compliant. Daily self-reporting is accomplished through response to simple text or email messages, online via the HealthPrize dashboard, or via the HealthPrize mobile platform.

Focusing on particular diseases and designing intervention programs accordingly could also be another noticeable trend. For example, an adherence program for cancer patients would be different from one for diabetic patients. Physicians Health Plan of Northern Indiana has introduced Sweet PHP rewards, a diabetes management incentive program.

The program helps diabetic members adopt healthier lifestyle choices by rewarding them. The program is available free of cost to the diabetic members of PHP plans. The members are required to complete a health risk assessment (HRA) containing information on lab test results such as A1C, cholesterol, and triglycerides. Based on this, PHP's diabetes care managers offer personalized one-to-one or phone-based coaching to the members. The members are eligible to receive incentives either in the form of a gift card or no co-pays for specific items such as diabetes lowering medications, certain blood pressure medications that help protect kidneys, statin medications that help regulate cholesterol, and testing strips. The members receive rewards based on the completion of levels of behavioral change **PV**

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