

## **Taking Strategic Leadership: An Approach for Pharmaceuticals to Invest in Coordinated Patient Adherence and Access Strategies**

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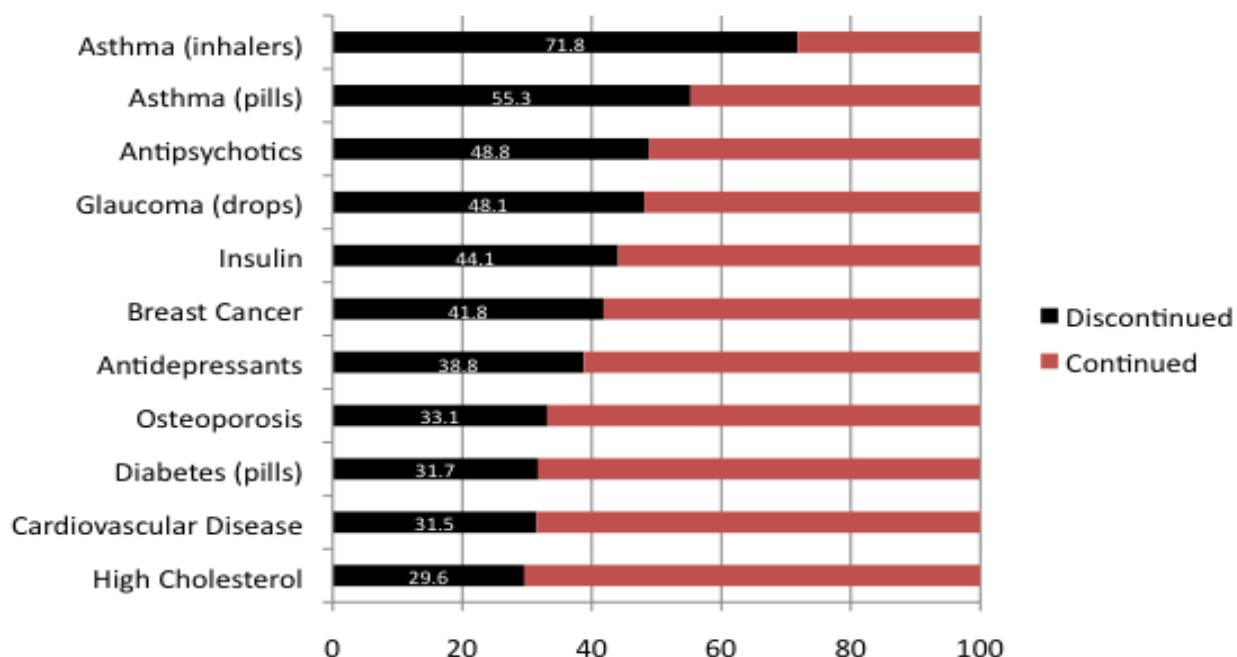
Underfunded in the pharmaceutical industry, yet vital to improved patient outcomes, is innovation, relating to patient Access to and utilization of medicines. This R&D rests not solely with the Research Department but with the Marketing, Public Affairs, Communications, and Corporate Responsibility (CR) professionals as well.

The challenge and opportunity for the industry is to align its efforts to increase both patient Adherence to drug prescriptions and patient Access To Medicines (ATM). This requires pharmacos to adopt a comprehensive “Access to Health” (ATH) educational approach that involves both new and enhanced approaches to patient and caregiver education and awareness, technology, targeted external communications and promotions, and strategic linkages to drive access to medicines.

### **I. The Adherence and Access Link**

According to the World Health Organization, of the 1.8 billion prescriptions dispensed every year, only 50% are taken correctly by the patient. The list of Adherence challenges is eye opening. In the paper, “Rookies at Risk,” newly diagnosed patients voluntarily drop off of their prescribed course of treatment in the first thirty days, for conditions, such as: asthma, antipsychotics, glaucoma, insulin, breast cancer, antidepressants, osteoporosis, diabetes, cardiovascular disease, and high cholesterol.

## Percent of Patients New to Therapy Who Discontinue Medication in the First 30 Days



Some estimates suggest that the industry loses \$350 billion annually due to lack of patient Adherence. This does not include the related human costs of increased morbidity and death, and additional costs imposed on the health care system, taxpayers, and through lost economic productivity. One estimate suggests \$290 billion each year in increased medical costs.<sup>i</sup> This is a startling figure. Compare this to the fact that the World Health Organization (WHO) estimates annual global sales of pharmaceuticals at \$750 billion.<sup>ii</sup> With annual industry average profits at just over 16%, the industry earns roughly \$121 billion a year.<sup>iii</sup> Annually, Adherence losses could equate to nearly three times industry profits.

Reasons for poor Adherence vary. At root is the link between basic understanding and cognitive behavior. The National Assessment of Adult Literacy assessed 19,000 adults nationwide, finding approximately one-third have basic or below basic health literacy skills.<sup>iv</sup> Other studies find that half of all patients cannot comprehend what they are reading when provided with information on diseases and treatment.

[<http://www.slideshare.net/HealthEdUS/healthed-championing-health-literacy-presentation-social-health-2010>]

Those who are most likely to have low literacy:

- The elderly
- Lack a high school degree
- Unemployed and/or have low income
- Minority ethnic groups
- Speak English as a second language
- (However, not everyone with low literacy skills falls into these risk groups)<sup>v</sup>

These represent the same demographic groups that also suffer from a lack of Access to Medicines. An estimated 10 million people die annually from a lack of Access to Medicine (ATM). 2.2 billion people have effectively no Access to Medicines. This does not include the numbers that have limited Access. For over a decade, the pharmaceutical industry has come under increasing fire to make medicines affordable for the billions of individuals worldwide, who lack coverage or other means to pay for them.

Most leaders in the industry possess patient assistance programs to ensure that those who need drugs can receive them. Yet participation remains modest and to add to the challenge, some figures indicate that those eligible do not adhere to these programs either.

ATM has obtained global headlines as it relates to life-threatening diseases such as HIV-AIDS, Malaria, and TB. In recent years, the industry has made efforts to invest in solutions to Neglected Tropical Diseases and Access to vaccines through partnerships, such as the Global Alliance for Vaccines and Immunization (GAVI). Currently, with growing industry attention to create therapies for Non-Communicable Diseases (NCDs)

(also referred to as “chronic” and “lifestyle” diseases) such as Diabetes, Cardiovascular, and Pulmonary conditions, activists are calling for ATM in these areas as well.

## II. The Challenge and the Opportunity

Given the scope and impact of both Adherence and ATM, the industry’s response has been at times puzzling. This is particularly true for Adherence.

Finding good data on current levels of pharmaco investment in patient Adherence is difficult. One estimate finds that the industry spends only 3 percent of marketing dollars on supporting patient knowledge.<sup>vi</sup> This compares to the overall \$33.5 billion spent (in 2004) on promotions in the US overall.

It’s difficult to pinpoint the industry’s apparent reluctance to invest greater effort to increase Adherence, while abandonment across drug classes grows. A range of likely reasons include:

- *Economic “leakage.”* Programs to improve patient awareness and behaviors may very well extend to improve Adherence for a competitor’s products. If it’s difficult to target (and even design due to regulatory constraints) educational campaigns to deliver specific returns on investment (ROI) then a company will resist making them
- *Existing incentives.* Incentives may drive staff to make the sale and move on, building in institutional neglect for Adherence
- *Regulations.* Existing and potential rigorous regulations regarding direct-to-consumer (DTC) communications and promotions may make the industry skittish in promoting Adherence too aggressively
- *Reputation risk.* Related to the above, the industry has come under criticism and scrutiny for its strategies to influence customer choices. Adherence programs could be met with suspicion or worse, move stakeholder concern towards outrage

- *Lack of expertise.* Adherence requires expertise in education and patient behavior. Pharmacos' core competencies rest principally in discovering, manufacturing, and distributing drug-based medical solutions
- *Cultural disconnect.* The industry remains largely geared to communicate to scientists, physicians, other healthcare providers, and professionals working for payers. The industry has relatively less experience understanding the kinds of patient audiences that possess low health literacy (and which often struggle with Access issues too)
- *Emphasis on treatment rather than prevention, health, and wellness.* Although pharmaco leaders have become more concerned with prevention, health, and wellness, their efforts remain largely in the nascent stage of development.

The challenges the industry faces with ATM are well documented. At core is a dispute regarding, R&D spend, pricing and profits. This can run into highly contentious philosophical and ideological debates.

Yet, while different challenges, ATM and Adherence face similar obstacles. A narrow focus on cost containment discourages industry action for both issues. A lack of investment in education on prevention, health, and wellness bedevils both Adherence and ATM. Both issues come with reputational risks where, in different ways, the industry can be vilified. Finally, core to the ATM challenge is a lack of funds to make up for shortfalls in patient income. Core to the Adherence challenge is the revenue lost as patients stop their treatment. In neither instance is the industry currently willing to invest more.

The industry therefore finds itself in an ironic dilemma. On the one hand, patients desperate for treatment cannot Access it. On the other, the industry cannot Access those that need treatment but seemingly inexplicably abandon it.

### **III. A way forward**

Pharmacos need a better strategy to take on the Adherence challenge. We propose an approach that looks at Adherence and ATM as part of a broader Access to Health (ATH) educational challenge. A core strategy should expand patient and caregiver education leading to healthy behaviors.

The strategy should rest on four pillars. The first is increasing investment in patient and caregiver education. The second is building effective patient and caregiver approaches that in part tie creatively into ATM needs. The third is effective measurement and tracking of results. The final is reinvestment of benefits into ATM challenges. Each is addressed in turn.

#### **1. Increasing Investment in Patient and Caregiver Education**

Bob Allen of AstraZeneca notes that 85% of consumers surveyed believe pharma has a role to play in educating them about their medicines.<sup>vii</sup> Yet as noted, efforts to do so fall somewhere within the approximately 3 percent of marketing and promotional dollars spent on each patient.

Most of the industry's leaders possess some type of philanthropic program to improve patient education. However this varies widely. The Committee Encouraging Corporate Philanthropy estimates the industry's 2010 cash giving at approximately \$3.721 billion. Of this, 75 percent, or nearly \$2.8 billion, went to health and human services programs. This category covers a multitude of activities. The largest is typically directed at federated charities such as the United Way. Remaining funds support hospitals, the creation of clinics, medical care for those in need, support for specific diseases, and a range of support for "human services" concerns that are not strictly related to health. If one generously estimates a range going to patient literacy and behavioral change of 5 to

25 percent of this \$2.8 billion, it means that as a percentage of profits, only one-tenth of one percent to a half percent of profits are invested in activities to increase Adherence.

Some propose that the industry increase its investment to 3 to 5 percent of profits to Adherence related programming.<sup>viii</sup> Given the potential payback this seems an intuitively reasonable benchmark. However, another proposal would suggest increasing the number and ambition of pilot programming activity designed to improve Adherence. Once results arrive, a pharmaco can accurately estimate the amount to invest to achieve ROI and beneficial health results.

## **2. Build effective patient and caregiver approaches that in part tie creatively into ATM needs**

No single approach or method will solve the Adherence and Access challenge. Pharmacos should experiment with a diversity of approaches. The good news is that several industry leaders are trialing a variety of promising approaches. Many of these remain limited in scope and constrained by their connection to the corporate giving program or foundation, albeit showing potential. Examples of the kinds of approaches to explore include:

- *Improving the quality and efficacy of patient literacy curricula and resources*

For example, Eli Lilly's Solutions for Wellness program provides personalized healthy living information, tools, and support for people with mental illness. The program works in conjunction with the doctor's treatment plan and prescribed medication to teach patients simple changes to live a healthier life.<sup>ix</sup>

Another Eli Lilly program, the Know Fibro initiative, provides practical information for people with fibromyalgia and their loved ones. Know Fibro, co-sponsored by the

National Fibromyalgia Association, offers comprehensive fibromyalgia information, symptom management tools, practical tips and a book that can be downloaded at [www.KnowFibro.com](http://www.KnowFibro.com). A key feature of the site is FibroGuide, a symptom management program that can be personalized to address the specific symptoms an individual is experiencing.<sup>x</sup>

- *Using trusted networks to influence behaviors*

An increasingly popular tactic to support Adherence is highlighting friends, families, community members, or individuals to whom a patient can more easily relate. For example, Merck supports mothers2mothers, which uses this approach to prevent mother-to-child HIV transmission in Africa. Each year, millions of children in the developing world are born to mothers living with HIV. Without intervention, as many as 40 percent of them will transmit the virus to their newborns, and each year more than a 500,000 children under the age of 15 will die from HIV/AIDS-related illnesses, according to the World Health Organization. mothers2mothers fills the gaps left by public health systems, providing a secure, warm environment where these women can feel safe to share their fears and feelings and receive the support and encouragement they need. A simple idea, m2m has developed a unique model that is cost effective, replicable, and adaptable as “mentor mothers” work to help educate on preventing transmission.<sup>xi</sup>

Eli Lilly supports Inspired by Diabetes, a global campaign asking people with diabetes, as well as their families, friends, and health care professionals, to express how diabetes has impacted their lives and to share those stories with others around the world. At the heart of Inspired by Diabetes is the Creative Expression Competition, which seeks expressions of the challenges and triumphs of the diabetes journey through art, essay, poetry, and photography. Inspired by Diabetes is a collaboration between global champions Eli Lilly and Company and the International Diabetes Federation's United for Diabetes initiative.<sup>xii</sup>

- *Creating patient incentives*

Another promising approach is to create tangible incentives for healthy behaviors and Adherence. For example, Pfizer creates monetary incentives for its employees to quit smoking and to exercise.

In another example, The Lilly Diabetes Journey Awards program recognizes diabetes patients who have successfully managed their disease with the help of insulin for 25, 50, or 75 years or more. Since 1974, Lilly has presented more than 2,000 insulin medals to people affected by diabetes.<sup>xiii</sup>

- *Addressing Adherence and Access challenges through efforts to build customized outreach programs and services for lower-income individuals*

These efforts take the time to know and understand the needs, characteristics, and behaviors of particularly patient demographics. These programs can benefit ATM needs through their emphasis on prevention, health, and wellness particularly related to NCDs. Merck, for example, runs several programs such as:

- The Alliance to Reduce Disparities in Diabetes, which is an initiative aimed at improving the delivery of healthcare services among populations most at risk for diabetes such as African Americans, Hispanics and Native Americans. Funded by a \$15 million commitment from the Merck Company Foundation, The Alliance works to mobilize patients, healthcare providers and health organization leaders to work together at the community level to improve diabetes prevention and management.
- The independent, nonprofit Merck Childhood Asthma Network (MCAN), supports academic research to bring measurable quality-of-life improvements to children with asthma and their families. "We know the most effective methods

to manage childhood asthma. Our challenge is to communicate and implement these methods across the nation for every child, wherever he or she might live," says Dr. Floyd Malveaux Executive director of MCAN and former Dean of the College of Medicine at Howard University.<sup>xiv</sup>

- Joining with the Government of Botswana and the Bill & Melinda Gates Foundation to form the African Comprehensive HIV/AIDS Partnerships (ACHAP). In 2007, ACHAP expanded its support to target co-infection of HIV and tuberculosis (TB). The goal is to meet the treatment needs of the existing 137,000 Batswana (people from Botswana) living with HIV and future patients to the disease. The second phase initiatives include: the prevention of HIV, the critical need to treat people living with HIV for tuberculosis (TB), and program sustainability to allow Botswana to successfully address HIV/AIDS within its own borders.<sup>xv</sup>

- *Utilizing engaging, interactive technology*

For example, Pfizer's online Patient Education Resources provides patients and caregivers information, interactive health quizzes, tools to download, and tips on a variety of health topics, such as:

- Hemophilia
  - Rheumatoid Arthritis (RA)
  - Vaccines
  - Women's Health.<sup>xvi</sup>
- *Tying Patients to a larger Mission – Access to Medicines*

Some companies are experimenting with a form of "cause-marketing." Typically cause marketing encourages patients to purchase more by donating a percentage of sales to a

worthy cause. Watson Pharmaceuticals' "I Am Generess" digital campaign encourages patients to Adhere by linking their healthy behaviors to the support of those in need.

Watson launched an oral contraceptive, which in a crowded market, could not be differentiated based on cost or efficacy. Instead, they differentiated based on a social media campaign. Women who fill or refill their prescriptions earn virtual coins they can use to donate to a charity for women in need. The highly integrated campaign includes Web, mobile, Facebook, quizzes, and games, providing many opportunities for women to earn more coins. There is a sense of community as women see how the money has been donated overall.<sup>xvii</sup>

Taken together one distills some common lessons for high-potential program design:

- Understand and build hypotheses for the lack of Adherence
- Engage partners with subject-matter experience, Access to key networks, strong communication skills, and high levels of trust with target patient audiences
- Integrate key stakeholders from physicians, professional and informal caregivers, patients, pharmacists, family, friends, educators and others
- Start at the pilot level, learn what works, and move to replicate and scale success
- Maximize use of interactive technology, the web, and social-media tools

It is useful to provide further discussion regarding the latter point. On the question of technology and Adherence, Novartis CEO Dan Vasella told an audience at a health IT conference that high-tech "adherence monitors" such as internet programs that provide feedback loops to patients, instruments that can measure biometrics and transmit the data to caregivers, and new pill bottles that can remind the patient (by text message or blinking lights) to take medications are not enough. "These solutions are all fine and good, but I do not believe these technical approaches will solve the equation," Vasella said. "People are not just machines. People are human beings with social, biological and

psychological aspects that need to be addressed” if these solutions are to be effective.<sup>xviii</sup>

The key, as with the Watson Pharmaceuticals example above, is to use technology in ways that augment patient learning, connection with trusted networks, and understanding of the needs of targeted audiences.

### **3. Effective measurement and tracking of results**

Currently too many patient outreach, education, and Adherence programs are viewed as either philanthropy or good public relations. Given the stakes involved for public health and the company’s bottom line, one should treat these programs as critical corporate projects with specific goals and related performance metrics.

Any patient support program possesses a specific target for outcomes and payback. For example, one proposal suggests a consistent target of 50% Adherence over a 3-year time frame.<sup>xix</sup>

Companies will need to employ multiple data sources such as pharmacies, surveys, and virtual health coaches and networks to get data into the system for meaningful analysis and reporting. Yet examples show impressive results.

One program looked to increase the Adherence of those suffering from Type I or II diabetes Adherence to the drug Pramlintide, an adjunct hormone to mealtime insulin. Patients in an education and behavior modification program stayed on their treatment (Pramlintide) 50% longer relative to those not in the program.<sup>xx</sup>

For the mothers2mothers program, Merck found that in 2009, "mentor mothers" currently reach approximately 300,000 HIV-positive pregnant women and new mothers

annually. The mentor mothers employed to provide counseling and support received salaries totaling more than \$5 million (USD). Nearly every penny goes directly into local economies to purchase necessities, including food, schooling and secure housing for their families.

Merck's ACHAP partnership has helped reduce both the number of deaths and the spread of HIV/AIDS throughout Botswana. A sampling of its achievements:

- Saved more than 50,000 lives by cutting the mortality rate among adults in half,
- Provided treatment to about 90 percent of HIV-infected Botswana in need of treatment, compared to less than 5 percent when the program began,
- Delivered treatment and care from 32 ARV treatment sites and more than 170 clinics throughout the country,
- Enrolled more than 90 percent of pregnant HIV-infected women in treatment for the prevention of mother to child transmission (MTCT) of HIV, bringing down MTCT rates from more than 20 percent to less than 4 percent.<sup>xxi</sup>

#### **4. Reinvest Benefits into ATM Challenges**

As noted earlier, a serious impediment to Adherence efforts is reputational risks. The connection between Adherence and ATM – most notably the common patient populations that suffer from both issues – is strong.

An important element of the approach is to signal that reducing Adherence is not just to support the bottom line. The increased revenue acquired from greater Adherence should go to support funds that tackle ATM challenges. This can address both reputational risk, tie (as in the Watson Pharmaceutical example earlier) into Adherence strategies, and help address the financing shortfalls that plague ATM. Plowing a percentage of returns to ATM creates a virtuous cycle.

- Creates a different kind of “cause marketing” program. Instead of incentivizing purchasing, one incentivizes healthy behaviors
- Encourages healthy behaviors, minimizing revenue loss
- Promotes greater reputation
- Frees resources to support Access
- Saves lives
- Impacts the prosperity and development of communities, leading to new markets for pharamcos over the long term

## **Conclusion**

Adherence is a different side of the same coin as ATM. Incentives discourage a strategic response for both these issues. The way forward is to increase spend on education for adherence with the goal of boosting:

- Revenue
- Reputation
- Brand
- Accounting “goodwill” on the balance sheet

Pharmacos should implement:

- Better education & increased education spend
- Better use of technology
- Better external communications and promotions
- Strategic link to programs
- Rigorous measurement
- Target revenues to fund Access to medicine initiatives

MedTera is an integrated marketing solutions company dedicated to improving education, promotion and communications in the healthcare, life sciences and pharmaceutical industries—and a leader in D2D (Dimensional-to-Digital) solutions, driving audiences from high-quality, sensory-stimulating dimensional pieces to interactive online resources and mobile applications that encourage Life Long Learning.

AccountAbility is a leading global organization providing innovative solutions to the most critical challenges in corporate responsibility and sustainable development. Since 1995 we have been helping corporations, non-profits and governments embed ethical, environmental, social, and governance accountability into their organizational DNA. Our unique value proposition brings together leading-edge research, widely-recognized standards and strategic advisory services to deliver practical solutions for our clients.

**Quick Facts:**

- Offices in London, New York, Washington, D.C., Sao Paulo, Johannesburg, and Dubai
- Industry sectors: Financial Services, Pharmaceuticals, Energy and Extractives, Information, Communications and Technology, Consumer Goods, Food and Beverage
- Geographic regions: North America (US and Canada), Middle East (GCC), European Union, Latin America, India
- Focus areas: Research, Standards and Advisory Services

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<sup>i</sup> <http://mobihealthnews.com/6197/can-technology-address-medication-adherence/>

<sup>ii</sup> <http://www.who.int/mediacentre/factsheets/fs335/en/index.html>

<sup>iii</sup> <http://biz.yahoo.com/ic/510.html>

<sup>iv</sup> <http://healthed.typepad.com/healthed-blog/adherence/>

<sup>v</sup> <http://www.slideshare.net/HealthEdUS/healthed-championing-health-literacy-presentation-social-health-2010>

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[http://docs.google.com/viewer?a=v&q=cache:Y9zQwRTIGyIJ:www.indegene.com/whitepapers/Global%2520Blueprint%2520for%2520Patient%2520Adherence.pdf+how+much+do+pharmaceuticals+invest+in+patient+and+caregiver+health+education%3F&hl=en&gl=us&pid=bl&srcid=ADGEEShzAoQEog3Pt0aQzLawNDLETBKullIGEwyQCTYSeZW3Zl0-2ZBQ1aGV-](http://docs.google.com/viewer?a=v&q=cache:Y9zQwRTIGyIJ:www.indegene.com/whitepapers/Global%2520Blueprint%2520for%2520Patient%2520Adherence.pdf+how+much+do+pharmaceuticals+invest+in+patient+and+caregiver+health+education%3F&hl=en&gl=us&pid=bl&srcid=ADGEEShzAoQEog3Pt0aQzLawNDLETBKullIGEwyQCTYSeZW3Zl0-2ZBQ1aGV-fvmVj161UVelGeTfdG_Gu2K5JKg0OUC5d08u1X4E8Fce0FRjStAKY5ubJfb2qht4xNj7QnC9g)

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<sup>vii</sup> <http://healthed.typepad.com/healthed-blog/adherence/>

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[http://docs.google.com/viewer?a=v&q=cache:Y9zQwRTIGyIJ:www.indegene.com/whitepapers/Global%2520Blueprint%2520for%2520Patient%2520Adherence.pdf+how+much+do+pharmaceuticals+invest+in+patient+and+caregiver+health+education%3F&hl=en&gl=us&pid=bl&srcid=ADGEEShzAoQEog3Pt0aQzLawNDLETBKullIGEwyQCTYSeZW3Zl0-2ZBQ1aGV-](http://docs.google.com/viewer?a=v&q=cache:Y9zQwRTIGyIJ:www.indegene.com/whitepapers/Global%2520Blueprint%2520for%2520Patient%2520Adherence.pdf+how+much+do+pharmaceuticals+invest+in+patient+and+caregiver+health+education%3F&hl=en&gl=us&pid=bl&srcid=ADGEEShzAoQEog3Pt0aQzLawNDLETBKullIGEwyQCTYSeZW3Zl0-2ZBQ1aGV-fvmVj161UVelGeTfdG_Gu2K5JKg0OUC5d08u1X4E8Fce0FRjStAKY5ubJfb2qht4xNj7QnC9g)

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<sup>ix</sup> <http://www.lilly.com/responsibility/patients/Pages/outcomes.aspx>

<sup>x</sup> <http://www.lilly.com/responsibility/patients/Pages/outcomes.aspx>

<sup>xi</sup> <http://www.merck.com/responsibility/community/mothers2mothers.html>

<sup>xii</sup> <http://www.lilly.com/responsibility/patients/Pages/outcomes.aspx>

<sup>xiii</sup> <http://www.lilly.com/responsibility/patients/Pages/outcomes.aspx>

<sup>xiv</sup> <http://www.merck.com/responsibility/mcan.html>

<sup>xv</sup> <http://www.merck.com/responsibility/achap.html>

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<sup>xvi</sup> [http://pfizer.com/health/patient\\_resources/index.jsp](http://pfizer.com/health/patient_resources/index.jsp)

<sup>xvii</sup> <http://healthed.typepad.com/healthed-blog/adherence/>

<sup>xviii</sup> <http://mobihealthnews.com/6197/can-technology-address-medication-adherence/>

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[http://docs.google.com/viewer?a=v&q=cache:Y9zQwRTIGyIJ:www.indegene.com/white\\_papers/Global%2520Blueprint%2520for%2520Patient%2520Adherence.pdf+how+much+do+pharmaceuticals+invest+in+patient+and+caregiver+health+education%3F&hl=en&gl=us&pid=bl&srcid=ADGEEShzAoQEog3Pt0aQzLawNDLETBKullIGEwyQCTYSeZW3ZI0-2ZBQ1aGV-](http://docs.google.com/viewer?a=v&q=cache:Y9zQwRTIGyIJ:www.indegene.com/white_papers/Global%2520Blueprint%2520for%2520Patient%2520Adherence.pdf+how+much+do+pharmaceuticals+invest+in+patient+and+caregiver+health+education%3F&hl=en&gl=us&pid=bl&srcid=ADGEEShzAoQEog3Pt0aQzLawNDLETBKullIGEwyQCTYSeZW3ZI0-2ZBQ1aGV-fvmVjl61UveIgeTfdG_Gu2K5JKg0OUC5d08u1X4E8Fce0FRjStAKY5ubJfb2qht4xNj7QnC9gL93H7Nb&sig=AHIEtbSOWClhhW12fmLt3SFpj84KnR9pjpg)

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<sup>xx</sup> <http://www.slideshare.net/HealthEdUS/healthed-and-amylin-exl-digital-pharmawest-2011>

<sup>xxi</sup> <http://www.merck.com/responsibility/achap.html>