Improving Health Outcomes Through Customized Adherence Messages

Optimized multichannel communications will prevent illness and save lives

By Renee Selman, Adheris Health

James is active on Twitter, and George prefers printed materials. Armed with these insights, providers and payers across the healthcare continuum will reach out to health consumers in more sophisticated ways when they are in crisis, before they are diagnosed, or even before they get sick.

Segmentation analysis

At Adheris Health, we are using predictive modeling and segmentation techniques to identify health consumers who are more or less likely to be adherent. And we are starting to have a group of key patient-population variables that improve the probability of intervention and medication adherence success.

The potential is tantalizing. Three years ago, using HIPAA-compliant data on 175 million health consumers in our US retail prescription database, we looked at a cohort of 100,000 consumers receiving medications to treat depression, COPD, diabetes, high cholesterol and hypertension. We segmented and subdivided these groups by relevant parameters (age, gender, income variables, length of time on medication, number and type of comorbidities, etc.) and used logistic regression models to predict which health consumers were likely to be non-adherent over a six-month period. Our data mining techniques were able to predict non-compliance with 70.4% accuracy, thus identifying which health consumers should be the focus of personalized, multichannel educational and reminder campaigns.

Adherence messages – today and tomorrow

Today’s state-of-the-art adherence communication involves the analysis of historical prescription fulfillment behavior—e.g., length of therapy, timeliness of filling prescriptions, number and type of medications consumed and the like. Using this analysis, it’s possible for health consumers to receive semi-personalized drug information today at the doctor’s office, during face-to-face talks with a pharmacist, and via mail, email or text recall reminders.

At it’s best, the approach resembles the story of Ann. Yet this is far from the norm. More commonly, health messages are akin to white noise, neither integrated nor personalized. Consider a typical diabetes patient—perhaps an individual of modest means and limited medical access or literacy. This person gets hammered by indiscriminate, one-size-fits-all messages over mass channels: “eat more of this, eat less of that, lose weight, shop intelligently.” Nothing in the barrage is customized or relevant to the individual’s circumstances because companies generating the messages can’t see the case history, social status, state of disease or emotional disposition of the health consumer, nor how the individual wishes to be addressed.

In reality, health consumers are heterogeneous. Patterns in drug adherence are shaped by cultural, social and economic distinctions, genetic factors, unique personal preferences, and the health consumer’s journey from early- to mid- to late-stage illness. As technology improves and the accountable care model spreads, adherence efforts will take patient diversity as a starting point.

Compiling communication preferences through voluntary surveys and through analysis of the impact of different communication vehicles, we’ll know that Sue ignores email, and John automatically checks his phone. Two developments are now poised to remedy this predicament. The first is the rise of accountable care organizations (ACOs) under the Affordable Care Act. These provider/payer collaborations encourage teams of physicians and hospitals to coordinate their efforts on behalf of health consumers. At the same time, Section 1311 of the national health law calls for incentives and rewards for medication- and care-compliance initiatives. Whether or not Section 1311 is enforced, ACOs will either succeed or fail based on their ability to keep health consumers out of the hospital. Simply put, non-adherence is one of the surest routes to failure.

The second development is the rapid growth of medical repositories, such as electronic health records (EHRs) and prescription databases, and the analytics that make sense of the information. Last summer, the Robert Wood Johnson Foundation’s annual report on health information technology (HIT) noted that in 2012, 44% of hospitals had basic EHRs in place, an increase of 17 percentage points from 2011, and 42% were using a full complement of HIT tools, up from 18.4% the year before.

Mining prescription evidence

Adheris Health has partnered with major suppliers of EHRs to provide direct patient interventions in the physician office setting. We couple this with our ability to communicate with more than 175 million Americans through our retail pharmacy network. Indeed, our network of more than 40 pharmacy partners spans 30,000 pharmacies, representing 65% of all retail prescriptions written in the US. Leveraging these assets, we’ve become the nation’s largest provider of direct-to-consumer medication adherence programs. Our client base includes all the top 20 pharmaceutical manufacturers. Last year, our data contributed to 1.5 billion communications targeted to specific patients across multiple points of care.

Five touchpoints

Ann’s story helps us visualize where our industry currently stands and how it will look in the near future. Her first informational session takes place in the doctor’s office, where she receives educational information sponsored by the medication manufacturer explaining how her new diabetes medication works, how to save money on copays, and why it’s important to pick up her prescription promptly. Because her electronic profile shows a preference for text messages, her reminders arrive in this form as soon as the medicines are ready at the pharmacy she named when she joined the physician’s patient portal.

When Ann goes to pick up her meds, she receives additional tips on blood glucose monitoring and more information on cost-saving—a priority that surfaces in her profile. Her pharmacy will mail her printed material summarizing the tips that were explained during her visit. The content and tone of these messages reflect an understanding of how Ann is likely to respond to the therapy, based on our segmentation model. Down the road, if she is late on her prescription, she’ll get additional coaching. By mail, she

Accountable Care and Big Data

Inability to stick with a treatment regimen has profound consequences for millions of health consumers, and for the nation’s health system at large. Prescription medication non-adherence is thought to cause about 125,000 deaths annually in the US, at least 10% of hospitalizations [1], and avoidable costs estimated to be between $160 billion and $289 billion each year. [2]

References:

About the Author

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remediation costs. Indeed, several of the above-mentioned supply chain quality issues were actual events that went unaddressed, exacerbating the issues and increasing costs.

Shared attributes of poor quality

When considering drivers of poor quality, we have identified several attributes to avoid, as they tend to propel companies toward increasingly severe quality issues. These include process, people and technology factors such as: redundant or non-value-added quality processes; cumbersome processes that lack clarity or require considerable effort to execute; finger-pointing and lack of accountability for results; lack of strong talent in leadership positions; under-developed training programs; and lack of technology integration across various data sources.

Suggested remediating actions

To reduce the potential for quality issues and the resulting ramifications of a Consent

Decree, we suggest several remediation actions:

- Incorporate quality into product design and development – Companies should implement a product lifecycle management (PLM) approach in which manufacturing and quality parameters are incorporated into product design and development, leading to a higher-quality, lower-risk manufacturing environment.
- Design a sustainable quality system — As companies revise their quality standards, procedures, processes, and documentation they should design a system that is both compliant and sustainable for the business.
- Create a culture of quality — Organizations should move beyond compliance to create a culture of quality and cross-functional buy-in to prevent future quality issues.

By adopting a proactive, sustainable process to identify and remediate potential or existing supply chain quality issues, life sciences companies can emerge as stronger, more compliant organizations that are well-positioned for long-term success.

Information Technology

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will also receive an invitation to participate in a clinical trial for a new insulin product. The enrollment will be swift because our software has already confirmed that she meets the recruitment criteria.

From this example, the benefits of an extended medical team armed with data insights and analytics is clear. We can reach the health consumer at every touchpoint: the physician’s office, the pharmacy, the home, social platforms such as Facebook, and one day, advanced text messaging services such as WhatsApp. The enablers, at every step, have access to data and tools to parse the information from a clinical, behavioral-science and marketing perspective.

Structural concerns and topline pressure

For pharma, forging more robust communications with health consumers is critical at a time when traditional advertising has lost some of its charm. Direct-to-consumer (DTC) campaigns may be effective in prompting consumers to ask their doctors about products, but our own research shows that these one-size-fits-all messages don’t sway medication adherence. Instead, we have identified the following five conditions as the factors most likely to spur patients to refill their prescriptions:

1. The prescription should be written with multiple refills
2. The copay should be as low as possible, or be paired with copay assistance
3. A higher number of days’ supply is better than a lower number
4. Adherence is positively impacted when the physician is a high-volume prescriber for the particular class of drug
5. Adherence improves if the patient has prior experience taking the medication.

As more pharmaceutical companies come to recognize the limitations of DTC advertising, multichannel adherence initiatives will gain greater appeal. But how long will it take for this field to truly deliver on its promise? On this point, ACOs may serve as a kind of benchmark. As of July 2013, there were 488 such organizations, according to healthcare consultants Levitt Partners—more than three times the number in the first quarter of 2012. Most of them aim to compensate participating hospitals and physicians based on improved outcomes for health consumers, not the volume of tests and interventions performed. Once pay-for-performance becomes the norm, medication adherence will move to center stage.

Dawn of multichannel communications

For many years, marketing pundits have heralded a new age of multichannel communications. Yet in healthcare, progress has been slow and medication adherence has suffered. Even today, according to the American Academy of Family Physicians, six out of 10 health consumers in the US fail to take their meds as prescribed. Our own research shows that abandonment rates run between 20% and 40%, depending on the disease state. In addition to the medical and financial tolls this takes, there are less visible consequences. Non-adherence drops down return on investment for manufacturers of new drugs, with a negative impact on innovation.

In the face of many challenges, the combined momentum in accountable care, digital health data and new analytic capabilities are generating the first reliable glimmers of light. As an industry we must continue to customize, personalize and optimize communications using multiple channels to educate and motivate health consumers. We also must be able to connect the data insights and analytics on a patient to the delivery of their communications. By doing so, we will be able increase adherence, encourage healthier behavior, improve outcomes, and conserve precious financial resources across the healthcare landscape.

Clinical Operations

How secure are your laboratory refrigeration systems?

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simple definition of cold-chain management that is limited in focus to shipping operations, to a broader definition that includes continuous monitoring inclusive of the cold-storage units at either end of the shipment. It is an inconvenient truth that the vast majority of ULT failures are both predictable and avoidable. The avoided operating costs in terms of energy savings, reduced maintenance and repair costs will, in most instances, pay for a state-of-the-art monitoring system in three years or less. The avoidance of intangible costs associated with loss of products or specimens is priceless—as Harvard will no doubt acknowledge.