

# Anticipatory Care Management: Medication Adherence Interventions

July 2007  
Krames Patient Education



# Table of Contents

Why Anticipatory Care Management .....	3
What Is Anticipatory Care Management: Medication Adherence Interventions? .....	4
How Medication Adherence Interventions Work: Design. ....	5
Putting Medication Adherence Interventions to Work for You.....	6
Anticipatory Care Management: Are You Ready? .....	7

## Why Anticipatory Care Management

The promise of engaging consumers in their care to improve outcomes, increase satisfaction and lower costs is at hand. Data analysis tools help us predict the future costs of ill people and people likely to become ill in the future. Actionable, behavior-based education is available to be dispensed at the time when your member needs to make a better health care decision. Anticipatory Care Management programs facilitate the use of available data to target high-risk people who can benefit from early intervention. And that can prevent high-cost events. Prevention that not only improves outcomes, but makes a real difference to your bottom line.

Current data collection and management capabilities give health plans the ability to segment their members into identifiable groups for targeted wellness and disease management programs and to assess the success of those programs over time. Yet, healthcare could do a great deal more to make the most of its data. Education interventions can be 'triggered' by moments in care. Low-cost interventions can reach entire populations at risk for a high-cost event by changing a behavior or causing an action that can save dollars while ensuring better outcomes.

Consider the example of HealthPlus, a Michigan managed care company. HealthPlus identified patients who appeared not to have filled diabetic, high blood pressure and cholesterol medications and mailed personalized educational information to these patients about why they should take their medicines. After three years of tracking results, 77% of

noncompliant patients with high blood pressure, 56% of noncompliant diabetic patients and 49% of noncompliant cholesterol patients were taking their medications.<sup>1</sup> While chronically ill patients might use several hundred dollars' worth of prescription medicines each month, the cost of a night in a Michigan hospital is nearly \$4,000. A study from Cutting Edge Information states that as many as 125,000 deaths and up to 20% of all hospital and nursing home admissions result from patients failing to take their medications or not taking them properly.<sup>2</sup>

The HealthPlus example demonstrates the power of *anticipating* high-cost events and *managing* a risk with cost-effective educational support. Krames Anticipatory Care Management Medication Adherence Programs takes this concept further by building out comprehensive, easy-to-implement interventions to ensure members are complying with their medication protocols.

# What Is Anticipatory Care Management: Medication Adherence Interventions?

- 65% of All Prescriptions Show Non-Compliance with Directions<sup>3</sup>
- Educational Interventions ... can be effective in improving adherence<sup>6</sup>
- 33% of all Prescriptions are not even filled<sup>4</sup>
- Medication-Related Hospital Admissions . . . cost approximately \$100 billion a year.<sup>5</sup>

The statistics cited above demonstrate both the need for Medication Adherence Interventions and the fact that educational interventions can work. In developing its program, Krames focused on chronic disease states in which medication adherence has been proven to decrease costs while improving outcomes. At launch the disease states addressed include:

- High Blood Pressure – 1999–2000 study showed in US antihypertensives prevented 86,000 deaths and 833,000 hospitalizations.<sup>7</sup>
- Asthma – Published study showed that pediatric management program lowered ER visits by 50% and hospitalizations by 15%.<sup>8</sup>
- High Cholesterol – Study showed adherence to medication plan yielded a \$5.10 to \$1 ROI.<sup>9</sup>

The Krames Medication Adherence Interventions consists of 40 interventions spanning 4 categories:

- **Initiation** (specific to drug classes)  
Trigger: Initial use of a medication  
Message: Understand why medication has been prescribed and how to take it properly; anticipate possible adherence considerations before they lead to non-compliance
- **Noncompliance** (general for all drugs that are used to treat a condition or aspect of a condition)  
Trigger: Lapse in or no history of use of recommended medication

Message: Resume taking medication or consult healthcare provider; address issues causing noncompliance

- **Special Considerations**  
Trigger: A particular aspect of a medication affects recipient's condition or usage of other medications  
Message: Take appropriate measures to address consideration
- **Medication Management**  
Trigger: Recipient uses multiple medications  
Message: Take medications safely and according to regimen

The messages range between 350 and 2,500 words in length (most are about 900-1,000 words) and are written at a sixth- to eighth-grade reading level on the Flesch-Kincaid scale. The messages that cover device usage are illustrated.

The content was developed by Krames' editorial team and is based on evidence-based practice guidelines from associations such as the AHA and the NHLBI. A panel of practicing clinicians—including a cardiologist, two pharmacists, and two nurse educators—reviewed the content for accuracy and consistency with current clinical practice. A process is in place to keep the information current in terms of guideline changes and new drugs and recalls. The content can be customized to meet a client's specific requirements.

## How Medication Adherence Interventions Work: Design.

Krames Medication Adherence Interventions are based on clinical guidelines and have at least one of three objectives.

- Create Awareness
- Drive an Action
- Change a Behavior

Depending on what triggers the intervention, an intervention can meet multiple objectives.

Each intervention, in turn, has two elements:

- The logic that determines which individuals should receive an intervention (the variables that identify an eligible recipient of the intervention) and under what circumstances (the triggering events driving message delivery).
- The Educational Message

It should be noted that the variables that identify eligible recipients of an intervention are defined in multiple ways to accommodate various data types that may be available.

### Population Health Management: Coronary Artery Disease Medication Adherence

The Coronary Artery Disease Medication Adherence Program targets those individuals identified as at-risk for Coronary Artery Disease and have been placed on medication to manage high blood pressure, high cholesterol or aid in smoking cessation. The clinical guidelines underlying the hypertension program are AHA and JNC 7. The High Cholesterol Interventions are based on AHA and ATP III. The Smoking Cessation Intervention is based on AHA, JNC 7, APTIII, CDC, and HEDIS.

#### Sample CAD Medication Adherence Intervention CAD-6 – Understanding Use of ACE Inhibitor

- Target if
  - DISPENSING\_EVENT for ACE\_INHIBITOR and HYPERTENSION
- Message
  - *Taking ACE Inhibitors to Manage your Blood Pressure*
- Event Trigger
  - First Appearance of Medication (Create Awareness) or

- Subsequent appearance of medication after lapse of 2 years since last message
- Objectives
  - Create Awareness
  - Drive Action

### Disease Management: Adult Asthma Medication Adherence

The Adult Asthma Medication Adherence Program targets adults who have been diagnosed with Asthma and can be implemented as an adjunct to existing disease management programs. Each of the 21 interventions in the Asthma Medication Adherence program is based on NHLBI guidelines.

#### Sample Asthma Med Adherence Intervention ASTHMA -31 – Always Have Quick-Relief Medication Available

- Target if
  - ASTHMA and not DISPENSING\_EVENT during past 12 months for (and) SHORT-ACTING-BETAA2\_AGONIST ANTICHOLINERGIC
- Message
  - *Never be without Your Quick-Relief Inhaler*
- Event Trigger
  - One-year anniversary of program initiation if target Dx was present at start-up or
  - One-year anniversary of first appearance of target Dx if not present at start up and
  - Every 1-year anniversary of first message
- Objectives
  - Behavior Change
  - Drive Action

Krames Medication Adherence Interventions have been created as part of larger Anticipatory Care Management Programs covering Coronary Artery Disease and Asthma. (See Krames White Paper – *Anticipatory Care Management Position Paper*). However, due to the positive

impact proper medication adherence can have on driving down health care costs by avoiding hospitalizations and poor outcomes down the road, we offer Medication Adherence programs as stand-alone programs. As such, Krames

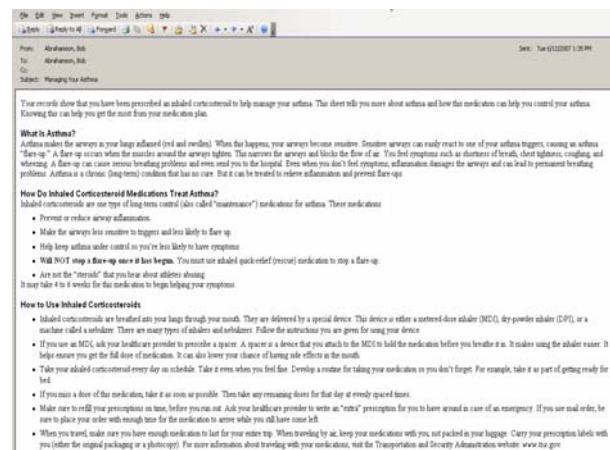
Medication Adherence programs have utility for PBMs as well as retail pharmacy outlets looking to build relationships with consumers in their community.

## Putting Medication Adherence Interventions to Work for You.

The Krames Medication Adherence Interventions provide logic and messaging that you can implement in a variety of ways to meet your key objectives surrounding lowering healthcare costs by driving positive behavior change specifically in the areas of medication compliance. This approach gives you the flexibility to deliver the message in a way that is suitable to your existing systems and infrastructure. Think of our interventions as Lego's that can be snapped into a variety of shapes (programs) providing the best fit for your organization.

The Mail/Phone group receives a letter with a call to action to call a care management phone line.

### Case Study 1: Asthma Interventions – Online versus Mail Based/Telephone based Intervention.



Your Health Plan has decided to target members who have been prescribed inhaled corticosteroids for long-term asthma control to assess relative adherence rates between groups who receive intervention and those who don't as well as to gauge the effectiveness of online interventions versus a mail based/phone based intervention. Your data is scanned looking for the first incidence of a filled prescription for an inhaled corticosteroid along with a recent diagnosis of asthma. You can split members that qualify into three groups – one that receives the online communications, one to receive the mail/phone interventions, and a control group that receives no intervention.

Fig. 1 – Message in E-Mail

The beauty of the Medication Adherence Interventions is that regardless of delivery platform, members can receive the same message. In this case, both test segments would receive ASTHMA-17 – *Understanding Reasons and Proper Use of Long-Term Asthma Medication, Specifically Inhaled Corticosteroids*. The online test group would receive the message in an e-mail along with a call to action to join an online asthma management program.



Fig. 2 – Message in a Letter

Regardless of which group a member belongs to, a triggering event will generate the same message. At the end of the study you will be able to determine the impact of providing an education intervention as well as the best modality for reaching your members.

#### Case Study 2: Retail Pharmacy / Health Plan Medication Adherence Partnership Project

There are a lot of member touch points when it comes to managing health. There are also many factors that can have an impact in driving behavior change. This program leverages the healthcare professionals that consumers interact with the most – the local pharmacist plus an incentive-based approach to driving behavior change. The objective for the Health Plan was to encourage at-risk individuals to continue with their cholesterol-lowering medication. For the Retail Pharmacy, they wanted to encourage repeat visits and exploit cross sell opportunities from consumers who had previously filled a prescription for a cholesterol-lowering medication in their store. In this program, the health plan processes claims data to segment claims for cholesterol-lowering prescriptions filled by their retail chain partner from members due for a refill. For members with a lapsed prescription, a mailing is sent out featuring CAD-32 – *Understand Reasons for Taking Medication*

*to Control High Cholesterol; Understand Possible Barriers to Adherence and be Aware of Options/ Solutions–* - and a map to the nearest retail partner's outlet plus a page of personalized coupons for products available at the pharmacy. Costs for this program are shared by the Health Plan and Retail Pharmacy. The program was designed to benefit all stakeholders:

- Health Plan – Lowered long-term healthcare costs via avoidance of adverse events
- Retail Pharmacy – Increase in market share
- Member – Better health outcomes and stronger connections with a local merchant and health plan.

These are just two examples of how Krames Medication Adherence Interventions can be implemented. Digitally or via hard copy, the Interventions provide you with the core messaging designed to help your members comply with medication protocols. Your Krames representative is available to work with you in designing a program to implement the Medication Adherence Interventions.

## **Anticipatory Care Management: Are You Ready?**

Actionable, behavior-based education is available to be dispensed at the time when your member needs to make a better healthcare decision. Anticipatory Care Management programs facilitate the use of available data to target high-risk people who can benefit from early intervention - prevention that not only improves outcomes, but makes a real difference to your bottom line. Krames Anticipatory Care Management programs can put it all together for you. Are you ready?

---

## Contact Us

---

Krames has been the leader in patient education since 1974. Krames content can be found in over 80% of US hospitals, is used by over 300,000 providers in doctors' offices nationwide, and used by leading managed care and disease management organizations nationwide. Annually, Krames content touches 40 million lives.

We know that when patients are educated, their outcomes improve. And when health improves, so does your bottom line.

Contact us to learn how we can help your organization.

Customer Service: 800.333.3032  
Toll Free Fax: 866.722.4377  
Business Development: 267.685.2519  
Main Switchboard: 267.685.2300

Krames-Corporate HQ  
780 Township Line Rd  
Yardley, PA 19067

Krames-West Coast  
1100 Grundy Lane  
San Bruno, CA 94066

Email us at: [info@krames.com](mailto:info@krames.com)

### References

---

<sup>1</sup> "Insurers Take On Patients' Lapses," Detroit Free Press, August 13, 2006.

<sup>2</sup> "Pharmaceutical Patient Compliance and Disease Management – The Cost of Noncompliance." Cutting Edge Information, 2005.

<sup>3</sup> Wilson Health Information and the J. Scott Group. Prescription Compliance Study. July 2006.

<sup>4</sup> "How You Can Help Doctors Help Patients Take their Medicine" Berliner, Daniel, MD. Pharmaceutical Representative. April 2005.

<sup>5</sup> "Adherence to Medication" Osterberg, Lars MD., Blaschke, Terrence, MD., The New England Journal of Medicine, pg 488, Aug. 2005.

<sup>6</sup> Ibid. Pg. 491

<sup>7</sup> "The Impact of Antihypertensive Drugs on the Number and Risk of Death, Stroke, and Myocardial Infarction in the United States, Long, G, et al, National Bureau of Economic Research Working Paper No. 12096, March 2006.

<sup>8</sup> "Impact of an Asthma Program on the Quality of Life of Children in an Urban Setting." Munzenberger, PJ and Vinuya, RZ, Pharmacotherapy 22, no. 8 pg. 1055-1062. 2002

<sup>9</sup> "Impact of Medication Adherence on Hospitalization Risk and Healthcare Cost" Sokol, MC et al. Medical Care 43, no 6. (521-530), 2005