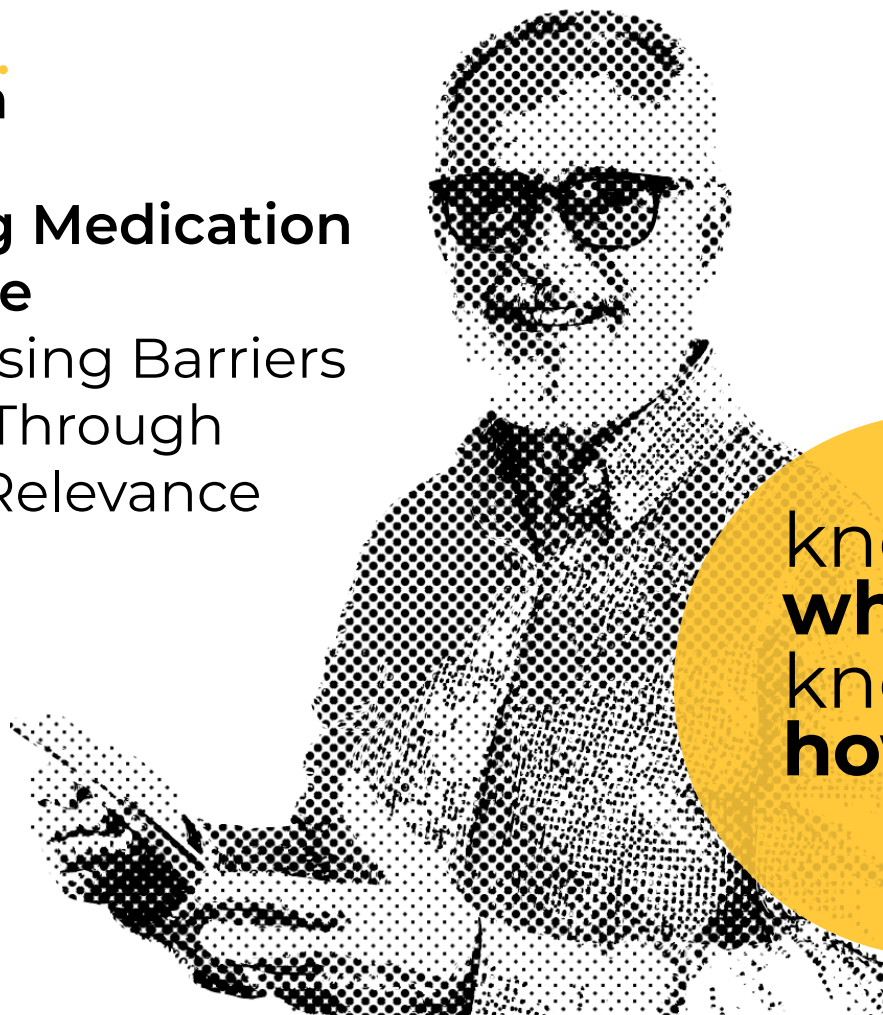




Improving Medication Adherence

by Addressing Barriers to Action Through Personal Relevance



know
why.
know
how.

Executive Summary

Behavioral Science shows that non adherence to chronic medication can often be attributed to barriers to action. Research also shows that by addressing member specific barriers and providing relevant **Calls To Action (CTAs)** and solutions, members can be persuaded to adhere to their drug regime. The challenge, however, is in identifying each member's unique barriers to action. Traditional methods include interviewing members by a PCP, care coordinator or pharmacist but those don't scale well for organizations with tens of thousands of members. MedOrion has found a unique method of identifying barriers to action using member data. By combining ML/AI algorithms with Behavioral Science studies MedOrion has developed an **Electronic Behavioral Record (EBR)** that models and measures members' health behavior. MedOrion provides SaaS solutions that use the data in the EBR to scale efforts that drive adherence to medication.

MedOrion's Strategy to Scaling Medication Adherence

The keys to scaling medication adherence are in a technological infrastructure that provides automation and control over the processes of understanding member's barriers to action, addressing the barriers with specific CTAs, measuring the impact of the CTAs, uncovering struggling subgroups and iterating on them.

How Does it work?

Behavioral Persuasion Management

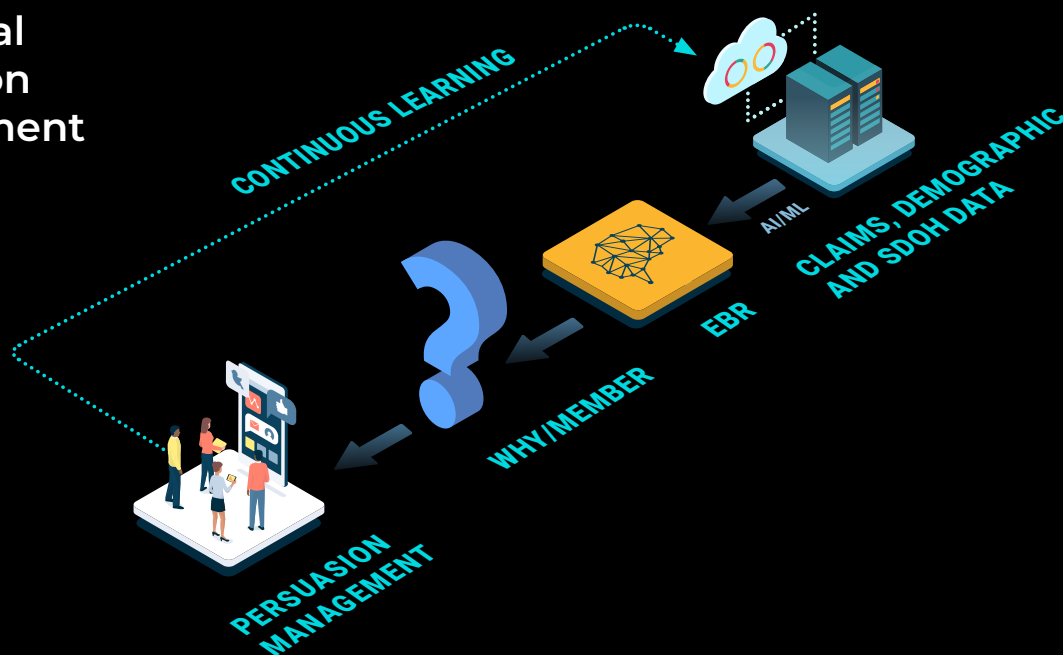


figure 1

Automated Understanding of Member's Barriers to Action

Using Behavioral Science research and AI/ML techniques MedOrion has developed a Medication Adherence Decision Model. This Decision Model identifies member's barriers to medication adherence as a set of discrete barriers that can be addressed by specific Calls To Action.

Medication Adherence Engagement Strategy

How do you know what **barriers** are preventing people from taking their medications

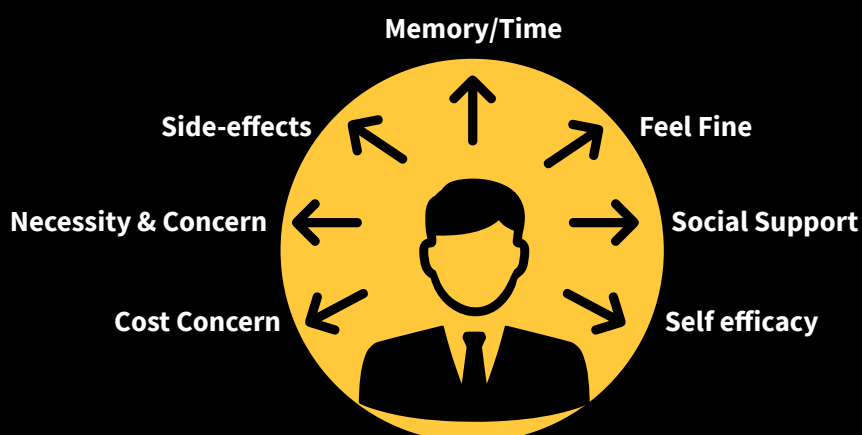


figure 2

The Decision Model also uses member specific data to calculate, for each member, the prominence of each barrier to action. To automate the process of identifying barriers to action MedOrion's SaaS infrastructure continuously harmonizes Claims, Social Determinants of Health (SDoH), and Demographic data into a unique member record and maintains these records as data changes over time. The member records are continuously fed into MedOrion's Medication Adherence Decision Model which updates MedOrion's **EBR** with the prominence of each member's specific barriers to action.

Addressing Barriers to Action

Health plans work diligently to offer effective solutions and Calls To Action to help their members overcome medication adherence barriers to action. However, it often occurs that members are unaware of the plans' solutions, or that plans are unaware of members' specific barriers to action. With MedOrion's EBR technology each member's barriers to action are modeled, measured and maintained. With MedOrion's Pharmacy solution plans can map between their CTAs and the Decision Model's barriers to action.

Creating Personal Relevance

The image displays five email templates designed to address medication adherence barriers. Each template features a header with a title and a sub-header, followed by a body of text and a call to action. The templates are arranged in a grid-like fashion, with a yellow label below each one.

- Side-effects:** The first template is titled "Let your medication work for you: How to solve problems with side effects". It includes a "Dear ," salutation and text about side effects, a link to "contact your doctor", and a section for "You can also talk to your local pharmacist".
- Cost Concerns:** The second template is titled "Tips to help you manage your health and prescriptions". It includes a "Dear ," salutation and text about filling prescriptions on time and taking medications regularly. It also includes a link to "find out about alternative medications or generics that have lower copays".
- Feel Fine:** The third template is titled "Feeling unsure about your medication? Blue Cross can help.". It includes a "Dear ," salutation and text about recently starting a new medication and a link to "click here to make an appointment".
- Memory/Time:** The fourth template is titled "3 tips to take your health management to the next level". It includes a "Dear ," salutation and text about maintaining healthy routines and a link to "click here to make an appointment".
- Cost Concerns (continued):** The fifth template is titled "1. Follow your treatment plan and take medications as prescribed". It includes a "Dear ," salutation and text about following the treatment plan and a link to "click here to make an appointment".

figure 3

This solution provides the plan with the capability to map between the solutions they've created for the member's medication adherence barriers and the member's who need them. This is the cornerstone of Personalization and creating Personal Relevance in member communications.

Personalization and Personal Relevance vs. Segmentation

Segmentation solutions classify members into a specific segment and from there on the member remains in that segment. But, in reality member behavior is more complex and cannot be modeled into a set of segments. From the members perspective a lot of the assumptions made about a segment are not personally relevant, which means that the communications based on these assumptions are not relevant to them either. This leads members to gradually devalue these communications and find their answers elsewhere.

MedOrion's solution does not segment members, rather each member is addressed according to the prominence of each of their barriers to action. Using the member specific record in the **EBR**, MedOrion matches each member with communications, designed by the plan, that address their most prominent barrier to action. As time progresses and member data changes and barrier prominence changes MedOrion adapts the communication to the member record maintained by the **EBR**. This ensures that the members are met with the communications that are personally relevant to them and have been designed by their health plan to help them overcome their barrier to action.

To understand the level of personalization and personal relevance that MedOrion provides let's use figure 2 as an example of a discrete set of barriers to action for medication adherence and let's assume we touch members 7 times in a calendar year. Each member can have any combination of prominence of barriers, so MedOrion can generate 5,040 (7! factorial) different experiences. But in reality there are different ways of addressing each barrier, for example emotional or cognitive messages which can lead to **over 17M** different member experiences over the course of 7 touches. This method can only be calculated and maintained with AI technology and is much closer to modeling the real world complexity of member behavior.

From Personal Relevance to Adherence

By basing member communications off their unique records in the **EBR** MedOrion ensures that members are met with CTAs designed by their plan to remove barriers to action. This personal relevance and the effectiveness of the plans **CTAs** lead to an above average engagement in member communications in terms of percentage of members engaged and sheer volume of each members engagement. The results below detail the engagement rates across Q4 2020.



Digital Engagement Results

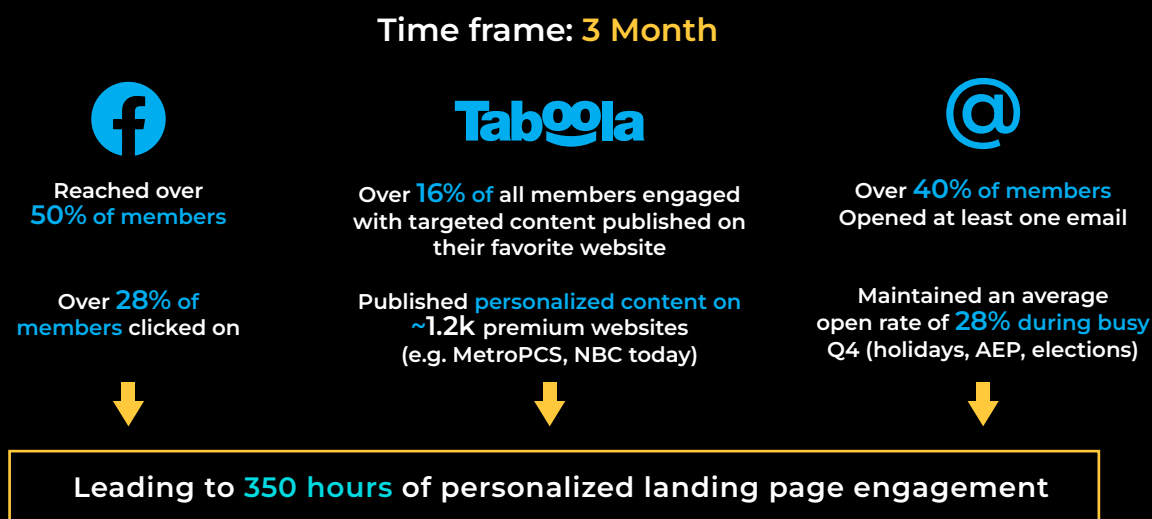


figure 4

However, engagement is not enough to ensure that Medication Adherence rates are improved. MedOrion's platform automatically generates a random test group that can be used to track statistically significant outcomes. The image below shows that in the 3 months of Q4 2020, correlating with the high engagement rates above we can see a statistically significant improvement in Statin Medication adherence across 90k members distributed randomly across control and MedOrion groups.

Persuasion – Impact Vs. Control

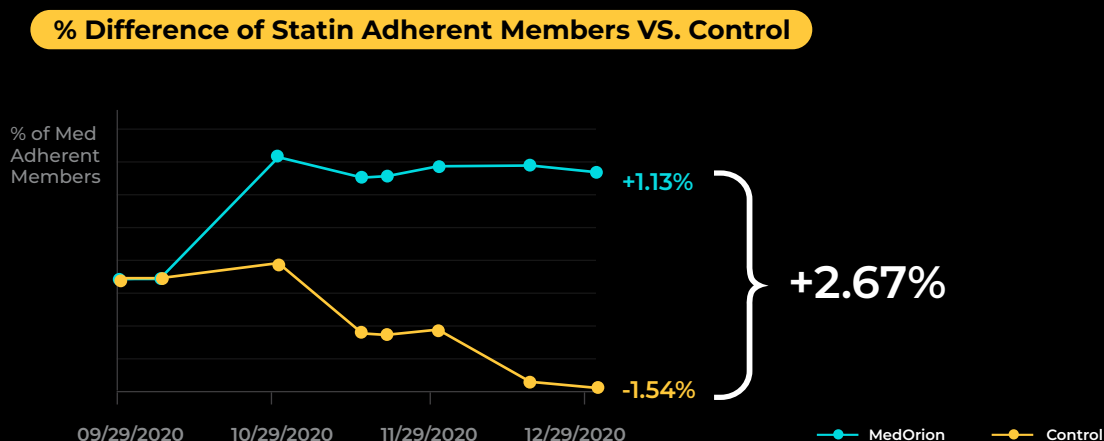


figure 5

Engagement in Q4 is exceptionally complex as Q4 has Thanksgiving, Christmas and AEP which often steer members away from health related messages. We can see from both of the results above that through personal relevance generated by the plans specific CTAs and MedOrion's technological capabilities that ensure members see the relevant CTAs it's clear that MedOrion helped plans to increase adherence rates and maintain them throughout Q4, while the control group gradually declined in adherence rates.

Iteratively Improving Adherence Rates

While the engagement rates were high and the results effective there is always room to do better. Adopting measurement techniques (Uplift Modeling) from leading B2C organizations (Google, Uber, Bookings.com) to the healthcare space MedOrion is able to measure, for each member, the increase in probability of Medication Adherence. Using MedOrion's capabilities plans were able to identify that for members with PDC (Percentage of Days Covered) rates dropping below 60% the engagement rate and outcomes decline.

Iterative Improvement

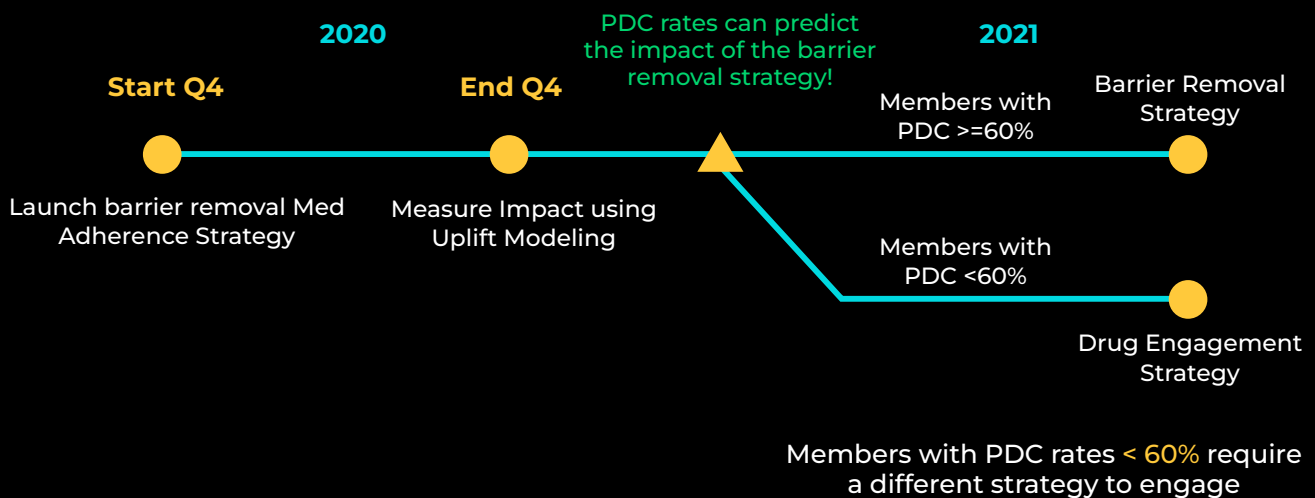


figure 6

Behavioral Science explains this outcome. Members with PDC rates below 60% do not have barriers to action, rather they are not yet convinced that taking their medications is right for them and that's the reason the barrier removal strategy loses its efficacy in members with PDC rates below 60%. Using MedOrion it was easy to create a set of communications designed for members who do not want to take their medications.

Using the combination of Randomized test and control groups and Uplift Modeling plans can continuously identify areas of improvement and address them with measurable techniques.