



Healthcare Analytics

Must The Road To Success Be Littered With The Debris Of Failure?

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By establishing the right foundational approach coupled with the right platform, organizations can drive transformation.

I used to work in food service at a dog track – one of the oldest at the time – in the 1980's. Being the animal lover I am, I'm thankful it's no longer in business. It was a strange place for a 15-year-old to start a long and winding career path that would eventually lead me to where I am today.

I met all kinds of professionals back in those days. Some even had movies made about them, lost a lot of money, and from some I learned invaluable lessons I didn't quite understand at the time. "The road to success is littered with the debris of failure," was one of the idioms Big Sal would dispense to me at the track when I brought him his coffee and breadsticks, as he tossed his latest losing box trifecta ticket into the empty breadbasket.

And so, too, can these words of wisdom apply to the world of healthcare analytics today. A long road that has fragmented components of failed installs and undesirable results with no value or ROI on the horizon. Potholes filled with wasted budgeted dollars and promises of analytics that can support the enterprise still in the starting box. There goes Swifty!

I was chatting recently about the current state of affairs with a colleague and EVP of Payment Integrity for a large national carrier. He likened these dynamics to the "Burning Platform." First introduced in Daryl Conner's *Managing at the Speed of Change*, the metaphor of the "Burning Platform" has been used for nearly 30 years to describe a high level of urgency regarding a change initiative.

To paraphrase, suppose an oil platform is on fire. A worker must decide to either jump from the 150 ft. high platform and take a leap of faith - with the possibility of dying - or stay and face certain death. He jumps because he has no choice; the price of staying on the platform, of maintaining the status quo, is too high. He lives, mercifully, with the debris of failure burning all around him.

To be effective with healthcare analytics and the varying degrees of possible solutions, we would be wise to listen to Big Sal, but become the success along the way. It's not that the road to effective healthcare analytics must lead to failure; but, rather, it requires the ability make strong decisions with keen knowledge and understanding to make the leap of faith of success. And with the increased ability to leverage data, machine learning, and AI, there is no better time to jump from the "Burning Platform" than now. To stay is to risk falling further behind the ever changing and more complex landscape that is healthcare analytics.

According to Reports and Data, the global healthcare predictive analytics market was valued at \$2.9 billion in 2018 and is estimated to reach \$22.4 billion by 2026 at a CAGR of 29.8%. There is no shortage of needed data or custom healthcare software ready to tackle the challenge. The dilemma is how to make this data actionable.

At AMS we provide an in-house solution to tackle many of the most vexing issues around affordability of care. AMS' AI-powered Predict Platform combines clinical insights and financial analysis of the costliest and most complex medical diagnoses to guide enterprise-wide initiatives. It's a big sentence with multiple meanings, and I often find myself breaking it out for our clients into three buckets: Analytics, Intelligence and Integrity. Let's focus on the first one, Analytics and the basics. With real world examples of course.

What is the difference between **diagnostic/descriptive analytics** and **predictive/prescriptive analytics** and **predictive modeling**?

In simplest terms, Analytics is extracting useful information from the data. The aim is to support decision making, be it operational or strategic. Because of the complexity involved linking them back to enterprise initiatives and some of the marketing language used it is important to understand all four.

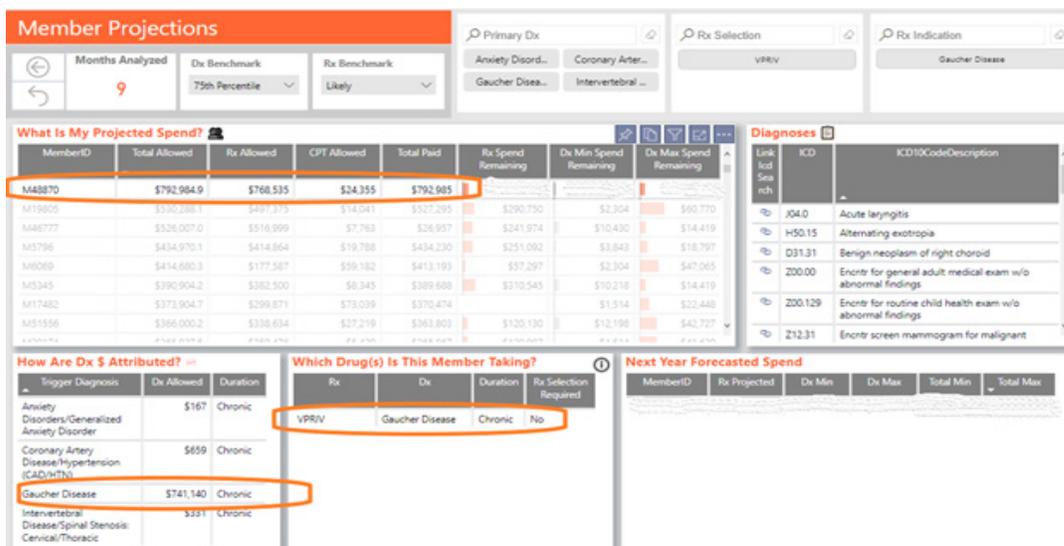
Descriptive Analytics: Shows "what" happened in past. These are generally pre-canned reports, and dashboards derived from Population Health Software, Member Reporting, Claims Runs, and perhaps Disclosure Reports. This is the most common solution being used in the market today and is often misrepresented by using terms such as Predictive Scoring, Modeling, Analytics and Risk Profiling. Although they serve a purpose, too often they often have long installs, yield low ROI, and don't effectively drive change. Consequently, you are now standing on the burning platform.

Diagnostic Analytics: Shows "why" something happened. These are more advanced reports with flexibility to drill down past through data. It answers the questions raised by Descriptive Analytics, some obvious and some not so obvious ones. We expect a wide range of questions such as: How many members had claims greater than \$100,000? – and why? What is my cost for that specialty drug, relative to multiple benchmarking? I can think of many others as well. This one I believe can be a useful example of Diagnostic Analytics: Why did this member become a high-cost claimant?

Example 1

Why did this member become a high cost claimant? In this image you can see the diagnosis of Gaucher Disease in combination with the Specialty Drug VPRIV resulted in the previous 9 months claim totaling \$794,849 Paid.

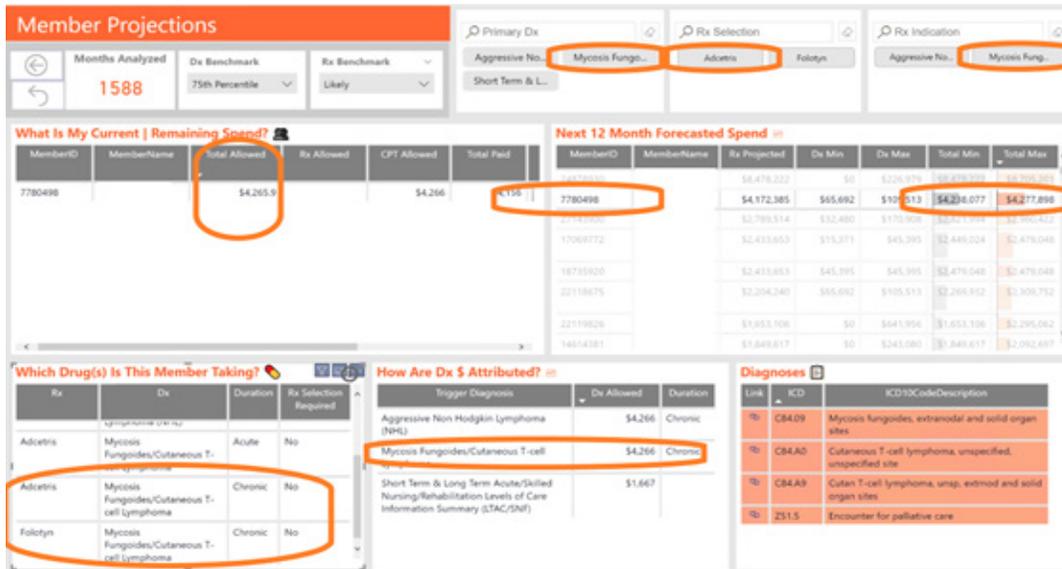
The "Why" has been answered (though be aware there are many other reasons why also).



Predictive Analytics: Determines what might happen in the "future." This needs a larger data set often beyond your own claims experience, machine learning and AI, coupled with human expertise in a subject matter. Which members are most likely to become high cost or continue to be high cost in the next 12 months? At what point will a member turn from on plan spend to high-cost or catastrophic? See Example 2 and make note of the forecast spend vs. the current spend - this will come in handy later!

Example 2

By leveraging, subject matter experts, ML and AI the right analytics can lead you down the path to success. These members are being brought to the top of the list with projections to show what the future **may** hold.



By analyzing the drivers behind high-cost claims such as diagnosis, treatment, drugs, course of care, regimen etc., analytics can provide useful insight to see the potholes before they appear. Someone showing \$4,256 in spend now can be very costly in the next 12 months.

Prescriptive Analytics: Identifies the “actions” required in order to influence a particular outcome. This is the most advanced and complex form of analytics.

Ok, great. Let’s say there’s a member who could cost over \$1.4 million (next 12 months) and you wonder, what can be done about it? Sometimes, nothing. This is the reality we all live every day if we are being honest with ourselves and understand the healthcare market from the paying side. Though sometimes the answer is lots of things can and should be done if the right Prescriptive Analytics are in hand. Prescriptive Analytics can play a SIGNIFICANT KEY role in the leap from a burning platform to one where actionable insight is brought to the top and presented in a way that has purpose linking all the insights together.

For this type of analytic to be effective you must have verifiable content, known values, deep understanding and coordination of [in our example] medical policy, clinical knowledge, benchmarks, and statistics that go well beyond the in-house claims data and expertise. A complete view must be considered to maximize all possible actions that can be taken to influence the desired outcome.

Example 3

By combining clinical and financial content, data, AI, ML, SME’s and a focused approach, the enterprise can establish a new platform that evolves from Descriptive Analytics to Prescriptive Analytics. A new, more efficient process can take root, yielding higher productivity, solid ROI and helps meet strategic goals. Here we can see members and claims that have issues buried underneath and brought to the top with a specific prescriptive action, based on known models and analytics.

FACS		Rule Name	Reason Code	Network	Group							
Raw Claims												
Action	ClaimID	Lines	Group	MemberID	Age	ReasonCode	Action Recommendation	Paid Date	ProviderID	Network	Claim Billed	Flagged Amt
	C98997	1	Iv	44		Orphan Drug Designation for Diagnosis	Confirm appropriateness or conduct Medical Review: Orphan Drug Usage	7/15/2019	1	H	\$150,000	\$127,500
	17032012	2	Iv	55		Implant/Supply Revenue Codes (270) > 40% claim total allowed	Review for cost containment and/or Network review: Implant Charges Exceed Threshold	10/02/2019	6	D	\$146,471	\$114,551
	C1022768	1	Iv	58		Spinraza given in quantity of < 120 units	Confirm appropriateness or conduct Medical Review: Drug Below Min Units	2/20/2019	0	H	\$207,081	\$108,796
	C1022768	1	Iv	58		Orphan Drug Designation for Diagnosis	Confirm appropriateness or conduct Medical Review: Orphan Drug Usage	2/20/2019	0	H	\$207,081	\$108,796
	C177755	1	Iv	71		CPT procedure charges exceed 10x 85th percentile UCR	Review for cost containment and/or Network review: CPT Exceeds Charge Threshold	11/14/2019	1	H	\$117,183	\$102,128
	C1818766	1	Iv	59		Spinraza given in quantity of < 120 units	Confirm appropriateness or conduct	4/12/2019	0	H	\$207,217	\$9,320

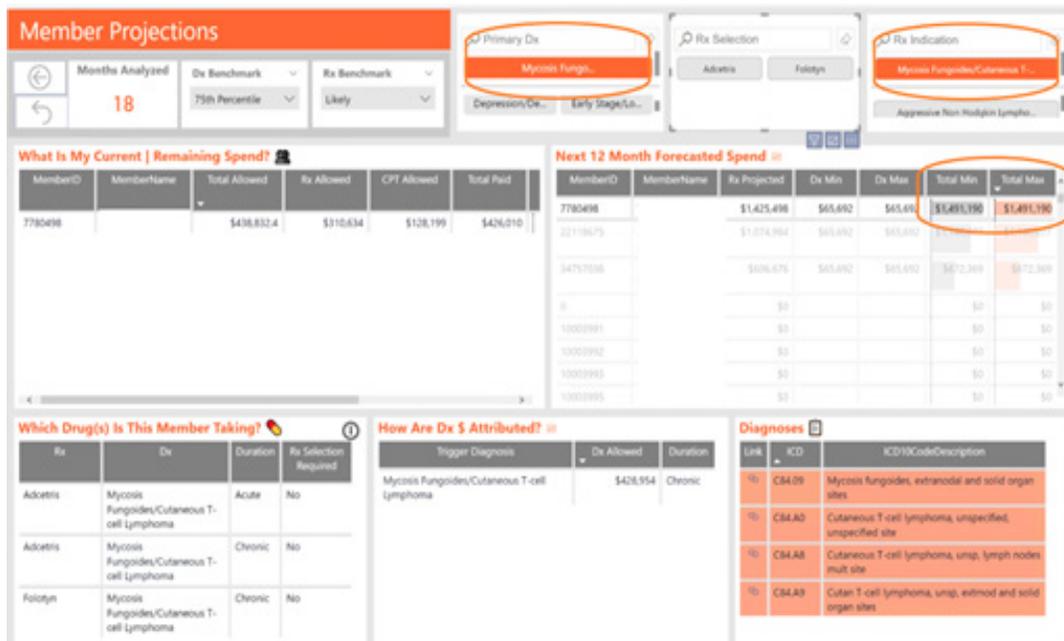
By deploying effective software an organization can impact Medical Loss, Affordability, Patient Experience, and organizational knowledge. By combining clinical and financial content, data, AI, ML, SME’s and a focused approach, the enterprise can establish a new platform that evolves from Descriptive Analytics.

Predictive Modeling: Identify patterns in data and recognize the chance of outcomes occurring via data mining, machine learning, and statistics. To improve the accuracy of predictive modeling, a “supervised learning” (in which the outcome is known ahead of time and is used to train the algorithm) is a great start. The organization must involve more than just developers and take a team approach that utilizes operations and subject matter experts (SME).

For most analytical goals a combination of clinical data and claims history should be used. Again using the same Example 2 we can see this member has a range of potential outcomes that can be modeled from both the collected data and the trained model based on a universe of data, then combined with clinical SME content. Having a historical outcome and a known diagnosis, as well as drug and treatment indications, organizations can produce an effective model allowing one to understand not only the most likely outcome but also what deviations could happen. See Examples 4 and 5 below.

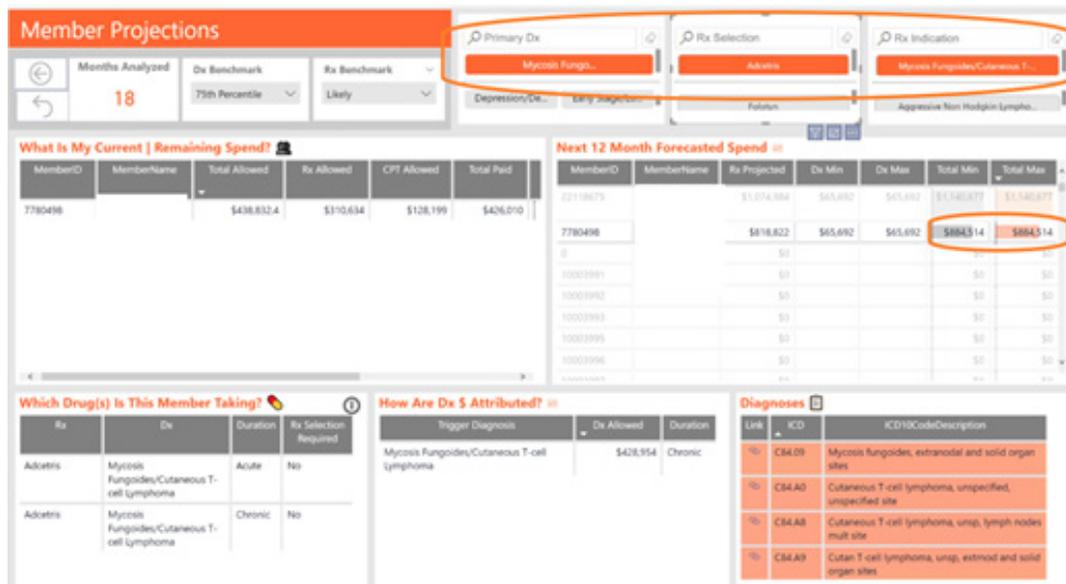
Example 4

By understanding the analytics, a model can be prepared that shows the most likely outcome based on the presentation. In this instance the model shows a 12 month spend forecast of \$1.4M (e.g.3) down from the \$4M based on pure analytics. This can be further refined to two different models based on which drug will be used. Both drugs are presented.



Example.5

And then probability can be applied based on statistics as the likelihood one course of treatment may appear over another at which point acute or chronic are selected. A bonus breadstick if you can guess which one it will be.



What should life look like after jumping?

I have learned a lot over the last 35 years since those days at the dog track but some of the most basic lessons learned there still reside with me today. Big Sal's road to success quip essentially translates today as: there is a path to success that doesn't waste time, money and resources.

By understanding the types of analytics and modeling in the market a move away from the status quo to rising risk, high-cost claims, and affordability needs to be given top priority. The pace at which the market's moving is fast. The vast amounts of data, and the specialized knowledge needed within an organization has created the "Burning Platform" scenario. If you don't see it now it may be too late. The most transformative technologies usually take a while, and require several iterations, to demonstrate their value and the change-management steps needed to achieve that value. That value then has a multiplier effect beyond the ROI.

By combining Predictive & Prescriptive Analytics and Predictive modeling, organizations can set priorities early and triage on the members who are both rising in risk and currently high cost to produce a true transformation. By establishing the right foundational approach coupled with the right platform, organizations can drive transformation to medical management, affordability, medical policy, site of service optimization, member engagement, network optimization, and coordination of care.

Leading organizations are committed to a sustained, multi-year focus on the transformation. Additionally, they engage in iterative learning, maintain a keen understanding of the problems to be solved, and most importantly understand fundamental differences between the different types of analytics out there. Would you like some more breadsticks and coffee?