How Benefits Data Becomes Actionable

How to go from data feeds to a thoughtful analysis to actionable insights using employee benefits data.

Big data is trendy. It's being used to make business cases and justify decision making for just about any industry you can imagine:

- Casinos are analyzing the behavior of gamblers to see what keeps them at the table longer
- Hollywood producers are finding the right combinations of action sequences to maximize box office returns
- Hospitals are mining electronic medical records to find faster, more accurate diagnoses

And of course, self-insured employers are mining their health and benefits data to save costs and provide quality care for employees. Data is driving business decisions, but how do you get from millions of rows of data to a consumable graph to taking action? In this white paper, we'll delve into data analytics best practices that help self-insured employers find actionable insights in their benefits data.

Data Sources

The first step in going from a vast amount of data to an actionable conclusion is determining what data sources to bring together. Many employers don't know where to start with selecting data sources. Here are some of the most valuable benefits feeds to mine for information:

- Medical claims
- Prescription drug claims
- Wellness vendor data
- Telemedicine program data
- Disability claims
- Dental claims
- Vision claims
- Biometrics data

Learn more about the Artemis Platform at:

artemishealth.com

Key metrics

+

Appropriate intervals

+

Awesome analytics tool

=

Trustworthy conclusions

These feeds, combined with employee surveys and feedback, will give you a fairly complete picture of population health, areas for improvement, and employee behaviors. The key isn't in just collecting these sources, but in breaking out of traditional data silos into a more holistic model for analysis. We'll explore exactly how the Artemis Platform enables this later in this white paper.

Key Metrics and Intervals

Data sets are most useful when a skilled analyst or top-notch analytics tool helps determine what metrics to look for and at what frequency to examine these data points. Let's look at a real-world analysis conducted using the Artemis Platform.

This client was interested in their population's mental and behavioral health. We began the analysis by finding members with diagnoses for depression or anxiety and prescriptions for these conditions. If we had stopped there, all the client would learn is how many members in their population are affected—and this isn't actionable. We used further metrics and data points to determine how these conditions are affecting the members' work, their other health concerns, or the overall organization.
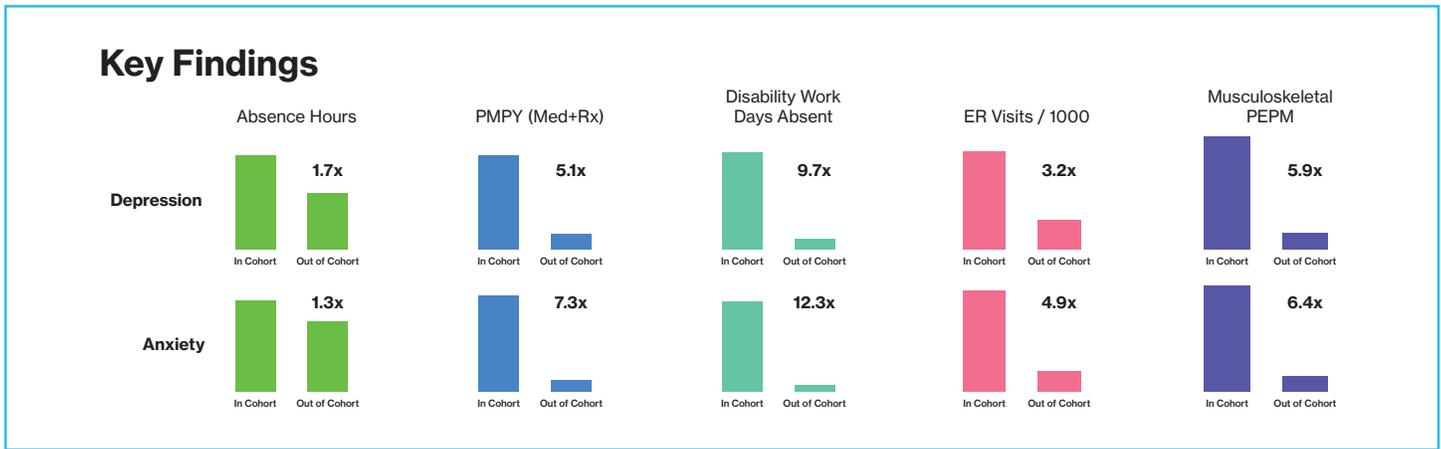
The Artemis Platform allows you to add overlapping metrics to an analysis so you can compare the same information across different concerns. In this case, we selected:

- Absentee hours
- Per member per year (PMPY) costs for med and Rx
- Short-term disability claims
- Wellness program participation
- Office location
- ER visits
- Comorbid musculoskeletal diagnoses
- And more

Our analysis with this customer resulted in clear, actionable data:

By selecting certain measures and filters in the analysis, data analysts

Key Findings

	Absence Hours	PMPY (Med+Rx)	Disability Work Days Absent	ER Visits / 1000	Musculoskeletal PEPM
Depression	1.7x	5.1x	9.7x	3.2x	5.9x
Anxiety	1.3x	7.3x	12.3x	4.9x	6.4x

can move beyond correlation to causation. From the visualization above, it's clear that depression and anxiety affect an employee's overall health and well-being. They're more likely to miss work, incur higher costs, spend more time on short-term disability, visit the ER more often, and more likely to have a comorbid musculoskeletal diagnosis. The customer in this example is taking action by adding behavioral health wellness programs to target this population. They want employees to have access to services so they don't have to miss work, take disability, or visit the ER to get the help they need.

Through this example, we can see that choosing the right metrics and ensuring the data is timely is one key step to finding a useful conclusion. This level of analysis would be intimidating to the average benefits administrator, which is why they often turn to consultants to find key metrics and determine analysis intervals. Artemis Health's platform helps both benefits teams and consultants find the right metrics and tempo for conducting an analysis. It offers thousands pre-loaded measures and filters to help teams determine which data points to explore, plus frequent updates to make sure the most recent claims are reflected in the analysis.
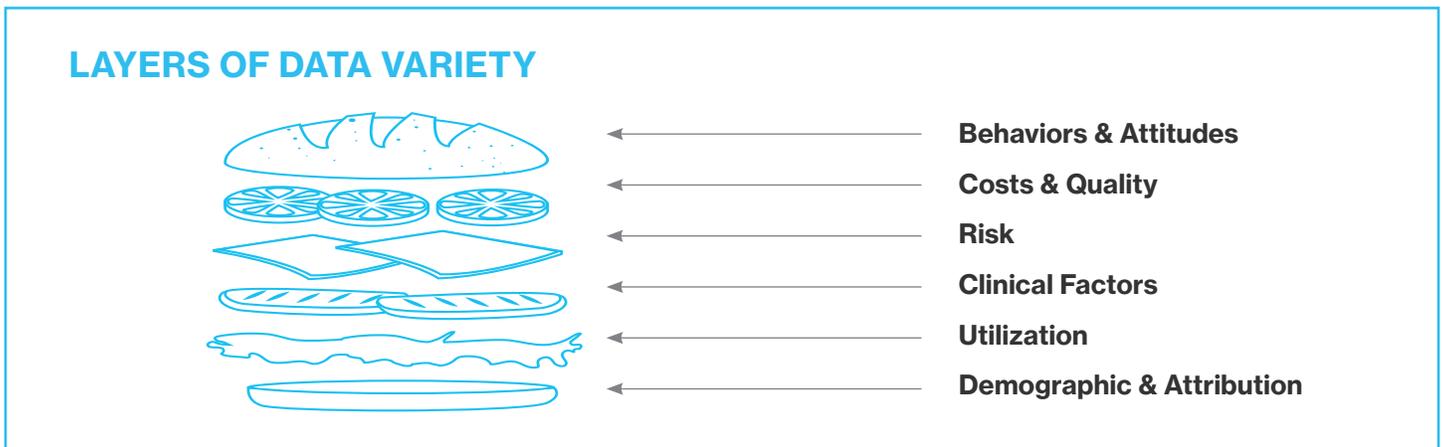
Data Variety

In order for data to inform good decision making, the analyst must examine all sides of an issue. They do this by casting a wide net of queries that help them move beyond "hunch" or even "correlation" to a trusted decision. Some data tools enable multiple queries across multiple feeds, but some do not. Artemis recognizes this strategy as a best practice and makes it as easy as possible for those using the Artemis

Platform to go from granular data points to clear conclusions.

Think of this process as adding the layers to a sandwich. If you're only looking at medical claims, you only have the bread. By searching for the same information in Rx claims, absentee hours, wellness program engagement, short-term or long-term disability, and more, you're adding the turkey, cheese, lettuce, tomato, etc. Bread alone does not make a satisfying sandwich, and medical claims alone do not tell a full story.

LAYERS OF DATA VARIETY

Behaviors & Attitudes

Costs & Quality

Risk

Clinical Factors

Utilization

Demographic & Attribution

If we had looked at just medical claims in our behavioral health analysis above, we would have found some interesting demographic data, but we wouldn't have been able to correlate absenteeism with behavioral health issues. And we wouldn't have been able to make a successful business case for further resources for these employees.

Conducting a variety of queries and running multiple reports on the same question will give you a more accurate picture of how employees are engaging with their benefits.

Predictive Analysis

Benefits data also becomes actionable when you use all of these techniques and tools to conduct a predictive analysis. You want to determine not just what's happening now, but what might happen with your population, spending, or engagement if you:

1) Make changes to your benefits programming

2) Maintain your current benefits programs

Common telemedicine diagnoses:

- Cold and flu
- Bronchitis
- Simple infections
- Conjunctivitis
- UTIs
- Allergies
- Vomiting
- Diarrhea

Telemedicine is a great topic for exploring the power of predictive analysis. First, the analysis should look at the cost of implementing a telemedicine benefit for your population. Then you could explore the most common diagnosis codes that could be handled through a phone or video chat service.

The analysis could sum both employer paid amounts for these diagnoses and employee out-of-pocket expenses. By comparing the cost of implementing a telemedicine program vs. the cost of the current claims from primary care docs, urgent care centers, and ER visits, the analyst can predict the ROI of making this change.

The Artemis Platform uses custom data models and apps to help benefits teams conduct predictive analyses like this one. In addition, our tools provide future cost estimates to better inform employers when setting budgeted rates for the upcoming year.

Conclusion

In order for benefits data to become actionable, the analyst must:

- Determine valuable data sources
- Identify key metrics and analysis intervals
- Cast a wide net to ensure data variety
- Conduct useful predictive analysis

For analysts and benefits administrators struggling to understand their populations, Artemis Health can help.

Artemis Health makes it easy for self-insured employers to use their own benefits data to reduce spending and improve benefits for their employees. The Artemis Platform uses a series of tools (we call them "apps") to make analysis fast, easy and actionable.

artemis HEALTH

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