Patient Flow

MedInsight Machine Learning

MedInsight Patient Flow™ is a new product from MedInsight® that explores and draws inferences from the connections between patients and healthcare providers as they deliver care. A connection is formed when a patient has services at two different providers within a short time period. Using sophisticated social network analytics, Patient Flow draws insights from these connections the same way social media companies work with networks of friends, followers, and posts. It creates interactive, geographic visualizations of patients as they visit with providers. These interactions comprise a history that can be nuanced by provider specialty to focus on plausibly causal connections.

Social Network Perspective

Patient Flow uses social network analytics, the powerhouse behind social networks like LinkedIn®. It focuses on the relationships between people instead of a person's age or gender. Understanding how people interact enables social network companies to help users find new friends or products.

Patient Flow brings the power of social network analytics to healthcare. It builds connections between healthcare providers using standard healthcare claims data. While referral data is a source of explicit connections between healthcare providers, organizations may not have access to this data or the data they do have may be limited. By using claims data rather than referral data, Patient Flow can build implicit connections between healthcare providers to create a more robust picture of provider interactions. These connections can be analyzed to track patient movement and flow in and out of a provider network.

Geographic Considerations

Geographic location strongly influences which providers work with each other. In Patient Flow, providers are prominently displayed on an interactive map, which allows users to quickly understand the unique geographic constraints of their population. The technology in Patient Flow geocodes providers by finding coordinates using the Internet and bringing them into the system to be easily mapped. This technology can also be used to find geographic coverage gaps by provider specialty.

Alternatively, abstract visualization of the provider network is also available. It focuses on presenting closely-related providers near each other while still preserving space between all providers on the map. It can be useful when trying to understand the provider connections in a dense urban setting where the geographic map becomes too congested to decipher.

Linked Leakage

Optimizing the utilization of in-network providers is a prominent revenue source for many healthcare systems. Traditional definitions of leakage or out-of-network claims focus on all claims that occur at out-of-network facilities. Patient Flow enables the more action-orientated concept of linked leakage—leakage that an in-network provider could have plausibly prevented. The geographic view within Patient Flow can help nuance services at out-of-network providers that can be linked backwards to a recent visit with an in-network provider. Specifically, a user can quickly determine if there were any nearby in-network providers that could have performed the same service. If there were none, then healthcare companies could investigate extending the network by contracting with a currently out-of-network provider to help fill that gap.

To learn more about our new product, please contact milliman.medinsight@milliman.com.