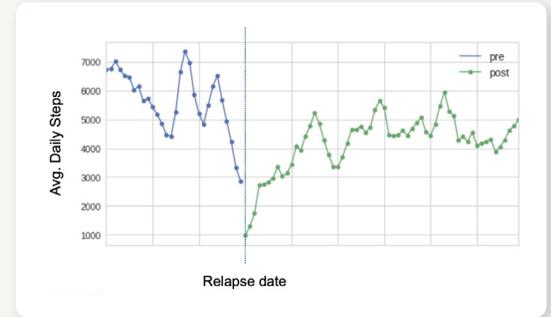


Case Study: Multiple Sclerosis

Wearable data can assess MS patients' disease activity



Evaluating minute-level data obtained from passive trackers has the potential to help in determining patients' disease state and progression

Challenge

The objective was to use continuously collected consumer wearable data in order to differentiate patients with MS from those in a non-MS control group. The intent was that this data could help determine mobility, which might serve as a proxy for both disease state and progression in patients living with MS.

Solution

In partnership with a top 10 pharmaceutical company, Evidation used administrative medical claims data to identify ~500 individuals with MS and ~1500 individuals without MS to partake in this study. Those without MS met age, sex, and geography controls, and all participants met wear-time requirements, ensuring data continuity and quality.

Throughout the duration of the study, researchers computed daily summaries of both step and sleep data recorded by the minute via participants' wearables. Combining this data with medical claims and demographics data, experts could see notable differences between MS and non-MS individuals. In addition, they were able to identify flare-up events in patients with MS, paving the way for remote monitoring and management.

Results

The findings suggest that data collected from consumer wearables, or person-generated health data, has the potential to:

- Identify patients living with MS
- Passively assess the quality of life in patients living with MS
- Document meaningful events



ENGAGE

We can quickly create and permission data from targeted cohorts through our Evidation app



IDENTIFY

Our RWE-based approach delivers crucial information about disease state and quality of life that would otherwise go uncaptured



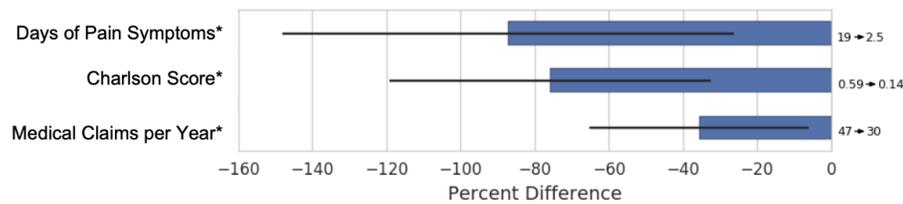
EVALUATE

We provide actionable insights and information that helps patients get the right care faster

Lower mobility is significantly associated with increased pain

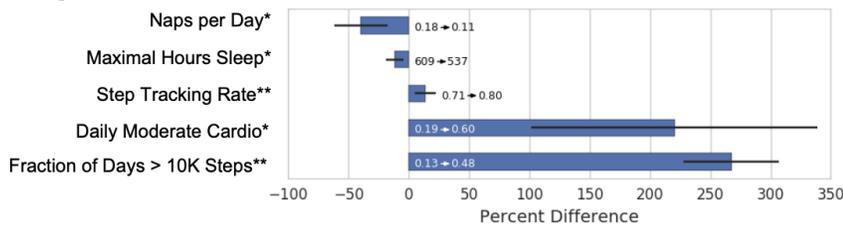
This finding indicates that data from passive trackers may be used to build an index of pain symptoms over time. RWD such as this allows experts to develop clinical cohorts differentiated by comorbidity level, medical utilization, and pain symptoms.

Medical



	High Mobility	Low Mobility
N	111	111
% Male	7.20%	11.70%
Median Age	48 (39, 56)	47 (40, 56)
Average days activity**	255.6	202.1

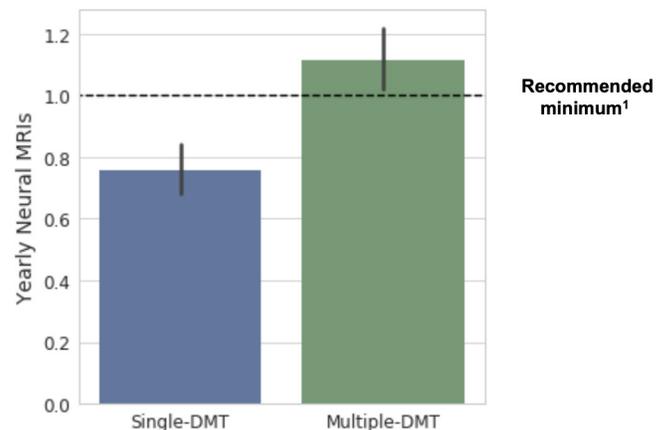
Activity



*p < 0.05; ** p < 0.001 corrected for FDR

When controlling for symptoms, patients who have switched DMTs receive neuro MRIs 1.5x more often than single-DMT patients

This suggests that some single-DMT patients appear to be clinically monitored at suboptimal levels, potentially leading to inferior medication regimens.



Evidation's mission is to empower everyone to participate in better health outcomes.

We measure health in everyday life and enable anyone to participate in ground-breaking research and health programs. Built on a foundation of user privacy and control over permissioned data, Evidation's platform is trusted by millions of individuals—generating data with unprecedented speed, scale, and rigor.