

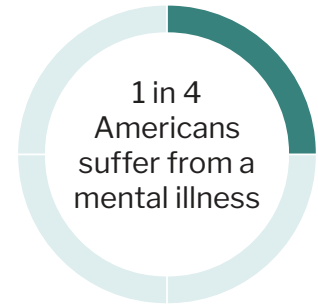
# What is Precision Mental Healthcare?

Traditional mental health solutions were not built to acknowledge the unique needs of each patient. This leads to long periods of testing different providers and treatments to understand what works.

**What we need is a smarter approach.** By applying the same scientific principles behind precision medicine to mental health care, we can accurately predict the right treatment for the right person at the right time and ultimately accelerate recovery. We call this approach **Precision Mental Healthcare**.

## The Science of Spring Health

Our technology has been clinically validated in over 30 peer-reviewed papers in the world's top medical journals and our approach has been endorsed by the American Psychiatric Association. Here are some of our scientific highlights from recent years.



# 84%

Don't get the  
care they need

### Reducing trial-and-error treatments

It is possible to predict, before a patient even begins treatment, how they might respond to specific treatments.

Citation: Chekroud AM, Zotti RJ, Shehzad Z, et al: Cross-trial prediction of treatment outcome in depression: a machine learning approach. *The Lancet Psychiatry* 3: 243–250, 2016.

### Identifying the right antidepressant

We found a reliable sub-structure to the kinds of symptoms that make up depression, known as “symptom clusters”. Antidepressants only help with some of them. We used this insight to improve treatment and medication matching for most antidepressants.

Citation: Chekroud AM, Gueorguieva R, Krumholz HM, et al.: Reevaluating the Efficacy and Predictability of Antidepressant Treatments. *JAMA Psychiatry* 6511, 2017.

### Understanding who might relapse into depression

After looking at multiple clinical trials and thousands of patients' data, we developed trajectory-based models that predict how likely a patient is to relapse or stay in remission.

Citation: Gueorguieva R, Chekroud AM, Krystal JH: Trajectories of relapse in randomized, placebo-controlled trials of treatment discontinuation in major depressive disorder: an individual patient-level data meta-analysis. *The Lancet Psychiatry* 366: 1–8, 2017.

### Eliminating barriers to effective treatment

We can use machine learning to predict which specific barriers patients will face. This data helps us match each individual with treatment options they are more likely to accept.

Citation: Chekroud AM, Foster D, Zheutlin AB, et al: Predicting Barriers to Treatment for Depression in a U.S. National Sample: A Cross-Sectional, Proof-of-Concept Study. *Psychiatric Services* appi.ps.2018000, 2018.