

LexisNexis® Stress Index Executive Summary



25% of Americans say that stress has a strong impact on their physical health

Source: Stress in America, Paying with our Health. American Psychological Association. February 4, 2015.

The data science and clinician informatics team at LexisNexis has created a predictive model called the Stress Index to augment the firm's predictive analytics options, representing the first meaningful industry integration of medical and pharmacy claims information with socio-economic data. The Stress Index predicts health risks more accurately than models that don't incorporate socio-economic data. The findings indicate that individuals with higher stress have higher health risks, suggesting that they are more likely to require behavioral or social programs or related interventions.

Identifying individuals with higher levels of stress allows at-risk health care organizations to better engage individuals with specific programs and other engagement to help the individuals manage stressful life events or external stressors that are increasing their health risk. Better engagement may take the form of programs available to them as part of their health insurance benefits package or

through behavioral or mental health care services offered by health systems across the country.

Integrating socio-economic data with clinical claims data provides at-risk health care organizations an additional arsenal in their ongoing efforts to successfully manage to current and future quality standards, population health, and costs in general. That means population health management, of course, and until today, that meant data from clinical records.

But in a changing health care environment, that's no longer adequate. Now, non-clinical socio-economic data from public sources – financial, environmental and legal, for example – must be added to paint more complete pictures of patients and how the details of their daily lives can impact their mental and physical health, and thus their costs to your organization.

With broader and richer data to inform deeper understanding of each individual's needs, care managers and care delivery teams can stratify patients for intervention with these types of services. A care manager's day-to-day employment of the Stress Index could include specific assessments for behavioral or social programs, or a specifically tailored interview style or notification of the availability of employee assistance programs.



Socio-economic Data Keys

The key to integrating socio-economic data with existing clinical information is determining which type of data actually helps improve a predictive model's ability to identify people where stressful life events or situations can exacerbate existing health risks. Data scientists need to have vast volumes of data, on a surprisingly broad set of topics, and need to know just how much weight each data element should have in determining which individuals to pinpoint.

LexisNexis maintains petabytes of unique data from trusted, non-credit data sources; the records it manages contain billions of public and proprietary documents. Included are, for example, some 9 billion name/address combinations, about 4 billion property records and more than 400 million criminal records. If you know what you're looking for, those records can shine a light on previously undetectable stress risks in time to manage them most effectively.

The LexisNexis difference is knowing what to look for in public records data – even when no one else has been bold enough to define it and quantify its effect on a patient's health. In this case, "it" was stress. The LexisNexis data science team defined it, discovered how it impacts physical health and quantified its effects on other clinical conditions commonly treated in targeted disease management programs. The final version of the Stress Index model integrates dozens of socio-economic attributes with hundreds of medical attributes.

It works better than traditional predictions at identifying high-risk individuals. In fact, the Stress Index can capture some of the hidden future high-cost complications and events that aren't identified by other models. This

makes it especially useful for underscoring individuals with significant health risks who can benefit from social or mental health services to help manage stressful situations. This has the potential to improve the individual's quality of life and lead to cost savings from avoidable care events. The findings also suggest that the risk of trauma is also highly correlated with the Stress Index. These elements can't be captured by traditional industry predictions.

The Stress Index complements other predictions, and it's used like many current predictive analytic models. Care managers examining an individual's health record will see an extra index, similar to others available in LexisNexis products. With that information, they can tailor interventions and programs, knowing in advance which aspects of the individual's health are likely to be exacerbated by stress.

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