
New Screening Software For Primary Immunodeficiency



New York's Jeffrey Modell Foundation has launched new software which can recognise and track signs of primary immunodeficiency, a constellation of approximately 150 disorders which often go undiagnosed with costly consequences. The software is now being pilot-tested by three health systems and one academic medical centre in the Midwestern United States.

Primary immunodeficiency presents a formidable challenge to healthcare providers not only because such disorders are hard to treat, but because they are so often undetected. According to figures from the National Institutes of Health (NIH), between three and six million people with primary immunodeficiency disorders are undiagnosed each year.

"The problem is it's undiagnosed with 90 percent of patients who get this," said Vicki Modell. She and her husband, Fred, have a personal connection to primary immunodeficiency: their son, Jeffrey, died from one of the disorders at the age of 15. A goal of the software is to pick up on patients whose disorders are in the middle range of severity, with symptoms which may not be obvious but may still be treated.

Speeding Up Screening With Software

The Spirit 2.0 Analyzer software works by scanning data from patient records for early signs of primary immunodeficiency. According to the Modell Foundation, it is capable of screening as many as one million patients within 30 minutes. The software was co-developed with consultant Xcenda. The software does not diagnose or detect primary immunodeficiency.

The software was tested for efficacy and functionality during a three-year study. A sample of more than two million patients in the IMS Health LifeLink Claims Database revealed that 1 in 4,478 patients had at least two warning signs of primary immunodeficiency, and 1 in 583 were classified as high-risk. Data included medical and pharmaceutical claims from more than 60 million patients across 90 health plans.

The warning signs of primary immunodeficiency were developed from ICD-9 codes. Previously, the codes were manually matched with data, but the new software is capable of screening vast numbers of records in a much shorter period of time. NIH estimates of the incidence of primary immunodeficiency are consistent with the study's screening results.

The Value of Early Detection

The results of the study showed that, one year after primary immunodeficiency diagnosis, there were significant reductions in the number of infections, pneumonias, emergency room and hospital visits, days on antibiotics, days in the hospital, and days missed from school and work, compared to one year before diagnosis. The records were examined by physicians from the Jeffrey Modell Centers Network.

According to a study by Immunologic Research, early detection of primary immunodeficiency, facilitated by the recently launched software, could save \$40 billion in healthcare costs. "It's for the greater good, and our hope is to get the insurance companies to use it. They have nothing to lose," said Fred Modell. "In fact, they can save a great deal of money because these patients are very expensive if undiagnosed."

Source and image credit: [Jeffrey Modell Foundation](#)

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