Strategic Medicine Case Study –

Identifying Risk and Preventing pARDS

Nathaniel Adamczyk Foundation (NAF)

NAF is a 501 c(3) foundation with a mission to prevent common childhood infections – like flu or pneumonia – from progressing to Acute Respiratory Distress Syndrome (pARDS) in children. Although pARDS incidence is low, it currently kills more children yearly than leukemia and cystic fibrosis, combined. NAF believes that the key to pARDS prevention and treatment is to develop a better understanding of which children will be diagnosed with the disease as well as the genetic, environmental, and lifestyle factors that may be responsible for causing a perfectly healthy child to develop this often fatal condition. Find out how Strategic Medicine is helping the NAF by creating a virtual data and tissue repository and the application of advanced clinical data analysis methods.

The Challenge

pARDS is diagnosed most typically upon presentation in neo-natal or pediatric ICU's and the current clinical focus is on patient management and survival. New drugs and treatment methods have had limited success because of the significant heterogeneity that exists in the patient population who receive this diagnosis. In other words, although certain drugs and treatment methods are efficacious in some instances, they are not sufficiently

efficacious across a broad patient population. Only by developing a better understanding of each patient's clinical presentation and diagnosis, method of treatment, and outcome, can we accurately evaluate the efficacy of available drugs and treatments and, most importantly, make clinical decisions that will prevent loss of life.

What Strategic Medicine Is Doing

Strategic Medicine (SMI), a global provider of disease stratification products and services, was engaged by the NAF to lead the development, deployment, and ongoing management of a virtual data and tissue repository. SMI was also tasked with developing a standardized approach to data collection that would allow researchers to easily study and compare disparate sets of data to stratify patients and stratify the disease.

NAF, in partnership with Strategic Medicine, launched the initial phase of the project in June 2010 by recruiting more than 80 pediatric ICU communities that have since begun contributing to the repository. This number is expected to grow significantly in 2011 and beyond.

Strategic Medicine worked closely with NAF to decide what data should be collected and to determine how it needed to be standardized. After sufficient data is collected, SMI will leverage its proprietary disease stratification

and analysis processes to stratify pARDS into critical sub-diseases which will help identify risk factors and support more individualized treatment and improved response.

Disease Stratification

Every patient possesses intrinsic characteristics (those derived from their genetic make-up and its expression in their underlying physiological structures) and extrinsic factors (such as their lifestyle and environmental exposures). A disease represents a pattern of actions that interact with, and are modified by, these characteristics.

Strategic Medicine's proprietary disease modeling and stratification methods help to interpret this complex disease-patient interaction, and develop effective diagnostics and treatments.

SMI will use data collected by NAF to stratify pARDS into critical sub-diseases which will support more individualized treatment and improved response.

Results

As of January 2011, more than 80 ICU communities are actively contributing patient management and tissue data to the NAF repository. Expansion of this network to more than 400 ICU's, internationally, is under discussion. When complete, this repository will provide an informatics infrastructure that will connect medical researchers and enable them to share data related to pARDS in an open and standardized environment.

Ultimately, SMI and its partner research organizations will use this data to develop risk assessment tools, more effective treatment methods, and a clinical decision support system that will improve survival rates of those diagnosed with pARDS.

About Strategic Medicine

Founded in 2007, Strategic Medicine is committed to improving the quality and effectiveness of healthcare through the research, development and implementation of its proprietary patient and disease stratification models. Strategic Medicine's mission is to improve clinical outcomes through better patient and disease stratification.

The company addresses a fundamental problem in medicine that is increasingly problematic for patients, healthcare providers, and payers alike.

SMI offers disease stratification products and services driven by clinical need and supported by its rapidly expanding knowledge base and improved implementation of diagnostic technology.

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