Superior Medical-Imaging Software for Improved Patient Diagnosis

Sentinel Diagnostic Imaging, Inc. is a medical-image analysis company that provides innovative software solutions for improving the precision and early detection of site-threatening retinal vascular diseases such as diabetic retinopathy and age related macular degeneration. Based on quantitative mathematical tools, Sentinel Diagnostic Imaging’s software applications process standard digital photographic images of the retina and produce robust objective metrics about the structure and health of the retinal vasculature. These advanced medical imaging techniques will allow for dramatic improvements in early disease detection and also assist in the development of next generation pharmaceutical treatments. Given the dramatic growth that is expected in the global diabetic retinopathy population over the next decade, successful intervention and treatment will increasingly rely on early detection modalities. Growing demand for new and improved solutions along with expansion of the telemedicine and Cloud Computing infrastructures will be strong growth drivers for this medical device sector within the healthcare services market. Sentinel Diagnostic Imaging’s robust, cost-effective medical-imaging software applications will be strategically positioned within this rapidly expanding marketplace.

Technology

Sentinel Diagnostic Imaging, Inc. is developing web-based software applications for processing digital photographic images of patients suffering from retinal vascular diseases. Using advanced mathematical algorithms, these disease-specific software applications analyze high resolution images of the capillary structures in the retina to provide elegant quantitative metrics of the architectural details of the retina such as size and arrangement of blood vessels, capillary blood flow changes and degree of neovascularization. Unlike existing medical-imaging techniques, which are typically based on subjective numerical grading scales assigned by health care providers, the company’s imaging software does not exclusively rely on endpoints that are often difficult to reproduce between clinical sites. These objective metrics provided by the software algorithms will enhance diagnostic accuracy and aid the physician by providing improved prognostic confidence. By reducing large image files down to just a few critical parameters that accurately represent retinal structures and condition, the full power of Cloud Computing can be utilized as vast numbers of images are analyzed through the global telemedicine networks.

Market Potential

Diabetes is an epidemic disease worldwide which affects 23.6 million people in the US alone. This number is expected to increase by more than 1.5 million each year. There are an additional 57 million Americans with pre-diabetes. Based on the current prevalence, the health care systems should be screening over 400,000 patients for diabetic eye disease every week. Estimated annual health care costs of diabetes in the US are $174 billion. As a result of this epidemic, diabetic retinopathy is the leading cause of blindness among working age adults today. Early detection and treatment can effectively preserve vision in patients with diabetic eye disease.
The company’s software applications will provide the versatility and customized capabilities to ensure a wide range of opportunities within this critical segment of health care. The company will focus on the diagnostic retinal imaging device and service sectors, where the advanced software algorithms will aid health care providers with more comprehensive screening and treatment plans. The software application’s ability to improve diagnostic accuracy – along with saving time, and money – is particularly appealing given the broad based initiatives for cost-containment in today’s healthcare systems.

**Strategy**

Sentinel Diagnostic Imaging’s software and telemedicine services will be positioned to provide diabetic retinal disease screening capabilities through multiple business channels: ophthalmic and primary care practices, retail medical services and corporate wellness programs for “covered lives” within the existing health care systems. The company will continue refining its software applications for retinal imaging in order to obtain key endorsements from influential retinal specialists. Strategic partnerships will be pursued with medical equipment manufacturers and telemedicine service providers as the necessary regulatory filings are completed. Prior to product launch, Sentinel Diagnostic Imaging, Inc. will finalize equipment sales agreements and service contracts with healthcare providers in conjunction with targeted promotional efforts for each market segment.

**Management Team**

**David Meadows, PhD, President**

David L. Meadows is the President of Sentinel Diagnostic Imaging, Inc. Until August 2012, he served as Vice President of Research and Development at Alcon/Novartis in Fort Worth, Texas. Over his 18 year career at Alcon, he had a wide range of managerial and product responsibilities ranging throughout the ophthalmic pharmaceuticals, medical devices, and over-the-counter product segments. Prior to joining Alcon, he was a lead scientist in drug delivery research at Allergan Pharmaceuticals. He received his PhD in Chemical Engineering from the University of Michigan. He has more than 40 patents in a wide range of drug and medical device product categories. He has authored more than 50 refereed journal articles and over 130 conference abstracts. He is a Fellow of American Institute of Medical and Biological Engineering and is a member of ARVO, AAO and AAPS professional organizations. He has also served as an expert on several international ISO/CEN Medical Device International Standards Committees.

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