

Decision Support Tool for Oncology Treatment that Analyzes Radiological Images



Our technology is a decision support tool for identifying and optimizing treatment regimens by comparing quantitative data from patient radiological images with a databank of patient radiological images stored and electronically catalogued by treatment and clinical response. This patented tool could be used with a number of diseases. The quantitative data in the image could be a shape-based feature, a texture-based feature, a habitat feature, an intensity feature or a position-based feature. This technology may increase the probability of successful individualized treatment regimens by allowing clinicians to focus on therapies that work or avoid those that have not shown promise in previous patients with similar radiological images.

COMMERCIAL OPPORTUNITY

- The American Cancer Society has estimated that there will be 1.69 million new cases of cancer and approximately 600 thousand cancer related deaths in 2017. The total cost of cancer for the US each year is estimated at \$228 billion for treatment, morbidity and mortality. Moreover, in the January 2012 JNCI, it was suggested that with a drug efficacy rate estimated at 50%, the resulting global annual waste from misdiagnosis would be about \$350 billion.
- The market place for radiology decision support tools is attractive as evidenced by Quantitative Insights' FDA clearance in May 2017 of the QuantX SE™ system, a quantitative imaging based analysis platform for the evaluation of breast lesions; HealthMyne's FDA Clearance in January 2016 of its Imaging Analytics Package for oncology; and Philips' FDA clearance in June 2017 of multiple new applications on its IntelliSpace Portal platform for Radiology.
- Additionally, IBM purchased EMR and PACS vendor Merge Healthcare for \$1 billion in 2015 to bring the Watson platform to market via an established health IT company. Merge's enterprise archive offers about 30 billion images, which Watson will use to learn about radiology. Merge's technology platforms are used at more than 7,500 US healthcare sites, as well as many of the world's leading clinical research institutes and pharmaceutical firms.

TECHNOLOGY

The patented method consists of analyzing quantitative information obtained from radiological images, including identifying a region of interest; segmenting the region from the radiological image; extracting a plurality of quantitative features; creating a radiological image record that contains one or more imaging parameters and one or more clinical parameters; storing the radiological image record in a data structure comprising a plurality of radiological image records; receiving a request related to a patient's radiological image; analyzing the data structure to determine a statistical relationship between the request and the plurality of radiological image records; generating a patient report comprising at least one of a diagnosis, a prognosis or a recommended treatment regimen for the patient's disease based on a result of analyzing the data structure; and transmitting the patient report in response to the request.

PUBLICATION/PATENT

- US Patent 9,721,340 filed on 8/13/2014 issued to Moffitt and for inventor Drs. Gillies, Eschrich and Gatenby

CONTACT

Haskell Adler PhD MBA CLP
Senior Licensing Manager
Registered Patent Agent
Haskell.Adler@Moffitt.org
(813) 745-6596

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