La plateforme analytique biomédicale d'IBM aide les médecins à établir des traitements personnalisés

L'Instituto Nazionale dei Tumori en Italie expérimente actuellement de nouvelles solutions d'aide à la décision dans le traitement du cancer

Paris - 14 mars 2012: IBM (NYSE: IBM) annonce aujourd'hui le développement d'une nouvelle plateforme analytique biomédicale spécialisée dans la médecine personnalisée qui permettra aux médecins de conseiller au mieux leurs patients en termes de traitement. Ce développement mènera à des soins plus personnalisés et plus intelligents dans de nombreux domaines de la santé parmi lesquels le cancer, l'hypertension ou le SIDA.

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IBM's Biomedical Analytics Platform Helps Doctors Personalize Treatment

Italy's Istituto Nazionale dei Tumori testing new decision support solutions for cancer treatments

Haifa Israel and Milan, Italy, March 14, 2012 –– IBM (NYSE: IBM) today announced it has developed a unique new biomedical analytics platform for personalized medicine that will enable doctors to better advise on the best course of medical treatment. This will lead to smarter and more personalized healthcare in a wide-range of areas, including cancer management, hypertension, and AIDS care.

IBM Research scientists are collaborating with the Fondazione IRCCS Istituto Nazionale dei Tumori, a major research and treatment cancer center in Italy, on the new decision support solution which is being tested by the Institute's physicians to personalize treatment based on automated interpretation of pathology guidelines and intelligence from a number of past clinical cases, documented in the hospital information system.

Selecting the most effective treatment can depend on a vast number of characteristics including genetic profile, age, weight, family history, current state of the disease, or general health. As a result, more informed and personalized decisions are needed to provide more accurate and safe care.

IBM's latest healthcare analytics solution, Clinical Genomics (Cli-G), can integrate and analyze all available clinical knowledge and guidelines, and correlate it with available patient data to create evidence that supports a specific course of treatment for each patient. Developed by researchers in Haifa, Israel, the new research prototype works by investigating the patient's personal makeup and disease profile, and combines this with insight from the analysis of past cases and clinical guidelines. The solution is expected to provide physicians

and administrators with a better picture of the patient-care process and reduce costs by helping clinicians choose more effective treatment options.

"*Making decisions in today's complex environment requires computerized methods that can analyze the vast amounts of patient information available to ease clinical decision-making*," notes **Dr Marco A. Pierotti, Scientific Director at the Istituto Nazionale dei Tumori**. "*By providing our physicians with vital input on what worked best for patients with similar clinical characteristics, we can help improve treatment effectiveness and the final patient outcome*."

Founded in 1925, the Fondazione IRCCS Istituto Nazionale dei Tumori in Milan is recognized as a scientific research and treatment institution in the field of pre-clinical and clinical oncology. The Institute's special status as a research center enables it to transfer research results directly to clinical care. The Institute initiated this collaboration with IBM to enhance patient care through better use of innovative IT solutions. Once physicians make a diagnosis, they will receive personalized recommendations for their patients, based on medical information, automated interpretation of pathology clinical guidelines, and intelligence from a number of past clinical cases, documented in the hospital information system.

In addition to supporting decision-making about treatment, it can provide administrators at Fondazione IRCCS Istituto Nazionale dei Tumori with an aggregated view of patient care, enabling them to evaluate performances and using this knowledge to streamline processes for maximum safety. For example, hospital administrators can drill down into the data to better understand what the guidelines were for recommendations, what succeeded, and whether treatment quality has improved.

"*Our clinical genomics solution will enable care-givers to better personalize treatment and increase its chances of success*," explains **Haim Nelken, senior manager of integration technologies at IBM Research - Haifa**. "*The solution provides physicians with recommendations that go beyond the results of clinical trials. It allows them to go deeper into the data and more accurately follow the reasoning that led to choices previously made on the basis of subjective memory, intuition, or clinical trial results*."

One interesting example of insight highlighted by the solution in work with other organizations showed that, statistically, physicians tend to give more aggressive medical therapy treatment to women who are sick as opposed to men with the same problem. Another analysis brought to light that geriatric patients often do better with no treatment for certain diseases.

Any patient data securely collected from hospitals and health organizations is 'de-identified' or made anonymous through the removal of personal identifying details. The IBM system does not have to know which individuals the information came from in order to draw conclusions. It works by identifying similar cases based on age, sex, symptoms, diagnosis, or other related factors.

This solution is just one example of how IBM researchers are helping transform the healthcare industry by creating analytics technologies that will simplify the complex interactions in the healthcare delivery process while optimizing outcomes, ultimately helping to make patient care smarter and lower costs. In addition to cancer and AIDS, this solution can be adapted to support evidence-based treatment for any disease with complex genetic variants and a variety of treatment options. The solution aims to improve the care process by adapting the available treatment to a specific individual, avoiding delays of treatment delivery, and improving outcomes for various diseases. IBM Clinical Genomics uses some of the same natural language processing and machine learning capabilities as IBM Watson, but the clinical genomics platform has unique capabilities that are complimentary to the deep question and answering abilities of IBM Watson for healthcare.

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