IBM UK Newsroom

IBM and Quest Diagnostics Launch Watson-Powered Genomic Sequencing Service to Help Physicians Bring Precision Cancer Treatments to Patients Nationwide

Memorial Sloan Kettering Cancer Center to Provide Deep Knowledge Base to Augment Watson's Data Sources and Quest's Medical Reporting New Service Extends Reach to Community Oncologists Who Provide 70 Percent of Cancer Care

CAMBRIDGE, MA, MADISON, NJ, and NEW YORK, NY - 18 Oct 2016: IBM Watson Health (NYSE: IBM) and Quest Diagnostics (NYSE: DGX) today announced the launch of *IBM Watson Genomics from Quest Diagnostics*, a new service that helps advance precision medicine by combining cognitive computing with genomic tumor sequencing. Memorial Sloan Kettering Cancer Center (MSK) will supplement Watson's corpus of scientific data with OncoKB, a precision oncology knowledge base to help inform precision treatment options for cancer patients.

The launch marks the first time that Watson for Genomics has been made widely available to patients and physicians across the country. Quest Diagnostics, a leader in genomic sequencing and oncology diagnostics that serves half the nation's physicians and hospitals, extends these advanced capabilities to thousands of the country's community oncologists, who provide an estimated 70 percent of cancer care in the United States. The Broad Institute of MIT and Harvard will provide additional genome sequencing capabilities as part of the collaboration.

The new service involves laboratory sequencing and analysis of a tumor's genomic makeup to help reveal mutations that can be associated with targeted therapies and clinical trials. Watson then compares those mutations against relevant medical literature, clinical studies, pharmacopeia and carefully annotated rules created by leading oncologists, including those from MSK. Watson for Genomics ingests approximately 10,000 scientific articles and 100 new clinical trials every month.

"The beauty of Watson is that it can be used to dramatically scale access to knowledge and scientific insight, whether a patient is being treated in an urban academic medical center or a rural community clinic," said John Kelly III, PhD, senior vice president, IBM Research and Cognitive Solutions. "Through this collaboration with the cancer community's leading clinical and pathology experts, thousands of more patients can potentially benefit from the world's growing body of knowledge about this disease."

Bolstering the corpus of data Watson uses, MSK will provide OncoKB, a database of clinical evidence that will help Watson uncover treatment options that could target the specific genetic abnormalities that are causing the growth of the cancer. Comparison of literature that may take medical experts weeks to prepare can now be completed in significantly less time.

“Precision medicine is changing the way we treat cancer and giving new hope to people living with the disease,” said Jay G. Wohlgemuth, M.D., chief medical officer and senior vice president of research, development and medical, Quest Diagnostics. “However, access to genomic sequencing and tumor analysis required to determine appropriate precision medicine treatments for a patient can be a challenge. This service combines Quest’s state-of-the-art tumor analysis and national access with the cognitive computing of IBM’s Watson and the deep cancer treatment expertise of MSK. This is a powerful combination that we believe it will leap frog conventional genomic services as a better approach for identifying targeted oncology treatments.”

How the Solution Works

The efficacy of cancer therapy often depends on the type of gene mutations occurring in the cancer tumor. Many of the latest therapies are designed to work by targeting tumors with a specific genetic makeup. A therapy that is effective for one type of cancer may in fact be efficacious for many others that share similar mutations. But these mutations vary for each individual and can even change during treatment. Correlating them to the appropriate treatments requires genomic sequencing expertise as well as information from knowledge bases, which must be routinely updated to account for rapidly evolving scientific discoveries, available drug therapies and, for patients for whom no therapy is indicated, and appropriate clinical trials.

The new service helps close these gaps: To access Watson’s evidence-based report, the treating oncologist or other physician will send a patient’s solid tumor biopsy tissue to Quest Diagnostics, where pathologists will prepare the tissue sample for genomic sequencing. Scientists at Quest will then sequence the treatment-associated genes using advanced next-generation sequencing technologies and feed the genetic file into Watson. Watson will then use the sequenced genetic data and compare those data against massive bodies of clinical, scientific and pharmacological databases to help uncover potential therapeutic options that match the patient’s tumor mutations. A Quest pathologist will review and validate the results and prepare a report to send back to the treating physician.

“We now know that genetic alterations are responsible for many cancers, but it remains challenging for most clinicians to deliver on the promise of precision medicine since it requires specialized expertise and a time-consuming interpretation of massive amounts of data,” said Paul Sabbatini, MD, Deputy Physician-in-Chief for Clinical Research, Memorial Sloan Kettering Cancer Center. “Through this collaboration, oncologists will have access to MSK’s expertly curated information about the effects and treatment implications of specific cancer gene alterations. This has the power to scale expertise and help improve patient care.”

About IBM Watson Health

Watson is the first commercially available cognitive computing capability representing a new era in computing. The system, delivered through the cloud, analyzes high volumes of data, understands complex questions posed in natural language, and proposes evidence-based answers. Watson continuously learns, gaining in value and knowledge over time, from previous interactions. In April 2015, the company launched IBM Watson Health and the Watson Health Cloud platform. The new unit will help improve the ability of doctors, researchers and insurers to innovate by surfacing insights from the massive amount of personal health data being created and shared daily. The Watson Health Cloud allows this information to be de-identified, shared and combined with a dynamic and constantly growing aggregated view of clinical, research and social health data. For more information on IBM Watson, visit: ibm.com/watson. For more information on IBM Watson Health, visit: ibm.com/watsonhealth.

About Quest Diagnostics

Quest Diagnostics empowers people to take action to improve health outcomes. Derived from the world's largest database of clinical lab results, our diagnostic insights reveal new avenues to identify and treat disease, inspire healthy behaviors and improve health care management. Quest annually serves one in three adult Americans and half the physicians and hospitals in the United States, and our 44,000 employees understand that, in the right hands and with the right context, our diagnostic insights can inspire actions that transform lives. www.QuestDiagnostics.com.

About Memorial Sloan Kettering

Memorial Sloan Kettering is the world’s oldest and largest private cancer center, home to more than 14,000 physicians, scientists, nurses, and staff united by a relentless dedication to conquering cancer. As an independent institution, MSK combines 130 years of research and clinical leadership with the freedom to provide highly individualized, exceptional care to each patient. And MSK’s always-evolving educational programs continue to train new leaders in the field, here and around the world. For more information, go to www.mskcc.org.

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