IBM's Watson to help in brain cancer research (Update)

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Watson demoed by IBM employees. Credit: Wikipedia

IBM is teaming up with the New York Genome Center to help fight brain cancer.

The company said Wednesday that its Watson cloud computing system will be used in partnership with a New York-based genetic research center to help develop treatments for glioblastoma, the most common

type of brain cancer in U.S. adults.

"Time definitely is not on your side when you have glioblastoma and that's where Watson comes in," Dr. Robert Darnell, New York Genome's president, CEO and scientific director, said at a Wednesday event announcing the deal.

Glioblastoma is an extremely aggressive form of cancer. The median survival rate is 12 to 14 months and the disease kills about 13,000 people each year.

As part of the clinical trial, New York Genome Center, a nonprofit consortium of academic, medical and industry officials, will sequence the DNA of glioblastoma patients, then use Watson to combine that data with clinical information to help determine the best way to treat each patient.

What makes Watson unique is that it isn't programed like most computers. Instead of relying on the information that's put into it, Watson learns by "reading" vast amounts of information and combining it with the results of previous work to find answers to problems. Those characteristics make Watson ideal for extremely data-heavy work in fields such as health care and finance.

The partnership also comes at a time when IBM is increasing its focus on Watson and other cloud-based software services, as it moves further away from its computer hardware roots. Earlier this year, IBM announced it would invest $1 billion to give Watson its own business division and headquarters in New York City.

John Kelly, a senior vice president and director of IBM Research, says there's a vast amount of data involved in DNA sequencing, which then must be combined with all of the clinical data involved in a particular

patient's case. The resulting pool of information is so big that it's impossible for people to deal with.

"This is sort of big data on steroids," Kelly says.

Darnell says the hope is that Watson will speed up the time it takes for physicians to determine a patient's treatment plan.

For instance, if Watson determines that a child's leukemia has genetic traits similar to melanoma, a melanoma drug might be successful in shrinking that child's tumor, he says.

In addition, while a team of top physicians and researchers could do the same work, though at a slower pace, there aren't enough resources to help everyone. But Watson has the potential to be scalable and help many more people, Darnell says.

"This is the proverbial needle in the haystack and the haystack is enormous," Kelly says. "Watson can do in seconds what would take people years. And we can get it down to a really personal level."

The doctors working on the project hope to start with 20 brain cancer patients, sequence their DNA and then run the information through Watson to figure out the best ways to treat them, Darnell says.

Armonk, New York-based IBM Corp. already has a partnership with Memorial Sloan-Kettering Cancer Center, where Watson is also used to help treat cancer.