Pfizer Taps IBM for Research Collaboration to Transform Parkinson's Disease Care

Experimental "Internet of Things" System Uses Connected Devices to Enable Remote Measurement of Health and Quality of Life in Real-Time Multi-Year Project Could Potentially Change How Clinical Trials are Conducted

New York and Armonk, N.Y - 07 Apr 2016: Pfizer Inc. (NYSE:PFE) and IBM (NYSE: IBM) today announced a first-of-its-kind research collaboration to develop innovative remote monitoring solutions aimed at transforming how clinicians deliver care to patients suffering from Parkinson's disease. The experimental approach will rely on a system of sensors, mobile devices, and machine learning to provide real-time, around-the-clock disease symptom information to clinicians and researchers. The ultimate goal is to obtain a better understanding of a patient's disease progression and medication response to help inform treatment decisions and clinical trial design, while also speeding the development of new therapeutic options.

Parkinson's disease in particular requires ongoing adjustment to medication depending on the progression of the disease and response of the patient. The collaboration seeks to create a holistic view of a patient's well-being by seeking to accurately measure a variety of health indicators, including motor function, dyskinesia, cognition, sleep and daily activities such as grooming, dressing and eating. Insights from these data could help clinicians understand the effect of a patient's medication as the disease progresses, enabling them to help optimize the patient's treatment regimen as needed. Data generated through the system could also arm researchers with the insights and real-world evidence needed to help accelerate potential new and

better therapies.

According to the World Health Organization, neurological disorders including Parkinson's disease, Alzheimer's disease, stroke, multiple sclerosis and epilepsy impact almost one billion families around the world[i] and account for 12 percent of total deaths globally.[ii] Many diseases of the brain, spine, and nerves are progressive conditions that get worse over time and can create uncontrolled movement, impair the ability to think, and cause other debilitating symptoms impacting the patient's quality of life. Approximately 60,000 Americans are diagnosed with Parkinson's disease each year according to the Parkinson's Disease Foundation, and an estimated seven to 10 million people suffer from the disease globally.[iii]

IBM Research Data Scientist Eric Clark explores wearable technologies that could help monitor and analyze biological data from study subjects on Thursday, April 7, 2016 at IBM's T. J. Watson Research Center in Yorktown, NY. IBM and Pfizer are collaborating to create a first-of-a-kind remote monitoring system to support patients with Parkinson's disease. This non-invasive, real-time approach to patient data will offer new insights into disease progression and treatment plans. By applying advanced analytics and machine learning to sensor data, the hope is to transform how neurological diseases are diagnosed and treated. (Feature Photo Service for IBM)

"We have an opportunity to potentially redefine how we think about patient outcomes and 24/7 monitoring, by combining Pfizer's scientific, medical and regulatory expertise with IBM's ability to integrate and interpret complex data in innovative ways," said Mikael Dolsten, M.D., Ph.D., President of Pfizer Worldwide Research and Development. "The key to our success will be to deliver a reliable, scalable system of measurement and analysis that would help inform our clinical programs across important areas of unmet medical need, potentially accelerating the drug development and regulatory approval processes and helping us to get better therapies to patients, faster."

"With the proliferation of digital health information, one area that remains elusive is the collection of real-time physiological data to support disease management," said Arvind Krishna, Senior Vice President and Director of IBM Research. "We are testing ways to create a system that passively collects data with little to no burden on the patient, and to provide doctors and researchers with objective, real-time insights that we believe could fundamentally change the way patients are monitored and treated."

The two companies project that the system will move into initial clinical testing quickly. Pfizer and IBM will convene an external advisory board of patient groups, advocacy organizations, clinicians, and neuroscientists for guidance on the use of technology, medical devices, data management, and research

protocols, and to ensure the needs of patients guide the program.

IBM IoT in Healthcare

This project marks a significant milestone in IBM's work to advance Internet of Things (IoT) technologies in healthcare. Emory University Hospital is creating an instrumented ICU using IBM's streaming analytics technology to advance predictive medicine for critical patients in the ICU. The new system will enable clinicians to acquire, analyze and correlate medical data at a volume and velocity that was never before possible. Neonatal intensive care specialists at The University of Ontario Institute of Technology are relying on the same software to analyze more than 1,000 pieces of unique information per second flowing from sensors and equipment monitoring premature babies, helping caregivers spot the onset of sepsis infections up to 24 hours earlier. And, Medtronic is working with IBM Watson Health to create a cognitive app designed to analyze real-time data from Medtronic devices to help detect important patterns and trends for people with diabetes.

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About Pfizer Inc.

At Pfizer, we apply science and our global resources to bring therapies to people that extend and significantly improve their lives. We strive to set the standard for quality, safety and value in the discovery, development and manufacture of health care products. Our global portfolio includes medicines and vaccines as well as many of the world's best-known consumer health care products. Every day, Pfizer colleagues work across developed and emerging markets to advance wellness, prevention, treatments and cures that challenge the most feared diseases of our time. Consistent with our responsibility as one of the world's premier innovative biopharmaceutical companies, we collaborate with health care providers, governments and local communities to support and expand access to reliable, affordable health care around the world. For more than 150 years, Pfizer has worked to make a difference for all who rely on us. For more information, please visit us at www.pfizer.com. In addition, to learn more, follow us on Twitter at @Pfizer and @Pfizer_News and like us on Facebook at Facebook.com/Pfizer.

Pfizer Disclosure Notice

The information contained in this release is as of April 7, 2016. Pfizer assumes no obligation to update

forward-looking statements contained in this release as the result of new information or future events or developments.

This release contains forward-looking information about a research collaboration with IBM to develop innovative remote monitoring solutions aimed at transforming how clinicians deliver care to patients suffering from Parkinson's disease, and its potential benefits, that involves substantial risks and uncertainties that could cause actual results to differ materially from those expressed or implied by such statements. Risks and uncertainties include, among other things, the uncertainties inherent in research and development; risks related to the ability to realize the anticipated benefits of the collaboration with IBM, including the possibility that the expected benefits from such collaboration will not be realized or will not be realized within the expected time period; other business effects, including the effects of industry, market, economic, political or regulatory conditions; and competitive developments.

A further description of risks and uncertainties can be found in Pfizer's Annual Report on Form 10-K for the fiscal year ended December 31, 2015, and in its subsequent reports on Form 10-Q, including in the sections thereof captioned "Risk Factors" and "Forward-Looking Information and Factors That May Affect Future Results", as well as in its subsequent reports on Form 8-K, all of which are filed with the U.S. Securities and Exchange Commission and available at www.sec.gov and www.pfizer.com.

i *BrainFacts.org. Global Prevalence of Diseases and Disorders. 27 April 2012. Available at http://www.brainfacts.org/policymakers/global-prevalence-of-diseases-and-disorders*

Accessed on April 4, 2016

ii World Health Organization. Neurological disorders: Public Health Challenges. 2006. Chapter 2, page 35. Available at http://www.who.int/mental_health/neurology/chapter_2_neuro_disorders_public_h_challenges.pdf

Accessed on April 4, 2016.

iii Parkinson's Disease Foundation. Statistics on Parkinson's. Available at www.pdf.org/en/parkinson_statistics Accessed on April 4, 2016

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IBM and Pfizer Team on IoT Parkinson's Research

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