C-Path's Parkinson's Consortium Supports Groundbreaking Research Utilizing Smartwatches to Monitor Disease Progression

TUCSON, Ariz., June 12, 2024 — Critical Path Institute (C-Path) today announced a new publication on how the use of wearable technology can optimize measuring symptoms important to people with Parkinson's disease. The newly published manuscript in *npj Parkinson's Disease* highlights a multistakeholder initiative consisting of collaborators from around the world coming together to share knowledge, data and resources to ask how new technologies can help to monitor people living with Parkinson's in new ways.

Critical Path for Parkinson's (CPP) Consortium's Executive Director Diane Stephenson, Ph.D. and CPP's Scientific Director Martijn Müller, Ph.D. are both authors on the publication.

The study reveals that certain measurements deployed on smartphone devices, can track Parkinson's symptoms in early-stage individuals, offering objective, real-world measures of disease progression.

Stephenson emphasized the collaborative nature of the project, "On behalf of C-Path, we are delighted to see the astounding progress of this unique project. The early and often feedback from regulators have shaped this study in ways allowing us to link the clinical meaningfulness of symptoms measured by digital health technologies to the voices of people with lived experience. By partnering with patients, regulators, industry, and academic experts this project is serving as a precedent for other disease areas to follow."

"Digital measures hold the promise to provide sensitive, real-world assessments of disease progression," said Jamie Adams, M.D., lead author and associate professor of Neurology at the University of Rochester Medical Center. "Data from smartwatches and smartphones can remotely monitor changes in multiple domains of the disease, aiding in evaluating future therapies."

Parkinson's disease presents complex challenges with widely varying symptoms and progression. Traditional tracking tools are often subjective and limited to clinical visits, resulting in missing daily patient experiences. This study shows smartwatches can passively monitor symptoms like gait and tremor and use tasks such as finger tapping to assess fine motor skills and voice recording to measure speech-related symptoms.

In the WATCH-PD study, researchers followed early-stage Parkinson's participants for 12 months. Data revealed significant declines in gait, increased tremor, and modest speech changes. The smartwatch detected decreases in arm swing and daily activity levels, aligning with findings from other long-term studies.

The WATCH-PD study, designed to replicate a multi-center clinical trial, included input from the pharmaceutical industry, regulators, investigators, nonprofit patient organizations and people living with Parkinson's. Supported by The Michael J. Fox Foundation, the study has been extended to follow participants for an additional 18 months with a focus on the patient experience.

Authors of the study included Ray Dorsey, Melissa Kostrzebski, Peggy Auinger, Peter Wilmot, Yvonne Pohlson, and Stella Jensen-Roberts with URMC; Tairmae Kangarloo, Yishu Gong, Vahe Khachadourian, Brian Tracey, Dmitri Volfson, and Robert Latzman with Takeda Pharmaceuticals; Martijn Müller and Diane Stephenson with the Critical Path Institute; Joshua Cosman with AbbVie Pharmaceuticals; Jeremy Edgerton with Biogen; David Anderson and Allen Best with Clinical Ink; and the Parkinson Study Group Watch-PD Study investigators and collaborators including Christopher Tarolli from URMC. The research was supported

with funding from Biogen, Takeda, and the members of the Critical Path for Parkinson's Consortium.

About Critical Path Institute

Critical Path Institute (C-Path) is an independent, nonprofit established in 2005 as a public-private partnership, in response to the FDA's Critical Path Initiative. **C-Path's mission is to lead collaborations that advance better treatments for people worldwide**. Globally recognized as a pioneer in accelerating drug development, C-Path has established numerous international consortia, programs and initiatives that currently include more than 1,600 scientists and representatives from government and regulatory agencies, academia, patient organizations, disease foundations and pharmaceutical and biotech companies. With dedicated team members located throughout the world, C-Path's global headquarters is in Tucson, Arizona and C-Path's Europe subsidiary is headquartered in Amsterdam, Netherlands. For more information, visit c-path.org.

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