Technology-based Adaptive Treatment Strategies for Antiretroviral Adherence

PI: Parya Saberi PharmD MAS
Primary Mentor: Mallory Johnson PhD
Co-mentors: Nicolas Sheon PhD, Michael Silverberg PhD MPH, Ida Sim PhD MD, Eric Vittinghoff PhD MPH
Scientific Advisor: Margaret Chesney PhD, Susan Murphy PhD, Jane Simoni PhD MA, Cherrie Boyer PhD

Project Description

The Achilles heel of successful HIV treatment is adherence to antiretroviral (ARV) therapy, as non-adherence remains one of the strongest predictors of progression to AIDS and death. The U.S. Department of Health and Human Services, the British HIV Association, and the World Health Organization acknowledge the supportive role of technology for adherence. This recognition underscores the importance of the need for stronger evidence of the effectiveness of these technologies. As a result and because forgetting to take ARVs is the most commonly stated reason for non-adherence, several studies have examined and are assessing the efficacy of electronic reminder devices (such as timers and pagers) on ARV adherence. However, most studies regarding reminder devices have not revealed clinically significant improvements in adherence; which may be because they have primarily investigated the role of a single method, i.e., reminder devices, irrespective of patient-specific reasons for non-adherence. Thus, instead of using tailored technology-based methods to address distinct non-adherence reasons, most studies compel the participant to "fit" the technology. This can lead to ineffective interventions, unaddressed and unresolved adherence problems, and a misuse of resources. While it is likely that reminder devices are useful for memory-impaired individuals, the underlying cause of "forgetfulness" may be due to other issues such as stigma, depression, lack of social support, etc. Therefore, to most effectively use technology to improve adherence, customized interventions that focus on the patients' specific ARV non-adherence reasons need to be considered. The goal of this project is to develop individually-tailored approaches to improve ARV adherence and treatment engagement of HIV+ individuals, particularly among racial/ethnic minorities. With support from my mentoring team, I am proposing a series of research projects that have significant personal and public health implications in the area of ARV adherence. The overarching research objectives of this K23 proposal is to identify technology-based approaches that have the potential to overcome specific reasons for ARV non-adherence in youth; in other words, to delineate technology-based methods that would "fit" the unique adherence problem of each individual.