The Center for Machine Learning and Health invites you to participate in an *Innovation Session*: Exploring Healthcare Challenges Driven by the Aging Population

The *Innovation Session* seeks to level set then ‘unpack’ the Challenge. Deeper context, underlying processes, availability and characteristics of data are then used to test the scope and value of solution elements/technologies that resolve key elements of the challenge. **Below is the Challenge Statement for your review.**

The goal of the session is to enhance discovery to stimulate and enhance solution building.

**Engage with Challenge owners from the Aging Institute at UPMC:**

**Taafoi S. Kamara, MPH.** Administrative Director  
The Aging Institute at UPMC

**Dr. Rick Morycz.** Associate Professor of Psychiatry, Medicine, and Social Work  
University of Pittsburgh

**Date + Time + Location**  
September 5th 2019  
5:30pm – 7:00pm (refreshments provided)  
CMLH Office at 4615 Forbes Avenue

**Agenda**
- The Aging Institute and UPMC
- Towards a more Proactive Approach: Leveraging data to enable coordinated care for the growing aged population
- Open discussion of challenges in this space

**Benefits of Attending**
- Interested PIs may find a basis for proposing research projects that may be funded by the CMLH
- The discussion may define opportunities to propose student work that may be supported by a CMLH Fellowship
- Networking that may enrich your network of collaborators, on and off-campus

Reply by 9/4 to CMLH@cs.cmu.edu include your name, title and department. Upon your RSVP, CMLH will email you additional information regarding the Challenge prior to the session.

We look forward to seeing you at the session!
The Aging Institute of UPMC Senior Services and the University of Pittsburgh serves as a catalyst for innovation and mobilizing the resources of UPMC and the University of Pittsburgh to the benefit of an aging population. The Aging Institute connects older adults, caregivers, health professionals and students with resources and programs, including a multidisciplinary network of comprehensive clinical care. Additionally, the Aging Institute provides access to one of the nation’s largest and most diverse portfolios of aging-related research, and one of the most extensive geriatric and gerontologic education programs in the country.

The Need: One of the chief initiatives of the Aging Institute is its Help & Referral line. This free service is available to all, regardless of location, level of need or insurance affiliation and is designed to connect older adults, caregivers, community partners and health professionals with supportive resources. Inquiries are submitted through web requests, calls to both a toll-free number and an exchange dedicated to callers coming from the UPMC McKeesport catchment area, and walk-in visits to the Aging Institute Resource Center at UPMC McKeesport. Most inquiries fall into the categories of requests for 1) connections to geriatric clinical services, 2) in-home services (including non-medical, medical, and companionship services or support), and 3) the identification of community resources, particularly those in support of veterans and their families. Clients speak with trained health professionals and may have multiple conversations to address their chief concern and coordinate a plan of action.

We are seeking assistance to create an innovative approach to enhance continuity and data collection methods for this resource. The current method of receiving referrals is reactive and relies upon a client initiating the call to the hotline, but we seek to connect with the client, right at the point of care in the physician office and create a data pathway to become integrated into the e-Health record system providing the opportunity both for direct referrals to the Help and Referral line as well as follow up from the Aging Institute back to the clinical provider.

The Challenge: The Help and Referral Line was established in 2006, initially recording cases via paper and pencil form and soon after moved to use the Daybreak EAP software system supporting the creation of “cases” and representing the multiple “.touches” that may occur over time between the trained health professional on the call line and the client. The system was deemed to be cost-effective and has undergone very modest upgrades since the start of its use. There is data generated by the Help and Referral Line, but it is in a stand-alone system that is not integrated with UPMC clinician practices. At the core of this challenge is a system that could incorporate existing data, integrate with the clinical providers, but also incorporate additional data, reported and estimated Social Determinants of Health that would help enable proactive management of this population.

The Vision: is to leverage technology to provide a more proactive service in this growing space (65+). One that is more human centered, and that coordinates and optimizes clinical engagement, with caregiver and community/social support.
Limitations of Current Systems and Procedures:
• Daybreak version utilized by the Institute is not cloud-based
• is not integrated with other e-record systems
• contains too many free-text fields that limit reporting capabilities

Opportunities
Integration with both clinical and care-coordination sources of data including:
• publicly funded supportive services such the Area Agency on Aging within the PA Department of Aging
• cost and utilization of services from an Integrated Delivery and Financing System like UPMC
• Medicare and Medicaid services and costs provided by CMS
• utilization of community-based resources such as the Meals-on-Wheels program
• qualitative and quantitative costs to caregivers

Potential Outcomes:
• integration of diverse data sources may support the creation of a predictive algorithm and models to help determine needs and reduce utilizations of services and support the management of caregiver-heavy illness such for those with Alzheimer’s Disease and related dementia
• decreases in duplicative medical services and reduction in rehospitalization rates
• greater continuity of care
• increased efficiency and utilization of limited clinical resources, such as specialized geriatric psychiatry service
• increase client satisfaction
• integrated approach to address social determinants of health

In Summary: More broadly, there is little option but to address the challenges that this growing patient population presents. Health care systems will need to prepare for the increasing incidences of chronic conditions within the aging population, as well as develop strategies to prevent falls and curb obesity. An important challenge is implementation of new approaches in health care delivery to address the changing health status of this aging population. With chronic conditions on the rise in this population and comorbidities, health care becomes more complex and potentially costly for this population. Resource needs will continue to increase across all health care settings – a shortage of health care professionals is expected as well as caregivers is expected as family structures have evolved. Additionally, the sustainability and structure of federal programs in relation to the increasing aging population are a concern.