PROJECT TITLE: Comprehensive Analysis on Impact of Social Determinants to Improve Care Across Populations

PROPOSAL NUMBER: Pop1 | PI: Borkowski, Mastrangelo, Ferris, Kash

RESEARCH THEME: Population Health

BUDGET: $150,000 | MULTI-UNIVERSITY PROJECT: YES | PROJECT YEAR: 1

DESCRIPTION:

Social and environmental determinants, such as economic stability, housing and physical environment, food access, community support, and availability of health care systems impact health outcomes and the satisfaction of patients and care providers. Initiatives are under way to improve our understanding of how these social factors can influence the organization and delivery of care to patient communities, targeting the broad population as well as focused efforts on those with certain medical conditions. However, only limited research has focused on the relationship between social determinants and healthcare for specific sub-populations, such as military veterans, pediatric populations, and those with histories of readmission or repeated ED visits. Additionally, there is value in more completely understanding how these social factors interact with health conditions in regard to patient satisfaction and HCAHPS scores. This collaborative project seeks to address these aims and broaden the knowledge base concerning the effects of social determinants on mental and physical health and the utilization of available healthcare.

HOW THIS IS DIFFERENT THAN RELATED RESEARCH:

This proposed research focuses on identifying the social factors that contribute to the mental and physical health of individuals from target populations (veterans, children, recurrent ED visitors). The understanding of these factors can inform ways of improving the effectiveness of care and the patient experience. This research will support efforts to extend patient care beyond clinical parameters, to understand the effects of social demographics on patient experience through HCHAPS, and to orient clinical practice for improved patient experience and reduction in the cost of care.

EXPERIMENTAL PLAN:

We will obtain data from the UAB enterprise data warehouse (EDW) for all patients who were discharged between 2016 - 2017. Notably, these data will include Social Determinants of Health (SDH). Data will also be obtained from patients enrolled in the Central Texas Veteran's Health Care system that are enrolled in their integrated health program. The compiled database will be analyzed via mixed methods to determine significant direct and interacting social and medical factors impacting healthcare utilization. This analysis will inform the development of a predictive model that can be evaluated in simulation.

EXPECTED MILESTONES:

Month 1-2: Obtain IRB approval
Month 3-6: Distinguish relationships among social determinants and health variables, obtain/merge/develop databases that include both mental and physical health flags, process data and produce descriptive analytics
Month 7-8: Develop predictive model and evaluate in simulation, iteratively refine model.
Month 9-12: Write report to include results for each target population

BENEFITS TO INDUSTRY:

1) Predictive models for readmission, which incorporate social and medical factors, can be used to inform and guide care plans.
2) Access to databases for selected patient groups.

EXPECTED DELIVERABLES:

1) Publication of results of the analysis, including the identification of social determinants affecting care need and readmissions.
2) Publication of the developed predictive model to assess likelihood of repeat ED visits and readmissions.
3) Access to developed databases that integrates both mental health and clinical factors for selected patient groups.