

COMPLETED Pilot and Feasibility Projects:

Year 1

Title of Project: Prediction of Undiagnosed Prediabetes and Type 2 Diabetes (T2DM) in Pregnancy

Project Principal Investigator: Emma Eggleston, MD MPH, West Virginia University (formerly HPHC) (HDS-CDTR Affiliate Faculty)

Project Summary:

In parallel with the continued world-wide rise in T2DM, the incidence of T2DM in pregnancy appears to be increasing. However data on pre-existing diabetes or prediabetes are sparse and an important fraction of women diagnosed with gestational diabetes likely have undiagnosed dysglycemia that eluded detection prior to pregnancy. Identifying this segment of the population with gestational diabetes is critical as T2DM increases the risk of adverse outcomes during pregnancy (pre-eclampsia, miscarriage, congenital abnormalities) and in the long term for both mother and offspring. This pilot study had two specific aims: (1) To develop an electronic prediction rule for pre-existing T2DM or prediabetes in pregnancy using routinely available data from EHRs; (2) To prospectively apply the prediction rule to an existing automated EHR based public health surveillance and electronic reporting system. Dr. Eggleston is currently working closely with her health plan partners to incorporate the completed prediction tool developed in this pilot study directly into clinical practice.

Year 2

Title of Project: Medication Non-Adherence and Clinical Inertia Among Diverse Persons with Diabetes in a Government-Managed Care Plan for Medicaid and Uninsured Populations

Project Principal Investigator: Neda Ratanawongsa, MD, UCSF (HDS-CDTR Affiliate Faculty)

Project Summary:

Despite evidence that optimizing treatments for blood pressure, lipid, and glycemic control can reduce cardiovascular risk for persons with type 2 diabetes, minority populations and patients of low socioeconomic status are less likely to achieve optimal diabetes treatment goals. This pilot study has two specific aims: (1) To measure prescription drug adherence, including discrete, stage-specific adherence indicators (primary adherence, early non-persistence, discontinuation) and continuous measures including new prescription medication gaps [NPMG] and continuous medication gaps [CMG], and treatment intensification responses to suboptimal treatment goals to the SFHP and HSF populations, using SFHP pharmacy claims data and Community Health Network of San Francisco (CHNSF) registry data; (2) To use the measures developed in Specific Aim 1 to describe the relative contribution of medication non-adherence and clinical inertia to suboptimal glycemic, blood pressure, and hyperlipidemia goals among diabetics in the SFHP and HSF population and to compare these proportions to those documented in prior studies.

Year 3

Title of Project: A Health IT Investigation of Clinical Action and Health System Resource Utilization for Inadequate Exercise in Relation to Gestational Diabetes (GDM) Risk and Glycemic Control in Women with GDM and Pregravid Diabetes

Project Principal Investigator: Samantha Ehrlich, PhD, University of Tennessee Knoxville (formerly KPNC) (HDS-CDTR Affiliate Faculty)

Project Summary:

This work investigates the effects of physical activity in pregnancy on offspring body size and composition from birth to 1 year of age, as rapid increases in size during this period strongly predict childhood obesity. It also used existing data sources to efficiently evaluate the effects of a physician initiated intervention promoting physical activity and appropriate weight gain in pregnancy on maternal gestational weight gain and infant birthweight by leveraging data from the newly-implemented Exercise as a Vital Sign (EVS) program at KPNC, which collects self-reported physical activity data from patients at each outpatient visit. Such knowledge is greatly needed to inform the development and evaluation of evidence-based 'upstream' (i.e. during the gestational period) interventions for intergenerational obesity prevention. The data collected for this pilot study were an essential component for Dr. Ehrlich's current K01 project entitled, "Physical Activity in Pregnancy for Intergenerational Obesity Prevention (K01DK105106)" which was recently funded by NIDDK.

Year 4

Title of Project: Addressing Gaps in Research on Pay for Performance (P4P) to Improve Quality of Diabetes Care: Provider Perspectives

Project Principal Investigator: Laura Garabedian, MPH PhD, HPHC (HDS-CDTR Affiliate Faculty)

Project Summary:

This qualitative study aims to improve understanding of how financial incentives, specifically pay for performance (P4P), affect diabetes treatment and outcomes in primary care settings. Dr. Garabedian broadened the initial scope of the interview and focus group guide to include (1) questions about how physicians define quality of care for their patients with diabetes and (2) questions about what else insurers can do, beyond P4P, to help improve quality of care for diabetes patients. To date, she has conducted 10 individual interviews and 1 focus group (with 5 physicians, 1 NP and 1 PA). The completed interviews and focus group have been transcribed and she is in the process of identifying key themes via the immersion-crystallization method.

Title of Project: Addressing Pilot Intervention of Group Parent Education, Reinforcing Text Messages and 1:1 Provider Visits for the Treatment of Overweight/Obese, Low-income, Latino Children

Project Principal Investigators: Sarah Kim, MD; Amy Beck, MD, UCSF

Project Summary:

This pilot study uses a mixed-methods approach to evaluate the reach and efficacy of a scalable intervention to treat overweight/obesity in low-income Latino children ages 4-11 referred to a community-based pediatric obesity clinic. The intervention consists of three individual provider visits, five group parent education sessions, and 24 text messages to parents to reinforce intervention content.

Year 5

Title of Project: Cost-effectiveness of Expanding the Scope of Practice of Community Psychiatrists to Include Initial Treatment of Diabetes and Pre-diabetes

Project Principal Investigator: Christine Mangurian, PhD, UCSF (HDS-CDTR Affiliate Faculty)

Project Summary:

The long-term goal of Dr. Mangurian's research program is to prevent diabetes among people with severe mental illness (e.g., schizophrenia, bipolar disorder). To attain this goal, Dr. Mangurian and her community health partners launched a pilot intervention at a community mental health clinic on January 1, 2015. The goal of this program is to provide community psychiatrists with education and a primary care eConsultant to help support their own efforts to prescribe medications to treat diabetes. Expanding the scope of practice of community psychiatrists to treat diabetes and pre-diabetes has never been examined previously. This specific HDS-CDTR pilot project, which began in September 2015, considers whether this expanded scope of practice would be cost-effective. The research team will estimate the cost of the intervention relative to usual care, and will use a validated simulation model of diabetes outcomes to evaluate the cost-effectiveness of the pilot intervention compared to usual care. The specific pilot aims are to determine whether treatment of diabetes in community mental health clinics via the education and consultation intervention is cost-effective when compared to usual care, and determine whether treatment of pre-diabetes in community mental health clinics is cost-effective when compared to usual care. Dr. Mangurian plans to use funds from this pilot award to estimate precise labor and non-labor costs of the intervention upon the system itself.

Year 6

Title of Project: A Self-Affirmation Intervention to Enhance Patient Outreach for Health System-based Lifestyle Programs for Diabetes Prevention

Project Principal Investigator: Susan D. Brown, PhD, Research Scientist 1 (ESI), KPNC(HDS-CDTR Affiliate Faculty)

Project Summary:

Healthy lifestyle programs can prevent type 2 diabetes and are available to many patients within health care delivery systems. However little is known about how to maximize program uptake among those at high risk, such as women with a history of gestational diabetes (GDM). Innovative health communication strategies are needed to enhance program outreach. Self-affirmation interventions—whereby individuals affirm their self-worth by reflecting on important values—have been shown to reduce dismissiveness of diabetes risk information and promote risk assessment, and thus have potential to improve program outreach and eventual uptake. The aims of this pilot study are to encourage women with a history of GDM to participate in healthy lifestyle programs for diabetes prevention. To achieve these aims, we will: (1) develop, (2) evaluate via pilot testing, and (3) refine a self-affirmation intervention that can be feasibly implemented as part of program outreach within a health care delivery system.

Title of Project: Interactive Community Program Guide for Diabetes Prevention in Primary Care

Project Principal Investigator: Leah Zallman, PhD, Junior Scientist (ESI), HPHC (HDS-CDTR Affiliate Faculty)

Project Summary:

Physical activity, nutrition, and weight management behaviors in primary care is challenging. Some complex multicomponent interventions designed to improve physical activity have incorporated community program guides. In these research settings, incorporating community program guides resulted in enhanced provider counseling about exercise, referrals to community programs, and increased patient physical activity levels. Also, providers reported positive attitudes about referring patients to community programs for physical activity. Thus far, most health program guides have displayed community resource information as lists of programs. Given the widespread accessibility of the Internet, web-based health program guides would offer additional advantages, such as the ability to search for keywords (eg, "basketball"), filter by feature (eg, ages served), and display programs on a map to rapidly identify programs in close proximity to key points of interest (eg, home, school, or workplace). The typical audiences for interactive mapping to date have been public health planners, policy makers, and health delivery systems rather than patients or communities.

Using a collaborative approach, we previously developed an interactive web-based mapped community program guide for a safety net institution. Interviews with providers and patients indicated that the program guide would be most useful if it was first introduced to a patient by a health provider during a clinic encounter. Patients felt that this process would highlight the importance of physical activity, nutrition, and weight management to their health. Clinicians felt that integration into the clinical encounter would (1) allow them to take into account patients' physical limitations, (2) support their counseling by incorporating advice about local programs, and (3) link the program guide to patient engagement efforts such as goal setting and disease tracking. One challenge in incorporating this guide into a clinical setting is identifying patients who are engaged enough in their care such that a brief introduction to the guide would catalyze behavior change. While some patients are engaged enough in their care such that a brief intervention and connection to community referrals might be effective, others may require more intensive intervention.



We propose to build upon our prior work by piloting integration of the interactive community program guide into clinical practice at Cambridge Health Alliance, a safety net integrated health system, and examining the effectiveness of the intervention on self-reported physical activity, nutrition and weight management behaviors. A secondary aim is to examine the relationship between patient activation and effectiveness of this brief intervention.