Project Evaluation Model & Initial Assessment of Data Collection Gaps (2021)

This overview describes the data collection plans for measuring health outcomes and costs connected to food-based interventions funded in three rural FQHC pilot projects through the HHS-HRSA Rural Healthy Hometown Initiative. The pilot locations each have different variations on food intervention types, with separate implementation measures outlined in their work plans. This data collection document describes key elements of a common data collection framework across project types that will allow us to evaluate the overall integration of food into health care. As the document outlines, we do not expect every element to be in place at the end of four years, the goal is to establish key starting elements that can inform next steps.

We find that our health care practices regularly engage in activities around general food access, integrating food as part of population health goals, and food integration as part of individuals' health care / meeting individual health goals (including short term health outcomes such as reducing A1c levels through diet). The model described here is focused on setting up basic data collection infrastructure at the health care practice level that can reflect this continuum. Some information will come from external sources, for example ACO evaluation of changes to actuarial values across patient risk pools, Vermont Department of Health scorecards monitoring population health goals, or food distribution and access details from community partners. This overview does not address these complementary data sources, which are covered elsewhere in our program. Similarly, the co-occurrence of health-related social needs, such as transportation barriers to food access, is covered elsewhere in our program and not addressed here.

The grant covers four years of work, with the first year focused on planning and establishing systems. The overall goal is to reduce risk of cardiovascular disease in rural communities. This grant is part of the Federal Office of Rural Health Policy Outreach Program. A component of this grant program is sharing models across health care practices, which is reflected in our design of a data collection system that can be applied at any FQHC and that allows us to compare results across practices and across food program types.

Patient Cohorts:

The patient cohorts will be defined as follows:

- Patients **eligible** for food-intervention, determined by positive food insecurity screen (HVS), risk of cardiovascular disease, and interaction with FQHC during time the program is offered (this is not a historical review of all patients who *might* have participated if given a chance - we only want to record as "eligible" patients who had the opportunity to participate. This also will help avoid data being skewed by phased roll out of food insecurity screening).
    - Note: Because participating FQHCs do not necessarily combine food insecurity screening workflows with PCP visits or clinical engagement, we will separately track patient primary / preventive care engagement.
- Patients **enrolled** in food-intervention - patients accepted the offer of the food service.
- Patients who have **participated** in food intervention - the length of the programs is variable across FQHCs and across programs. We will both enter start / completion dates, to allow us to

see the length of individual patients' participation, and translate to a binary yes / no completion variable to normalize across patient groups.

Health Outcomes:

The primary outcomes focus for our food intervention pilots at rural FQHCs is reducing CVD risk and subsequent poor health outcomes in rural areas. A secondary set of outcomes is long term health improvements for participating patients across all diet-related conditions and improved population health through better management of SDOH in our communities. These secondary impacts are one of the advantages of integrating food- and diet-based interventions alongside medication-focused treatments – they are investments in both immediate treatment and sustained wellbeing. Operationalizing programs that achieve both short-term and long-term health quality improvements can be challenging, and our evaluation model should help guide decisions around how to focus these efforts.

Our primary analysis of cardiovascular disease risk will be comparing trends across patient cohorts for the following indicators, drawn from the American College of Cardiology ASCVD Risk Estimator tool:

- Total Cholesterol
    - LDL Cholesterol
- Blood Pressure
    - Systolic BP
- HbA1C
- BMI
- Statin prescription (not a direct target of intervention)
- Aspirin prescription (not a direct target of intervention)
- Tobacco use / tobacco cessation (not a direct target of intervention)
- Metformin prescription - new (not a direct target of intervention)

Participation in clinical nutrition services - in addition to tracking educational activities offered directly through our group-funded programs, we will track patient cohort participation in the following:

- MNT services - Year 2 goal of establishing closed loop referrals to RDs
- Completion of diabetes and/or pre-diabetes self-management program
- Completion of hypertension self-management program (if still offered by the state)
- Participation in Medicare Chronic Condition Management program

We will review pre- and post-measures for the following (PIMS-required measures):

- HP2030 Physician Office Visits Including Diet/Nutrition Counseling/Education for Patients with Obesity (NWS-5)
- Controlling High Blood Pressure (NQF #0018): Percentage of adult patients, 18 - 85 years of age, who had a diagnosis of hypertension whose blood pressure was adequately controlled during the budget period.
- Comprehensive Diabetes Care: Hemoglobin A1c (HbA1c) Poor Control (>9.0 percent) (NQF #0059): Percentage of patients 18 - 75 years of age with diabetes (type 1 and type 2) whose most recent HbA1c level during the measurement year was greater than 9.0 percent (poor control) or was missing a result, or if an HbA1c test was not done during the measurement year.

Cost Savings:

We have identified several potential mechanisms for food access and health care integration to achieve cost savings along with improved health quality. Note that the savings in this context reflect primarily reduction in total cost of care, not immediate operational savings for a health care practice:

- Early intervention in CVD risk using dietary change can eliminate the need for more expensive treatment at a more advanced stage of a disease.
- Effective use of diet change alongside medication to manage chronic conditions can minimize the need for (and cost of) pharmaceuticals. In some conditions where patients do not respond well to medication alone, such as diabetic nephropathy, diet change can become a necessary part of any successful treatment.
- Some food program types facilitate patients' transition in care setting (e.g. hospital to home) or help older patients remain at home, leading to reduction in costs for inpatient treatment. The majority of Medicare Advantage plans nationally now recognize this type of food benefit with home delivered meals. Given Vermont's significantly older demographic profile this is an area of interest for cost management.
- Building a targeted food intervention pilot for CVD can also improve the overall systems of addressing food insecurity at a health care practice, and studies have shown that strong screening and referral systems for food insecurity as a social determinant of health (SDOH) leads to overall cost savings across a patient population. We anticipate this impact to appear primarily in reduced ED utilization, based on our literature review.
- Using a diet-based intervention for CVD has benefits for a patient's overall health, as it addresses not only the targeted CVD risk indicators but also risk for *all* diet-related chronic conditions. Additionally, diet-based treatment can have an impact across a household if meals and eating patterns are shared, so the positive health changes reach beyond the original patient.
- Lifestyle-based interventions can support an improved sense of wellbeing for patients as they gain skills and connect with food resources that allow them to be proactive in managing their own health. This engagement may be demonstrated through more frequent participation in preventive and primary care services. We will also specifically track participation in services connected to CVD risk that are outside the food intervention, such as tobacco cessation.
- Diet-based interventions also foster positive social and community connections, for example through local foods, shared meals, cooking classes, and events. Reducing social isolation has been shown to improve health outcomes, especially in older patient groups.

For immediate case cost savings review at the practice level, we will follow the 'SDOH Business Case' template, using data available from the patient cohort segmentation and internal workflow reviews.

Structuring Data Collection to Support Program Evaluation:

The Bi-State Primary Care Association data team has access to EHR data from all Vermont FQHCs through a Qualified Service Organization Agreement (similar to a BAA but covers 42 CFR Part 2 data as well). We aggregate the data into the Qlik system for analysis. Through preliminary survey work and analysis of data available via the EHR, we have identified the following next steps in data analysis:

<u>Food Insecurity Screening</u>

- 2 of 3 participating FQHCs have structured HVS screening in place across clinics, anticipated implementation at all sites by March 1, 2022.
    - Separately the Food Access and Health Care consortium has identified that food insecurity screening is increasingly prevalent in Vermont health care practices, but implementation remains uneven and 50% of practices responding to a recent survey indicated they do *not* include structured entry into the EHR.
- Food insecurity screening and referral to services is not necessarily connected to medical workflows - we will consider options for tracking reliability, including whether screening is connected to an office visit as well as whether we can know whether primary care provider has food insecurity information available to review at time of patient consultation.
    - We will separately review, across patient cohorts, the frequency of accessing primary and preventive care services.
    - We are not currently considering tracking PCP utilization of food insecurity information when it is available to them, that is a consideration for future work.
- Separate project is considering following up the HVS screen with an extended version of USDA Household Food Security Survey module (food security diagnostic tool), not reflected here.

<u>Patient Cohorts</u>

- See previous section for patient eligibility, enrollment, participation and corresponding dates of patient engagement. These are new categories to track and will require different training / workflow management across practices. It will be a Year One implementation focus.
- FQHCs are beginning data collection with internal programs, in future years we will need to identify how to close the loop on participation with external partners.
    - We are interested in identifying platforms that combine closing this loop with payment processing options that facilitate patient choice and can additionally support our goal of reducing transportation barriers by offering the flexibility to match patients' normal daily routines. Implementing this infrastructure will be an important component of future sustainability.
- In Year 2, we will use patient cohort ratios to identify potential gaps in the processes for screening, referral, enrollment, and participation based on patient attrition rates and any commonalities between patient groups that do / do not participate.
    - We are not currently considering tracking patients who wanted to receive a food related service but for whom there were no appropriate services available. An example of this type of gap may be prepared meals or medically tailored meals. We will collect initial information on this component via conversation with patients and consider adding to evaluation in future years.

<u>Health Outcomes Data</u>

- See above regarding health indicators to be collected in our trends dashboard. Preliminary review of EHR data suggests that there will be no reliable frequency with which these indicators are collected across the patient cohort. Factors that affect frequency may include underlying diagnosis, treatment regimen other than food-based intervention, and payers' policies regarding coverage of certain tests (for example frequency of cholesterol readings). We therefore do not anticipate the ability to derive a meaningful trend, but instead have a goal of establishing systems and identifying what would need to change in biometric data collection to derive reliable trend lines in the future.

Utilization of Services

- We do not have an option for connecting our data to SNAP (or other federal nutrition program) data. Low confidence in income data (when collected), SNAP eligibility in Vermont does not correlate to Medicaid eligibility, FQHCs do not regularly collect SNAP enrollment or application information from patients.
    - One of the participating FQHCs will be piloting tracking SNAP referral and enrollment as part of their food insecurity screening & services process.
    - Bi-State is working with several organizations to pilot a SNAP outreach & referral project at a health care provider that is not one of the three participants in this program, with the goal of bringing an successful model developed statewide in future years
- Best practice models for achieving change in clinical indicators of diet-related health condition or pre-condition suggest that patient engagement in nutrition counseling / education / structured self-management programs is a significant factor. Our program logic model for impact includes facilitating greater participation in these programs by removing food access barriers. However, the structure, availability, and utilization of these services is extremely variable by region. Additionally, these services occur primarily outside of the FQHC practices.
    - In Year One we will perform a system capacity review of access to nutrition services. (This overview is now available).
    - In Year Two we will review options for creating a closed loop system to communicate back to PCPs, and reflect consistently in the EHR, when a patient has completed a referral to a Registered Dietitian and/or completed a self-management program.
    - General educational classes are tracked as part of program implementation and not included in this overview.
- Best practice models for achieving change in clinical indicators and cost savings include medication management alongside dietary interventions for many chronic conditions. We also know from Vermont and national studies that there is a high correlation between food insecurity and intentional underdosing of medication due to financial constraints, so food interventions may have additional positive impact in this regard.
    - See previous section for medications tracked as part of dashboard. We do not currently know the accuracy of our medications lists, this will be a quality control consideration for future years.
    - We are looking into the possibility of reviewing relationship between A1c levels in the pre-diabetes range, provider diagnosis of pre-diabetes, and new prescriptions for diabetes management pharmaceuticals.
- Many of our predicted cost impacts would appear in reduced hospital and/or urgent care utilization and reducing need for more expensive later-stage treatments. We do not have access to hospital claims data for our patients and have had little luck in reliably connecting data related to events such as ED visits or discharge from inpatient stays.
    - In Year Two we will review availability of hospital system data. In Year One we have requested a legal review from the ACO on their ability to share data by patient groups, preliminary suggestion is that they will not be able to make this available, but we will try a second review when the primary care level data collection has begun.

Key Points on Data Collection Timeline:

Year One (May 1, 2021 - April 30, 2022) - Planning Year

- Primary Focus Areas:
    - Structured / Consistent Food Insecurity Screening with Validated Tool
    - Establishing Systems for Tracking Patient Cohorts
    - Building Health Outcomes / CVD Risk Dashboard
- Work with FQHC data collection teams to make sure processes work smoothly
- Overview of availability of nutrition services
- First PIMS Reporting - system set up for all future years

Year Two (May 1, 2022 - April 30, 2023)

- Review patient cohort ratios for program processes / effective referrals
- Develop structure for tracking participation in nutrition services
- Identify sustainable systems for referral to, and food payments within, external partnerships - including retail grocery stores and local food options
- Re-review ED utilization data availability, with data collection systems operating and a known patient cohort.

Year Three (May 1, 2023 - April 30, 2024)

- Full implementation of closed loop with external partners for food access services
- Additional Structured Data Collection to Consider:
    - Patients who request food service but for whom there is no appropriate service available
    - PCP review of food insecurity information as part of patient counseling
    - SNAP Referral and Enrollment (complementary pilot project from 2022 will be in expansion phase at this time)

Year Four (May 1, 2024 - April 30, 2025)

- Final Reporting
- Recommendations for Next Steps Around:
    - Frequency of collecting biometric data
    - Tracking hybrid approaches to managing diet-related conditions that combine dietary changes and medication management
    - Information sharing across health practice types, in particular as relates to cost of care
    - Food / dietary quality diagnostics - connected to RD referral and treatment closed loop (year 2), measure of progress on dietary goals
    - Full food insecurity screening - USDA's HFSS 6-question module. Would occur in either care coordinator / CHT or CBO workflows as follow up diagnostic to HVS screen.