

# [Susan C. Gilchrist, MD, MS, Project Leader] ISP Application

03/12/2025

<b>Project Lead/Key Contact</b>
<ul style="list-style-type: none"><li>• Susan C. Gilchrist, MD, MS, Project Leader</li><li>• Susan_gilchrist@med.unc.edu</li><li>• 919-843-1297</li></ul>
<b>Why are you interested in the Improvement Scholars Program?</b>
<p>Key stakeholders in the UNC Division of Cardiology and Endocrinology are working together to initiate a new outpatient interdisciplinary clinic to improve outcomes in patients diagnosed with cardiovascular-kidney-metabolic (CKM) syndrome. My role as the newly appointed director of cardiovascular prevention within the Division of Cardiology is to help lead this effort. While I am formally trained as an epidemiologist and have experience building clinical programs, I would greatly benefit from formal oversight in the design and execution of this project from experienced clinical improvement leaders.</p>
<b>Problem Statement: What is the problem you are looking to solve?</b>
<p>Over 70% of patients with type 2 diabetes and existing cardiovascular disease (CVD) do not achieve intensive risk factor modification targets (1). This leads to a high risk of recurrent cardiovascular events and premature death. Importantly, incremental improvements in attaining treatment targets can make a difference. In a study by Pagidipati et al. optimizing one CVD risk factor and/or improving compliance with guideline-based CVD medications led to a ~ 25% reduction in CVD events over 3 years (1). Given the accelerated risk trajectory in this population, it is imperative to develop solutions to promote cardiovascular health and to intervene on the comorbidities and risk factors that drive CVD risk. Interdisciplinary programs and clinics developed by Kaiser Permanente and other organizations have shown significant gains in CVD risk factor control and outcomes among patients with CVD and diabetes (2-5). Programmatic success by these groups in parallel with the development of novel diabetes medications (e.g., GLP-IRAs and SGLT2 inhibitors) that improve both cardiovascular and kidney outcomes have accelerated the need to develop care teams which have cross-functional expertise. Guidance from a 2023 AHA Scientific Statement has been timely with an expert panel providing a formal definition and CKM staging system [defined as CKM stage 0-4] accounting for the complex interplay between cardiovascular, kidney, and metabolic factors inherent in the pathophysiology of type 2 diabetes and multi-organ dysfunction (6). The expert panel also issued a treatment framework for CVD risk reduction based on CKM stage and encouraged a patient-centered interdisciplinary approach to clinical care (7).</p> <p>Our goal is to address the excess risk and disease complexity of the CKM population by forming an interdisciplinary clinic to help patients achieve intensive risk factor modification targets. Our focus will start with stage 4 CKM patients discharged from UNC hospital who, by definition, have diabetes and preexisting CVD and are at highest risk for secondary CVD events. We hypothesize that a patient-centered approach to care that includes drug initiation and management with pharmacist oversight, a subspecialist team in the clinic addressing multi-organ dysfunction, and behavioral health experts to initiate lifestyle changes will optimize CVD risk factors and medication adherence in CKM patients. This approach is geared to lower the barrier to care for patients by decreasing the travel burden and number of visits, providing access to ancillary care that is often elusive, and advocating for patient access to novel therapeutics – goals which often are not reachable if attempted in silo.</p>
<b>Importance Statement: Why is this project important?</b>
<p>This initiative will address a priority area by the UNC Institute for Healthcare Quality Improvement to improve chronic illness prevention and treatment in outpatient care. This type of initiative has been successfully implemented within the Kaiser Permanente system as well as other organizations as stated above (2-5). These objectives are in line with the set of Healthcare Effectiveness Data and Information Set (HEDIS) measures which the National Committee for Quality Assurance (NCQA) publishes to</p>

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assess the quality of care and services by health plans and which directly impacts care for patients with CKM.

A few of the potential challenges to the project include the lack of cross education in the cardiology clinic regarding endocrine drugs and glucose monitoring, new clinic scheduling templates which may be unfamiliar to patients and provider teams, and operationalization of a learning health system leveraging the Carolina Data Warehouse for Health to monitor and track outcomes (8). Of note, interdisciplinary clinics have been implemented across subspecialty disciplines within UNC. As one example, a multi-disciplinary amyloid clinic including an oncologist, cardiologist, and pharmacist has been formed to address the complex organ system dysfunction of patients with amyloidosis and the appropriateness of novel drugs to treat transthyretin amyloid cardiomyopathy.

## References

1. Pagidipati, Neha J., et al. "Coordinated care to optimize cardiovascular preventive therapies in type 2 diabetes: a randomized clinical trial." *JAMA* 329.15 (2023): 1261-1270.
2. Joyce, Jodi S., et al. "The Kaiser Permanente Northwest Cardiovascular Risk Factor Management Program: A Model for All." *The Permanente Journal* 9.2 (2005): 19.
3. Thomas, Merrill, et al. "Cardiometabolic center of excellence: a novel care delivery model for secondary prevention of cardiovascular disease in type 2 diabetes." *Circulation: Cardiovascular Quality and Outcomes* 14.10 (2021): e007682.
4. KOSIBOROD, MIKHAIL N., et al. "1077-P: A Multicenter Initiative to Improve Care in Cardiometabolic Disease—Initial Report From Cardiometabolic Center Alliance (CMCA)." *Diabetes* 72.Supplement\_1 (2023)
5. Habte-Asres, Hellena Hailu, et al. "Organisational initiatives to improve care in the prevention and management of cardiometabolic conditions: A scoping review." *Nutrition, Metabolism and Cardiovascular Diseases* (2024).
6. Ndumele, Chiadi E., et al. "A synopsis of the evidence for the science and clinical management of cardiovascular-kidney-metabolic (CKM) syndrome: a scientific statement from the American Heart Association." *Circulation* 148.20 (2023): 1636-1664.
7. Ndumele, Chiadi E., et al. "Cardiovascular-kidney-metabolic health: a presidential advisory from the American Heart Association." *Circulation* 148.20 (2023): 1606-1635.
8. Foraker, Randi E., et al. "Achieving optimal population cardiovascular health requires an interdisciplinary team and a learning healthcare system: a scientific statement from the American Heart Association." *Circulation* 143.2 (2021): e9-e18.

## Project Scope

In Scope:

- How many patients are in the population? Based on the Carolina Data Warehouse, there are over 15,000 patients a year within the UNC Health System that have a diagnosis of acute heart failure or acute myocardial infarction AND had type 2 diabetes. This is a prevalent condition with opportunity for great impact.
- For this proposal, we plan to limit our scope to patients discharged from UNC Medical Center cardiology service with an admitting diagnosis of acute heart failure or acute myocardial infarction who are obese ( $\geq 30$  kg/m<sup>2</sup>) and have HbA1c  $\geq 6.5\%$  and/or a diagnosis of type 2 diabetes.
- A daily EPIC list has already been developed to identify patients on the cardiology in-patient service who meet the criteria for CKM clinic (2-3 patients daily for MI alone). Patients will be identified and set-up for outpatient CKM clinic by our cardiology discharge team (in-service on this process complete). Since our cardiology team will be placing the referrals to CKM clinic, we will be able to control referral numbers and growth. As a second level of oversight, the referral will be reviewed by Dr. Gilchrist for

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appropriateness prior to scheduling the patient. This referral process will start in April of 2025, prior to the launch of the multidisciplinary clinic in July.

Out of Scope:

- Patients at UNC Medical Center not seen by the cardiology service
- Patients with HF or ACS who do not meet entry criteria for CKM clinic

**Measures: (Process, Balancing, Structure)**

*\*Exploratory*

Measure Name	Measure Type	Measure Calculation (% or mean/SD)	Measure Exclusion	Data Source	Baseline	Goal	Collection Frequency
Medication initiation and adherence	Outcome	Tracked medications: ACE inhibitor, Beta-blocker, SGLT inhibitor, GLP1 agonist, Aspirin  (N patient med eligible/ N, med initiated); (N, med initiated / (N, med at 90 days)	Not eligible for medication	EPIC	29% [all meds]  (REF 1)	75%	30 days
Referral success	Process	(N, referrals)/ (N, population meeting inclusion criteria)	Referrals do not fit inclusion criteria	EPIC	--	90%	30 days
CKM clinic uptake success	Process	(N, referrals)/ (N, arrived visit)	Self-pay individuals, out of network, distance	EPIC	30%	60%	30 days
PCP transition	Process	(N, arrived visit) / (N, PCP return visit arrived at 90 days)	PCP out of network	EPIC	--	75%	30 days
Number of CKM visits	Balancing	(Mean, SD) visits per patient to CKM clinic	--	EPIC	--	3-4	30 days
Re-hospitalization rate*	Other	90-day re-hospitalization rate (stratified by MI/HF diagnosis)	--	EPIC	MI (30%) HF (20-30%)	10% reduction	30 days

**Root Cause Analysis**

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<ul style="list-style-type: none"> <li>Guideline directed medical therapy is not initiated or titrated in the hospital setting due to concerns over renal function, lab monitoring, and medication co-pays.</li> <li>Siloed clinical expertise results in barrier to initiate guideline-direct medical therapy across cardiovascular, metabolic, and kidney domains which puts the burden on patients to attend multiple clinic visits in different hospital settings.</li> </ul>	
<b>Ideas for Improvement</b>	
<ul style="list-style-type: none"> <li>Create multi-disciplinary care clinic for CKM patients to initiate guideline directed medical therapy</li> <li>Reduce patient visit burden and travel costs by providing expert providers and ancillary services (exercise, nutrition) at one integrated CKM clinic visit</li> <li>Provide pharmacy oversight to manage medication titration, side-effects, and adherence</li> </ul>	
<b>Risks and Opportunities</b>	
<ul style="list-style-type: none"> <li>Medication adherence to GDMT and uptake of healthy lifestyle behaviors are known to improve outcomes in this high-risk CKM population. This clinic is geared to simplify access to medications and clinical expertise for CKM patients.</li> <li>An interdisciplinary clinic within the cardiology space requires proper patient education (expectations for visit), well-trained staff to handle mix of triage concerns (both endocrine, renal, and cardiology), and new scheduling processes that accounts for multiple provider visits. We are currently addressing these issues with our scheduling team and during monthly CKM meetings.</li> <li>The CKM clinic is meant to be a consultative clinic with the goal to transition patients back to their PCPs for continued care after medication titration. We have identified a PCP CKM champion who will help design PCP transition and communication processes to other PCPs to continue a collaborative treatment plan for the high-risk CKM patients. The PCP champion will also help with a needs assessment and plan for patients without a PCP, which could include establishing care at the UNC Internal Medicine Clinic at Eastowne for ongoing longitudinal care.</li> </ul>	
<b>Stakeholders and Project Team Members</b>	
<ul style="list-style-type: none"> <li>Who are the key stakeholders in your system and processes?</li> <li>Who are the key project team leaders to design and implement change?</li> </ul>	
<b>Name</b>	<b>Role</b>
Rick Stouffer, MD (Chief of Cardiology) and Janice Hwang, MD (Chief of Endocrinology)	<i>Sponsor(s)</i>
Susan C. Gilchrist, MD	<i>Team Lead</i>
Susan Gilchrist, MD and Thelsa Weickert, MD (cardiology)	<i>Subject Matter Experts</i>
Andrea Coviello, MD (endocrinology)	
Evan Zeitler, MD (nephrology)	
Anita Yang, PharmD (pharmacy)	
Christine Gladman, MD	<i>PCP CKM expert and Champion</i>
Adam Moskowitz, MD	<i>Cardiologist, Eastown Clinic Medical Director</i>
Adam Super	<i>Patient Services Manager III, Eastowne Cardiology Clinic</i>
Donna Lawson and Michelle Solano	<i>Scheduling: OP Access Ctr Ops Supervisor and Clinic Manager</i>
none	<i>Data Lead</i>
<b>Impact on the Quintuple Aim</b>	
<ul style="list-style-type: none"> <li>Improved health – increased GDMT adherence to improve CV outcomes in CKM population</li> </ul>	

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- Enhanced patient experience – bring UNC expertise to the patient in unified clinic, reduce travel burden and number of visits
- Enhanced clinician and staff experience – team approach to patient care and transparent outcome/processes data to demonstrate care is improving outcomes
- Health equity - improve access to multidisciplinary care based on risk, not traditional access points which favor those with higher education and income
- Reduced costs – for patient (improve access to reduced drug prices/programs) and for health system (i.e., reduction in hospitalizations)

### Sustainment Plan

- Each of the key subject matter experts who will part of the CKM initiative are re-directing their time to the CKM clinic from siloed clinic time. There is no additional FTEs required for physicians, pharmacists, or nutrition staff. The nursing staff, schedulers, and space are available Monday afternoon for this clinic – as such, space utilization and productivity should be comparable to usual cardiology practice at Eastowne. There is a non-revenue generating FTE needed for lifestyle and exercise discussions. To overcome this barrier, we are joining forces with the UNC graduate school to have graduate-level exercise physiologists in the clinic to provide exercise prescriptions to patients and provide community-based resources with oversight from Dr. Gilchrist (expert in this field). There are some testing costs that our cardiology clinic will need to review, such as point of care testing for HbA1c, which is done in the endocrine clinic but is not performed in cardiology (a certain volume is required to generate income). Further, the cardiology division will be requesting a pharm tech to deal with the increased number of prior authorizations that will likely result from the CKM clinic. This resource will need to be approved by UNC Health and will be shared across multiple cardiology clinics, not CKM.

The expectation is the CKM Clinic will start in July 2025. Prior to July, referrals from the cardiology team will be placed to Dr. Gilchrist's Monday afternoon clinic to test out the appropriateness and flow of referrals to CKM Clinic. Currently, our scheduling team is creating a template to allow for multiple providers to see CKM patients in the Monday afternoon clinic starting in July. The support from IQHI will be directed at improving our processes and setting up the appropriate outcome measures, not setting up the clinic. The clinic operations development is already taking place.

It is also important to note the PCP transition is a key component of sustainability. The CKM clinic is a consultation service. Our goals and metrics are geared to improve uptake of guideline-directed medical therapy and transition patients back to their PCP. Otherwise, the CKM clinic will not be able to scale and will only serve a limited number of individuals. To address the limited follow-up visits, a majority will be seen by our pharmacy lead to titrate medical therapies while specialty physicians will focus on new consultations in the clinic. We will work with our PCP champion, Christine Gladman, and UNC primary care network to optimize the overall CKM clinic to PCP transition process. This will include a shared, collaborative treatment plan that includes clearly defined care responsibilities of the PCP and specialists at the CKM clinic.

- The outcomes and processes developed in EPIC, as part of this initiative, should be set up for continued monitoring and metric oversight. It will be important to set up a CKM research database that is linked to EPIC / Carolina Data Warehouse to reduce the burden of manual data transfer (resource intensive and risk of data errors) for future analysis and publication. Having a data analyst is required, especially in the beginning of this project. It is likely that the maintenance of the database and analytics would require future funding, though the goal would be to embed funded research into the CKM clinic to support a data analyst long-term.

### Carolina Quality Tools

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TeamSTEPPS training would be extremely helpful as we work across multiple disciplines and expertise to enhance mutual support, communication, situational monitoring, and leadership. A visual management board will be essential to track outcome and process measures. A safety huddle (weekly) would also be very important to ensure that we are tracking and resolving issues regarding patient care/safety for the CKM clinic.

### References

- Sponsor letter from Drs. Stouffer (cardiology) and Hwang (endocrinology) [attached]

March 22, 2025

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**Re: IHQI Scholars Program Applicant, Susan Gilchrist, MD, MS**

Dear Dr. DeWalt:

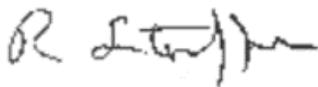
This letter serves to express our support and enthusiasm for Dr. Gilchrist's application into the UNC Institute for Healthcare Quality Improvement Scholars Program. Dr. Gilchrist was recently recruited into the Cardiology Division to lead our efforts in Cardiovascular Prevention. She obtained her specialty training in Cardiology and a master's degree in epidemiology and clinical research at Wake Forest University School of Medicine. Prior to joining UNC, Dr. Gilchrist was Professor of Cardiology and Cancer Prevention at The University of Texas MD Anderson Cancer Center and served as a senior medical expert for global cardiovascular clinical trials at Labcorp Drug Development.

Dr. Gilchrist has the experience to lead our prevention program development. We see tremendous opportunity in having Dr. Gilchrist take part in the IHQI Scholars Program to tie the operational details of the clinic to a formal quality improvement initiative.

The cardio-kidney-metabolic (CKM) multidisciplinary clinic is a shared vision across multiple stakeholders within the Department of Internal Medicine. We are excited to see the launch of the CKM clinic in July 2025. It will be located at the UNC Eastowne location within the cardiology space with representation from cardiology, endocrinology, and pharmacy and appropriate staffing to address the needs of this complex population. We see this clinic as a consultative practice to initiate guideline directed medical therapy for a high-risk CKM population to reduce rehospitalization rates and improve patient outcomes. We are eager to have Dr. Gilchrist team up with IHQI experts to guide the development of processes and metrics needed to improve quality outcomes for this population.

In summary, Dr. Gilchrist has our full support for the proposed IHQI project. This will be an important initiative to demonstrate excellence in addressing the complexities of care in patients who have multiple co-morbid conditions leading to premature mortality. Please reach out with further questions.

Best Regards,



Rick Stouffer MD  
Chief of Cardiology



Janice Hwang MD, MHS  
Chief of Endocrinology and Metabolism