IMPROVED CLINICAL OUTCOMES DUE TO GFR BASED CLINICAL INTERVENTIONS FOR THE PREVENTION AND TREATMENT OF RENAL DISEASE AS IT RELATES TO THE VETERAN POPULATION MANAGED BY A PATIENT ALIGNED CARE TEAM

A Scholarly Project

Submitted to the

Faculty of Liberty University

In partial fulfilment of

The requirements for the degree

Of Doctor of Nursing Practice

By

Sidneca E. Hazward

Liberty University

Lynchburg, VA

July 7, 2024

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Scholarly Project Chair Approval:

Dr. Kenneth Thompson Professor of Pharmacology Date:

ABSTRACT

The purpose of this study was to understand if the use of eGFR (eGFR CKD-EPI 2021) in the absence of race modification influenced early detection of renal disease for Veterans managed by Patient-Aligned Care Teams. A retrospective cohort study design was used, analyzing patient data from the Department of Veterans Affairs Medical Center (VAMC). The study included veterans with available serum creatinine, albumin, eGFR, eGFR CKD-EPI 2021, etc. measurements and demographic data. The study employed systematic data review of electronic medical records from 2019 to 2024 and utilized electronic data collection through computerized patient record system (CPRS) data collection system. No human subjects participated in this study. This project was approved by the Liberty University Research Ethics Review Board. The study found that the use of the CKD-EPI 2021 equation without race modifiers resulted in a reclassification of CKD stages for a significant proportion of veterans, particularly those previously classified as having mild or moderate CKD. The reclassification generally indicated a higher prevalence of CKD when race was not considered, suggesting that the traditional method may underestimate the severity of kidney disease in certain populations. To improve standardized chronic renal disease prevention, detection, and management of renal disease, institutional at-risk for renal disease risk indicators have to also be standardized. The elimination of professional bias in the decision-making process.

Keywords: eGFR, race modifier, renal disease, disparity, GFR, risk for renal disease.

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List of Abbreviations

GFR	Glomerulus Filtration rate
eGFR	Estimated Glomerular Filtration Rate
CPRS	Computerized Patient Record System
EMR	Electronic Medical Record
VAMC	Veterans Affairs Medical Center
CKD	Chronic Kidney Disease
DM	Diabetes Mellitus
HTN	Hypertension

Introduction

The overall level of patient satisfaction for the Department of Veteran Affairs Medical Center (DVAMC) facilities is 85%, below which Veteran satisfaction and patient outcomes must not fall to support the continued implementation of the new GFR initiative. This level of quality is based on metrices such as patient symptoms improvement outcome, patient functional improvement outcome, provider use of first-line standard of care treatments process metrics, and provider use of standard screenings process (Nurses Organizaion of Veteran Affairs, 2018). The Department of Veteran Affairs would consider the current status of overall patient satisfaction among all VA medical centers of 85% on average a considerable achievement. However, in the presence of institutional clinical practices that foster bias outcomes in diagnosing, preventing, and treating at risk Veterans for renal disease suggests potential improvement in overall patient satisfaction in the absence of ethic modifiers. What is valuable to eliminate unintentional institutional bias is the realization of stakeholders within the department of veteran affairs that for sustained patient satisfaction, quality of care has to be a standard for all patients, below which no one falls (U.S. Department of Veteran Affairs, 2023). The stakeholders of the GFR initiative include, but are not limited to, the veterans, Secretary of Veteran Affairs and leadership, primary care administration, VA Health Administration Office of Research, primary care providers, DVA laboratory, emergency care department, interdisciplinary specialties and clinical education department, clinical nursing staff, clinical medical staff assistance, medical technology and distribution, and the new GFR initiative lead.

Research is culture-sensitive and based on values and beliefs of a culture. The Department of Veteran Affairs is such a culture. Without evolution of thought and education, questioning the reasoning for clinical practice, and perpetual clinical norms concerning GFR

modifiers, may cause unintentional patient harm, preventing timely and appropriate clinical interventions. As clinical professionals entrusted to provide patient centered carefree of personal bias, removing professional and/or institutional bias through the performance of routine self-assessments, and therefore institutional assessment concerning depth of understanding of up-to-date clinical practice would promote self-awareness and decrease stagnation in personal clinical practice and institutional practice concerning the management of renal disease within the Department of Veteran Affairs.

1.1 Background

There are comorbidities that can be systematically prevented through routine primary care clinical visit encounters. Screening for co-morbidities such as renal disease is within the scope of practice of the primary care provider. Primary care providers are supported by the Affordable Care Act (ACA), which shifted US health policy to emphasize disease prevention by mandating full coverage of approved preventive services (Aarti Rao, 2019). Preventive measures include the use of laboratory services to conduct screening, such as the glomerular filtration rate (GFR). Most commonly, the estimated GFR (eGFR) equation was used in clinical practice, which calculated renal disease risk based on serum creatinine level, age, sex, and race. The eGFR equation estimating glomerular filtration rate included an additional criterion which was the patient's race or ethnic modifier (Andrew S. Levey, 2021).

1.2. Problem statement

The problem began with the use of ethnic modifiers in primary care. The eGFR equation was a commonly used institutional clinical tool (Andrew S. Levey, 2021) in primary care practice to guide clinical interventions in managing renal disease. An eGFR result of < 60 was an indication to initiate preventive measures such as clinical monitoring, nephrology or urology

consultation based on institutional guidelines, and patient specific education that focused on disease awareness to prevent the progression of the disease (Adams, 2018). The eGFR results were reported under two patient categories: non-African and African. The clinical indicator for further clinical intervention based on the eGFR differed for the non-African population from that of the African patient population. An eGFR result of <60 for the non-African patient indicated a decrease in renal function and warranted further clinical investigation and/or tests. Therefore, if the patient was non-African, further workup and preventive measures were indicated. However, if the patient was African, an eGFR result of <60 did not indicate renal insufficiency, and no further clinical investigation or diagnostic tests were warranted for health care institutions utilizing ethnic modifiers such as race to guided clinical decisions in primary care. The use of ethnic modifiers to guide clinical decisions resulted in institutional lead health care disparity in the detection, prevention, and management of renal disease. This study is designed to understand this aspect of eGFR by critically evaluating sixteen research sources to validate the hypothesis and addresses whether the use of eGFR without race modification influences early detection of renal disease. The supportive strength of the research studies was evaluated with the purpose of providing validity for the research study hypothesis.

1.2 Purpose statement

The purpose of this project is to answer if the use of eGFR (eGFR CKD-EPI 2021) in the absence of race modification influenced early detection of renal disease for Veterans managed by Patient-Aligned Care Teams (PACT).

1.3 Clinical Question

PICO Question: How did non-European Veterans manage by a PACT with a

diagnosis of renal disease perceived their healthcare management the first two years of diagnosis?

Literature Review

2.1 Search strategy

The search for articles was made with the query accessing Liberty University's Jerry Farrell Database described as follows: ("disparity") AND ("African American") OR ("primary care") OR ("health care") AND ("renal disease"). The rationale for the use of Jerry Farewell Library Database was primarily due to student access and the accessibility to additional search engines including Ovid, CINAHL, ProQuest Nursing, Liberty University Jerry Farrell Library, Google Scholar, PubMed Central (PMC), and Medline.

The previously mentioned research search engines were used to conduct the search for supporting research studies from 2015 to 2024. The Jerry Farrell Library of Liberty University search was further narrowed by adding search filters for full text, peer reviewed, English, library source, research studies, medicine, and nursing. Using the Liberty University Jerry Farrell on-line library afforded immediate access to research data. The content type selected was journals, magazines, peer reviewed articles, and books. In order to organize the search results by relevance, search terms used were primary care provider, research & technology, disparity, life science, disparity and biomedicine, screening, acute renal disease, minorities, and prevalence of renal disease and prevention. Disciplines chosen were nursing, psychology, social welfare, social work, medicine, and public health.

2.2. Eligibility Criteria

The studies included in this review satisfied the following inclusion criteria: (1) correlation between renal disease and the use of GFR equation, (2) proposed consequences of delayed detection of renal disease in at-risk populations, (3) published between 2015 and 2024,

(4) in journals indexed in the previously mentioned scientific databases, (5) reflected on the history behind the development of Black race modifiers (BRM), and (6) proposed/presented solutions to decrease healthcare disparity in detecting and managing renal disease.

2.3. Critical Appraisal

The research study conducted by Lundy Braun, titled "*Racialized algorithms for kidney function: Erasing social experience*" and the research study conducted by Salmen Ahmed and others, titled "*Examining the potential impact of race multiplier utilization in estimated glomerular filtration rate calculation on African American Care Outcomes"* share commonality. The first reason these two studies were chosen is because the researchers focus on the estimated glomerular filtration rate calculation as an unintended healthcare practice that uses a race-based algorithm, instigating its users to perpetuate disparity in healthcare practice. The second reason was that both studies specifically highlight the disparity in systematically preventing end stage renal disease among African American populations when notably, African Americans have increased rates of end-stage renal disease compared with non-melanated patients despite having similarly low rates of chronic kidney disease (Salmon Ahmed, 2020).

The research study conducted by Lundy Braun and others, titled "*Racialized algorithms for kidney function: Erasing social experience*" was a review of biomedical literature prior to the 1990s (Lundy Braun, 2021). PubMed search engine was used in the process of narrowing down the choice of biomedical research articles used in the study. The biomedical research literature to be used in the L. Braun et al. research analysis was chosen by a close textual analysis of the biomedical research literature prior to the 1990s. L. Braun used a systematic literature review of comparison of eGFR between black and white research participants. According to L. Braun et al., eGFR corrections were applied only to African Americans up until the time of the research study.

Therefore, on January 16, 2016, the PubMed search terms used for literature inclusion were black and white research participants. Covidence platform was used to facilitate the systematic reviews of 982 abstracts and research titles that mentioned racial comparison of eGFR, decreasing the number of inclusive research studies down to 172. After abstract screening 172 research articles were finally selected for full text review. After full text review, forty-eight articles met the inclusion criteria. The inclusion criteria were original research articles written in English that compared baseline eGFR in healthy black (African American, "Black") and Caucasian, ("European American") (Lundy Braun, 2021) using text or tables to compare the eGFR. Of the 48 research articles, research articles that included participants with damaged kidneys due to CKD, acute kidney disease, diabetic, lupus nephritis, nephropathy hypertensive nephrosclerosis, kidney transplant, recent kidney donor, and dialysis patients were excluded (Lundy Braun, 2021).

L. Braun et al. used two reviewers to abstract data from the forty-eight imperial research articles. The data abstracted was the date of study; journal title; country and department of authors; country of study participants; type of article; objective of study; funding source, sample size, mean age of study participants; age range of participants; sex/gender of participants, race, ethnicity; and the inclusion of the definition of group in the methods section of the article (Lundy Braun, 2021). The data collected also included the study population; social economic class; differences of sex/gender or race included in the study; explanation for the difference in eGFR by race in the results or conclusion/discussion section of the studies. The explanations for different eGFR results between the African American and Caucasian participants (Lundy Braun, 2021) were correlated with the empirical research and entered word-for word in an Excel spreadsheet by two reviewers (Lundy Braun, 2021). L. Braun et al. included whether the researcher defined

the race of the subjects of their study or if the race or ethnicity of the participants was self-reported (Lundy Braun, 2021). In addition, L. Braun et al. required the method of race assignment to be included by the researchers in the method section of the forty-eight research studies reviewed. This decreased the number of research articles from 48 to 38 inclusive (Marcia Pencak Murphy, 2018) research studies used in the L. Braun et al. literature study.

Two reviewers compared the differences in eGFR results among African American and Caucasian participants and the word-for-word explanations (Lundy Braun, 2021). These explanations included physiology, genetics, muscle mass, no explanation, or mixed. L. Braun et al.'s review resulted in 28 researchers giving no explanation, five researchers giving mixed, one researcher giving muscle mass, one researcher attributing it to physiology, and three researchers attributing it to genetics for the difference in eGFR results among African American and Caucasian participants (Lundy Braun, 2021).

Overall, the L. Braun et al. literature research study provides substantial implications for increased disparity in treating renal disease within African American community with the use of race multiplier in eGFR practice today. The L. Braun et al. review of thirty-eight empirical research studies provides compelling argument against continued use of race modifiers when using diagnostic tools such as the eGFR in the prevention and treatment of renal disease among African Americans. The study also highlights the delay in care experienced by the African American population as a result of utilization of corrective race multipliers when using the eGFR. The use of the race modifiers continues to foster racial differences in the quality of care, most notably, among the African American population (Lundy Braun, 2021).

L. Braun et al.'s study was a meta-analysis research study (Adams, 2018). L. Braun et al. combined the results of 38 original scientific studies that commonly addressed the disparity

created in preventing and treating renal disease within the African American population with the use of race modifiers (Lundy Braun, 2021). The problem with using meta-analysis to support L. Braun et al. research was the questions that remained unanswered (Adams, 2018). The validity of the empirical research studies was also questioned, including bias in participant selection processes, and unidentified systematic or random errors (Marcia Pencak Murphy, 2018). A meta-analysis of the small studies does not always predict the results of a single large study (Adams, 2018). For the sake of validity, the use of empirical research studies was personally preferred.

The research conducted by Ahmed et al., titled "*Examining the potential impact of race multiplier utilization in estimated glomerular filtration rate calculation on African American care outcomes*" used a cross-sequential study design (Marcia Pencak Murphy, 2018). According to Ahmed et al. cross-sequential study, the reviewers observed diverse groups of clients over time periods, with each group observed initially in the same period (Marcia Pencak Murphy, 2018). The cross-sectional approach, when compared to the meta-analysis, personally answers the question of the presence of systematic or random errors that may be reported in the limitations of the research study (Marcia Pencak Murphy, 2018). The objective of the Ahmed et al.'s study shared the common objective to that of the reviewers and the L. Braun et al.'s study, which was the advancement of health equity by reducing disparities in care among the African American patient population (Salmon Ahmed, 2020) specifically through the use of the chronic kidney disease-epidemiology estimated glomerular filtration rate (CKD-EPI eGFR) equation in CKD classification and care delivery. The CKD-EPI eGFR equation was defined as $186\ x\ \left(\frac{creatinine}{88.4}\right) - 1.154\ x\ (Age) - 0.203\ x\ (0.742\ if\ female)\ x\ (1.210\ if\ black)$. Ahmed et al. defined the CKD-EPI eGFR equation for the reader, therefore erasing ambiguity between

interpretations of the CKD-EPI eGFR equation (Hazward, Personal Experiences as a Practicing Advanced Practice Nurse, 2021).

The setting reported in Ahmed et al.'s study identified the type of facility and practice used to conduct the study, providing a clearer idea of the resources and guidelines followed as compared to L. Braun et al. meta-analysis research study. L. Braun et al. study reviewed empirical research to select research studies to include but did not specify the settings of the chosen studies within their findings. As opposed to this, Ahmed et al.'s study takes place in two large academic medical centers and affiliated community primary care and specialty practices (Salmon Ahmed, 2020). Ahmed et al. used a total of 56,845 patients in the Partners HealthCare System CKD registry in June 2019, among whom 2225 (3.9%) were African- Americans. They used a large sample pool of participants and focused on analyzing the participants and not the indirect observation of the research participants in a meta-analysis study, permitting first-hand researcher validity. Ahmed et al. also used a preexisting database for participant inclusion. While the Partners HealthCare System CKD registry in June 2019 may not have been free of systematic or random errors (Marcia Pencak Murphy, 2018), however, the reader may infer that the researcher was not biased in the selection of participants. Research studies that incorporate non-biased research protocols strengthen the research study argument or hypothesis (Marcia Pencak Murphy, 2018). Exposures of the Ahmed et al. study included race, age, sex, comorbidities, and eGFR (Salmon Ahmed, 2020). Significant patient outcomes included kidney transplant referral and dialysis access placement (Salmon Ahmed, 2020).

Both Ahmed et al. and L. Braun et al., studies satisfied quality improvement research requirements by obtaining confirmed consent. However, the difference between Ahmed et al. and L. Braun et al. study was the method used to ensure adherence to quality guidelines for

confirmed consent. Salmon Ahmed et al.'s research study obtained confirmed consent under the established guidelines of Partners HealthCare Chronic Kidney Disease Registry Institutional Review Board exemption. L. Braun et al.'s study protocol (Marcia Pencak Murphy, 2018) did not require informed consent in using the thirty-eight empirical research studies. L. Braun et al. used an Indirect aggregate date (AD) (Integrity, 2021) to gather evidence and/or confirmed consent. The use of aggregate data raised questions of not only validity but also ethical practices within the empirical research studies utilized in the L. Braun et al. study (Integrity, 2021).

The result of the Ahmed et al.'s study showed that among 2225 African American patients, 743 (33.4%) would be reclassified to a more severe CKD stage if the race multiplier were removed from the CKD-EPI equation (Salmon Ahmed, 2020). Correspondingly, 167 of 687 (24.3%) would be reclassified from stage 3B to stage 4 (Salmon Ahmed, 2020). Finally, 64 of 2064 patients (3.1%) would be resigned from eGFR ≥ 20 ml/min/1.73 m^2 to eGFR ≤ 20ml/min/1.73 m^2, meeting the criterion for kidney transplant priority. After the results, according to Ahmed et al. research study of 64 African American patients with an eGFR ≤ 20ml/min/1.73 m^2 after the race multiplier was removed, zero was referred, evaluated, or waitlisted for kidney transplant, compared to 19.2% of African American patients with eGFR less than or equal to 20 ml/min/1.73 m^2 with the default CKD-EPI equation (Salmon Ahmed, 2020).

Ahmed et al.'s cross-sectional study shares similarity in hypothesis. With L. Braun et al.'s meta-analysis study. Both studies provided strong support that corrective race multipliers, such as the default CKD-EPI equation, promotes unintentional (Lundy Braun, 2021) and intentional (Salmon Ahmed, 2020) continued disparity in primary care practices in preventing and treating renal disease within the African American population (Lundy Braun, 2021). However, Ahmed et

al.'s cross-sectional study is more impactful today to evoke change within primary care practice. According to Integrity (2021), cross sectional studies are more popular within the research community in reviewing and gathering supportive evidence-based practices to introduce change within the medical community.

2.4. Synthesis Statement

Collectively the chosen articles provide valuable insight to support investigating the effects of ethnic modifiers on early detection of renal disease among non-European populations, including Veterans. The research articles were chosen for their level of evidence, focusing on systematic literature reviews at level one. Superior levels of evidence in these research articles supported systematic inclusion criteria that correlated GFR modifiers with an increased risk of developing renal disease in non-European populations. The chosen articles provide clinical support for evaluating the continued use of ethnic modifiers and present consequences of delayed detection of renal disease in at-risk populations. The articles presented up-to-date published findings between 2019 to 2024. These articles were chosen for the reflected insight into the history behind the development of Black race modifiers (BRM) and probable insight into the continued use of race focused modifiers. These articles collectively offer a comprehensive review, insights, and proposed solutions to decrease healthcare disparity in detecting and managing renal disease.

2.5. Conceptual Framework

According to Melnyk & Fineout-Overholt (2019) evidence is irrefutable. Among the theoretical models reviewed, the Iowa model of evidence-based practice (EBP) is an appropriate model to utilize in the initial formulation of an evidence-based project that seeks to persuade institutional change based on increased awareness through identifying opportunities for clinical

practice improvement. The Iowa Model utilizes motivators termed “triggers” categorized into clinical problem-focused or external new knowledge-focused triggers (White, Dudley-Brown, & Terhaar, 2021). The Iowa EB practice model utilizes clinical institutional triggers as evidence for the need for changes based on internal (clinical problem-focused triggers) and external current clinical practices (external new knowledge-focused triggers) (White, Dudley-Brown, & Terhaar, 2021). The Iowa EBP model expands the scope of reference utilized for improving clinical practice as it encourages the clinician to incorporate dynamic change resources to establish sufficient evidence toward validating “triggers”, thereby advocating for clinical change (White, Dudley-Brown, & Terhaar, 2021). Recognizing these clinical practice change triggers providing opportunities for the Advanced Practice Providers (APPs) to recognize and initiate clinical practice changes.

The Iowa EBP model is a structured stepwise algorithm that guides clinicians in a systematic approach toward validating clinical “triggers.” The Iowa EBP model asked if sufficient evidence was available and does the evidence supports the need for clinical change. This model directs the clinician to investigate if there remain enough available research studies to support the proposed needed for change. The Iowa EBP model questions the type and quality of the supported research and if in fact the research findings are relevant to the clinical practice topic. The strength of the Iowa EBP model is that it questions if the research studies are applicable and beneficial for the intended population. The Iowa EBP model questions if findings are feasible based on the topic. It also questions if the benefits of the proposed clinical change model outweighed the benefits of change, which is a shared objective in advancing healthcare research. The Iowa EBP model also addresses institutional barriers to implementing best practice

changes, such as institutional norms, lack of administrative support, and/or lack of interest in evidence-based practices due to the lack of stakeholder support.

3. Summary

To summarize, the purpose of the project was to derive a conclusion concerning the continued use of eGFR in clinical practice as a clinical indicator to treat at-risk populations for early detection of renal disease and the need for a practice change. Evidence-based practice (EBP) integrates patient preferences and values (Melnyk & Fineout-Overholt, 2019). Withholding relevant information from patients that may guide them in making clinical decisions about what course of treatment to pursue represents a violation of the patient's right to informed decision-making. For example, not disclosing to the patient additional diagnostic studies or treatments that were not recommended based on an eGFR would be withholding crucial information, potentially disregarding the patient's clinical treatment preference. In the example, if the patient were given the option to initiate treatment for a GFR, which would dictate further diagnostic studies, as opposed to an eGFR, which under current clinical practices does not dictate further clinical intervention, then the patient would have all the information needed to make the best decision for themselves based on their beliefs and treatment goals. When clinicians choose to withhold treatment based on an eGFR greater than or equal to 60, supported by institutional clinical practice, it equates to withholding critical relevant information. Withholding the benefits of utilizing GFR alone presents a disturbing ethical clinical question: What is the reasoning behind clinicians continuing to withhold clinical interventions based on eGFR levels alone?

The use of the eGFR calculation was based on research studies which found that people categorized as Black or African American among study participants had higher levels of creatinine in their blood (Justin Bukabau, 2019). The findings of higher creatinine levels in study

participants identified as Black or African American were based on the stereotype that Black or African Americans had greater muscle mass than non-African Americans (Justin Bukabau, 2019). This stereotype led to the interpretation that greater muscle mass was the contributing factor to higher GFR levels, paving the way for adding GFR modifiers that resulted in higher to normal GFR levels (Melnyk & Fineout-Overholt, 2019). It is hoped that with new educational knowledge, understanding, and comprehension of foundational research for current practice, errors based on personal clinical judgment may decrease (Melnyk & Fineout-Overholt, 2019). Errors in clinical practice utilizing eGFR, in the case of race modification, contribute to legal and ethical misalignment with the oath of ethics (National Institute of Health (NIH), 2023) and the culture of the Department of Veterans Affairs.

Once a patient's urine sample is collected and examined by the lab, because the race of the patient is unknown to the lab technician, both the non-African eGFR and African eGFR are listed on the lab results. It is then that the clinician interprets the eGFR and decides to treat based on the eGFR for non-African or African because the race of the patient is known to the managing provider. The decision to treat is the responsibility of the managing provider. As a Christian advanced practice provider who believes in a transformational worldview, where conversion (or to convert) is a supernatural transformation of the mind, affection, and life that restores freedom, self-control, and spiritual union with God, race has no place in clinical intervention. As a child of the Lord, "The Lord knows those who are his," and "Let everyone who names the name of the Lord depart from iniquity" (2 Tim. 2:19). Conversion is the act of turning away from wickedness and turning to God from idols (1 Thess. 1:19). This writer also believes that as leaders in the community, the application of a transformational worldview in practice can be achieved with the intent to cause no harm while preserving the quality of life. Doctoral APP, with the

understanding of conversion through learned knowledge, notably decreases barriers contributing to healthcare disparity that continue to contradict the Christian worldview in healthcare practices. The routine practice of full patient disclosure and reassigning clinical judgment to that of the patient could resolve ethical and legal disparities as it pertains to initiating research-guided clinical interventions in the early detection and prevention of progressive renal disease based on GFR.

Methodology

3.1 Design

This study design is an evidence-based practice project with a quasi-experimental design conducted by way of a systematic review of electronic medical records. The study focused on random selection of patients last seen by randomly selected PACT members at the Malcom Randall Department of Veteran Affairs Medical Center (VAMC) between 2019 and 2024. This study is a systematic retrospective study conducted through electronic data collection through the utilization of electronic data collection via the DVA computerized patient record system (CPRS). This study is a survey of patient outcomes and perception of improved clinical screening practices for renal disease based on the last documented stage of renal disease. No patient interaction were required for this study. Data analysis involved EMC review of documented patient serum and urine samples from Veterans seen between 2019 and 2024. Each Veteran was required to have at least three blood and urine samples obtained between 2019 to 2024 for analysis. For each blood and urine sample, an analysis of urine albumin excretion, eGFR, GFR, serum creatinine, series and urine albumin/creatinine ratio were conducted. Through EMC review, Veterans meeting inclusion criteria were assessed for risk factors, to include but not limited to, age, race, elevated creatine levels, decreased GFR, eGFR CKD-EPI, and eGFR (Cystine C). The study aims to correlate the most recent patient-specific stage of renal disease with patient perceptions of medical management, particularly focusing on cases where the stage of renal disease remained stable or improved.

3.2 Measurable Outcome

The participant size was determined based on the number of Veterans that meet the following criteria: race (non-European and European), Veteran status, and age. The measurable

outcome was to determine the date of the first clinical indication of decrease in GFR (renal insufficiency), Stage 1 with normal or high GFR (GFR > 90 mL/min), Stage 2 mild CKD (GFR equals 60-89 ml/min), Stage 3A moderate CKD (GFR = 45-59 mL/min), Stage 3B moderate CKD (GFR = 30 - 44 mL/min), Stage 4 severe CKD (GFR = 15-29 mL/min), Stage 5 end stage CKD (GFR< 15 mL/min), and End Stage renal disease (DaVita Kidney Cere, 2024).

3.3 Setting

The research was conducted at the Malcom Randall Department of Veteran Affairs Medical Center (VAMC), a 239 bed VA hospital that served veterans across North Florida and South Georgia (VA U.S. Department of Veteran Affairs, 2021). The facility provides, but not limited to, primary care and specialty health services, including mental health, minority veteran care, patient advocacy, whole health initiatives, nutrition and dietary care, surgery, weight management, toxic exposure screening, psychology, PTSD care, gastroenterology, vision care, hearing loss, cancer treatment, nutrition counseling, and prescriptions (VA, 2024).

3.4 Population

People of non-European ancestry are underrepresented in research studies. This study examines treatment initiation for Veterans of European and non-European ancestry to increase validity. However, the focus population for this study was the non-European Veteran population who completed renal function tests at the Malcom Randall VAMC between 2019 and 2024.

3.5 Ethical Considerations

The problem began with the use of ethnic modifiers in primary care. The use of ethnic modifiers to guide clinical decisions results in institutional lead health care disparity in the detection, prevention, and management of renal disease. Withholding relevant information for

patients that may guide them in making clinical decisions about what course of treatment to pursue, represents a violation of the patient's right to informed decision making (Hazward, AGACNP-BC, PCP,DNP, 2024).

3.6 Data Collection

This study obtained research specific data by way of a retrospective systematic review of the North Florida DVAMC CPRS electronic medical records comprised of Veterans last seen by their assigned provider between 2019 and 2024. The main researcher, Sidneca Hazward MSN, DNP-student used a Department of Veteran Affairs assigned personal laptop which provided additional layers of protection and data collection and giving streamlined direct access to electronic medical records without the assistance of a third party. The process of data collection utilized a random search for participants fitting the inclusion criteria by randomly selecting a practice group within North Florida DVAMC. Once a random practice group was selected, the search criteria were limited to patients seen within the last 143 days up to the current date of accessing the electronic medical record. This created a list of available anonymous electronic medical records within the period of 143 days up to the current date of data collection. Starting from the top of the available list, records were accessed immediately by going to the lab results window and creating a search engine using six lab variables: albumin, creatinine, creatinine (2021 CKD-EPI), GFR, eGFR, eGFR CKD-EPI 2021, and eGFR (Cystine C), including the date collected. In order for the EMR to be included in the study there had to be three consecutive decreased levels of two of the qualifying variables out of the aforementioned six variables. Once two consecutive levels were identified, the EMR was then added to the participants list. The remaining study variables were based on the two qualifying variables and the date the variables resulted. For example, based on the three consecutive dates when the three decreased eGFR CKD-EFR 2021 levels resulted, the

remaining five inclusive study variables were recorded for the same dates the eGFR CKD-EFR 2021 levels resulted providing continuity of data collection for each participant. This method was repeated for each participant meeting inclusive research criteria.

3.7 Data Analysis

Data analysis involved EMC review of patient blood and urine samples from Veterans seen between 2019 to 2024. Each Veteran is to have at least three blood and urine samples obtained between 2019 and 2024 for analysis. For each blood and urine sample, an analysis of urine albumin excretion, eGFR, GFR, serum creatinine, and urine albumin/creatinine ratio was conducted. Through EMC review, Veterans meeting inclusion criteria were assessed for risk factors for hypertension (HTN), diabetes mellitus (DM), and cardiovascular disease. This data was arranged systematically to show correlation with increased risk based on existing comorbidities along with stage of renal disease if applicable. A correlation between initial renal disease diagnosis was noted as it relates to clinical intervention and stage of renal disease.

3.8 Tools

This study is a systematic data review of electronic records from 2019 to 2024. This study utilizes electronic data collection through computerized patient record system (CPRS) data collection system. This study will use data tabulation software to organize and analyze the data.

3.9 Interventions

This study is a systematic retrospective review of electronic medical records. No patient interventions were performed during this study. Upon completion of this study, a clinical presentation will be provided to promote clinical institutional awareness of findings. The identified scholarly project achieved approval in its entirety from Malcom Randal, Gainesville

FL VAMC on 2/12/2024. The Scholarly Project was approved with no required changes on May 10, 2024, by the Scholarly Project Chair, Professor Kenneth Thompson. The scholar achieved Liberty University Research approval on May 15, 2024, and achieved clearance for research data collection. As it pertains to the practicum hours milestones, both practicum I and Practicum II were completed successfully with the completion of a minimum of 112 hours per practicum.

3.10. Permissions

To commence data collection for the scholarly project, two authority permissions are required. The first required authority approval was that of the supporting institution Malcom Randal, Gainesville, FL VAMC. The scholarly project received approval in its entirety from Malcom Randal, Gainesville FL VAMC as of 2/12/2024. The second required authority approval was that of the Scholarly Project Chair, Kenneth Thompson. The scholarly project received approval in its entirety on May 10, 2024. The third required authority approval was that of the supporting institution i.e. Liberty University Review Board. The scholarly project received approval in its entirety from Liberty University Review Board on May 15, 2024.

Results

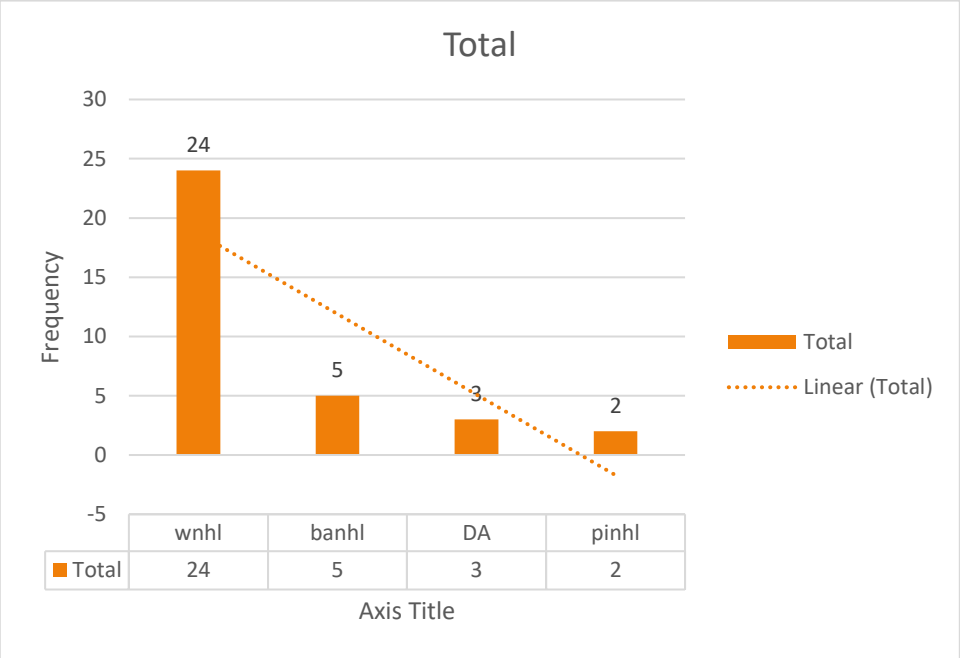
The data is able to establish correlations in clinical practice, providing insight into how the use of eGFR (eGFR CKD-EPI 2021) in the absence of race modification influence early detection of renal disease for Veterans managed by Patient-Aligned Care Teams. These are: (1) Elevated serum creatinine levels in the presence of decreased eGFR (CKD-EPI 2021) is a more accurate clinical indicator to assess the risk for renal disease; (2) High (H) and Low (L) abnormal lab level indicators promote early detection of clinical risk for renal disease and continuity of care; (3) The eGFR CKD-EPI 2021 equation does not include race modifiers and is a consistent clinical indicator in identifying risk for renal disease; (4) European Veterans are seen with a higher frequency by PACT at the Malcom Randall VAMC than Non-European Veterans; (5) The early detection of at risk for renal disease is heavily dependent on PACT awareness of the need to screen for risk for renal disease; (6) The use of serum albumin levels as secondary indicator for at-risk renal disease in the presence of decreased eGFR CKD-EPI 202 is a weak correlation.

4.1 Results of Data Analysis

Data analysis involved EMC review of patient blood and urine samples from Veterans seen between 2019 and 2024. Each Veteran had to have at least three blood and urine samples obtained during this period for analysis. For each blood and urine sample, an analysis of urine albumin excretion, eGFR, GFR, serum creatinine, and eGFR CKD-EPI 2021 tests were conducted. Through this review, Veterans meeting inclusion criteria were assessed for two risk factors based on three consecutive abnormal albumin, creatinine, creatinine (2021 CKD-EPI), GFR, eGFR, eGFR CKD-EPI 2021, and eGFR (Cystine C) levels recorded within 2019 to 2024, alongside age, sex, and active care with an assigned PACT. This data was arranged systematically to show correlation with increased risk based on existing comorbidities, stage of

renal disease abnormal lab levels, and increased risk for renal disease in the absence of race. Figure 1 illustrates the frequency of Veterans' nationality seen at the North Florida, VAMC categorized according to European and non-European nationality.

Figure 1. Showing the number of participants organized by race.



Note: banhl = Black African American Not Hispanic or Latino; DA= Did not answer; pinhl = Pacific islander or non-Hispanic or Latino; wnhl = white non-Hispanic or Latino.

Figure 2 shows a direct correlation between decreased eGFR CKD-EPI 2021 (without the race modifier) and serum creatinine. This figure shows that once a Veteran has been identified to have decreased eGFR CKD-EPI 2021 level, then it is more likely to also have elevated Creatinine levels. Creatinine is reflective of body muscle mass and is a breakdown product of creatine phosphate. The amount of creatinine excreted is proportional to the total creatinine phosphate content of the body and, in turn, the muscle mass. Figure 3 demonstrates a direct correlation between decreased eGFR CKD-EPI 2021.

Figure 2. Graph representing relationship between decreased eGFR CKD-EPI 2021 and Creatinine 1 levels.

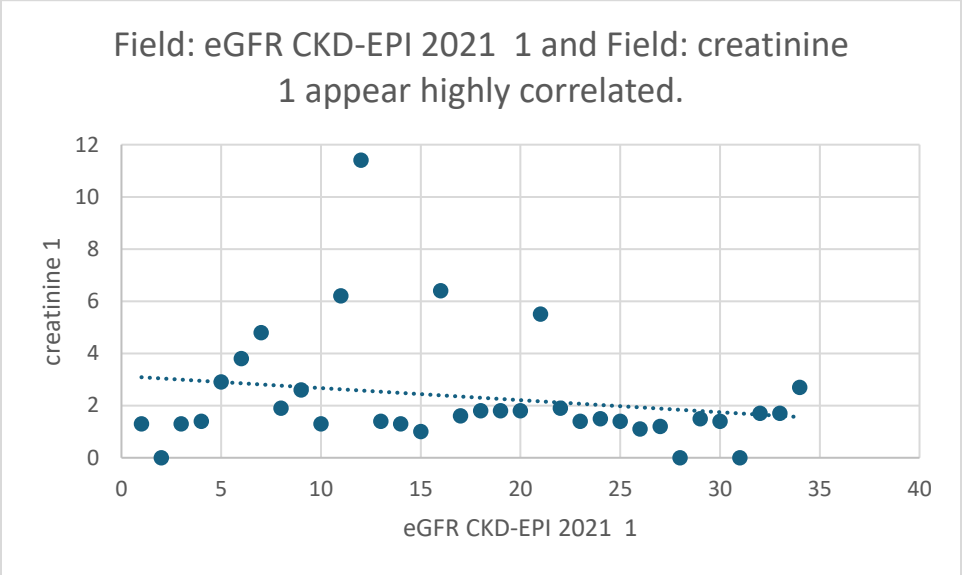
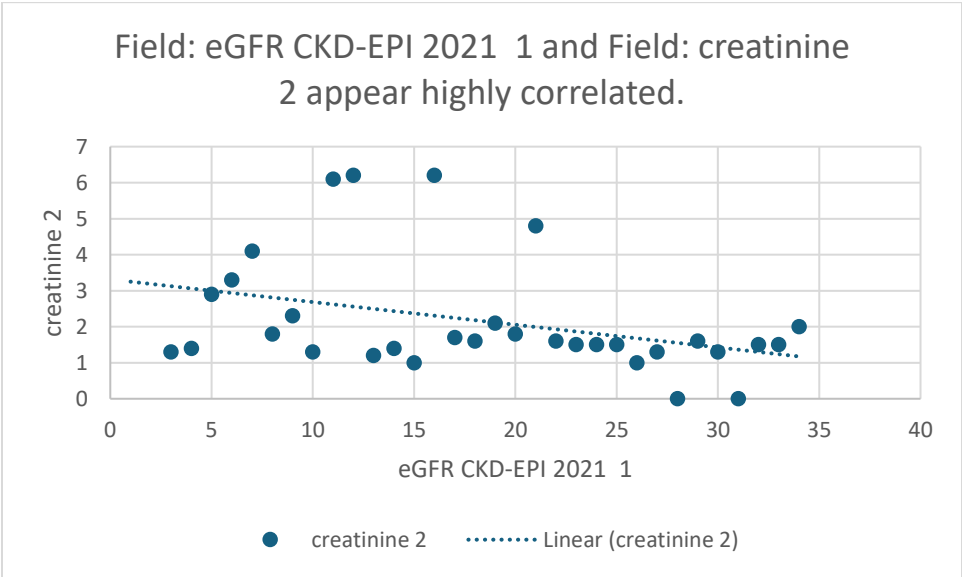


Figure 3. Graph showing a direct correlation between decreased eGFR CKD-EPI 2021 1 and Creatinine 2 levels.



A series of three consecutive abnormal eGFR CKD-EPI 2021 measurements was collected to show that the correlation between Creatinine levels is not a transient finding but continues to

support the validity of using eGFR CKD-EPI 2021 in clinical intervention centered on early detection of renal disease that is consistent with European and non-European nationalities. Figure 4 correlates albumin levels and race. A series of three consecutive abnormal serum eGFR CKD-EPI 2021 was first identified. Next inclusive serum variables were identified to include abnormal albumin levels. As a major constituent of plasma, approximately 60 %, albumin is vital in maintaining blood volume and body fluid distribution. Low serum albumin levels result in a fall in osmotic pressure, leading to fluid retention in tissue spaces. Low serum albumin is common in kidney disfunction. In the presence of kidney disfunction, albumin is secreted and therefore a good indicator for chronic renal disease. This figure illustrates the frequency of abnormal albumin levels and correlates eGFR CKD-EPI 2021 with the frequency of European and non-European nationalities. Non-European (banhl and pinhl show a higher risk for abnormal albumin levels in the presence of decreased eGFR CKD-EPI 2021 levels.

Figure 4. Graph showing a direct correlation between albumin 1 and race.

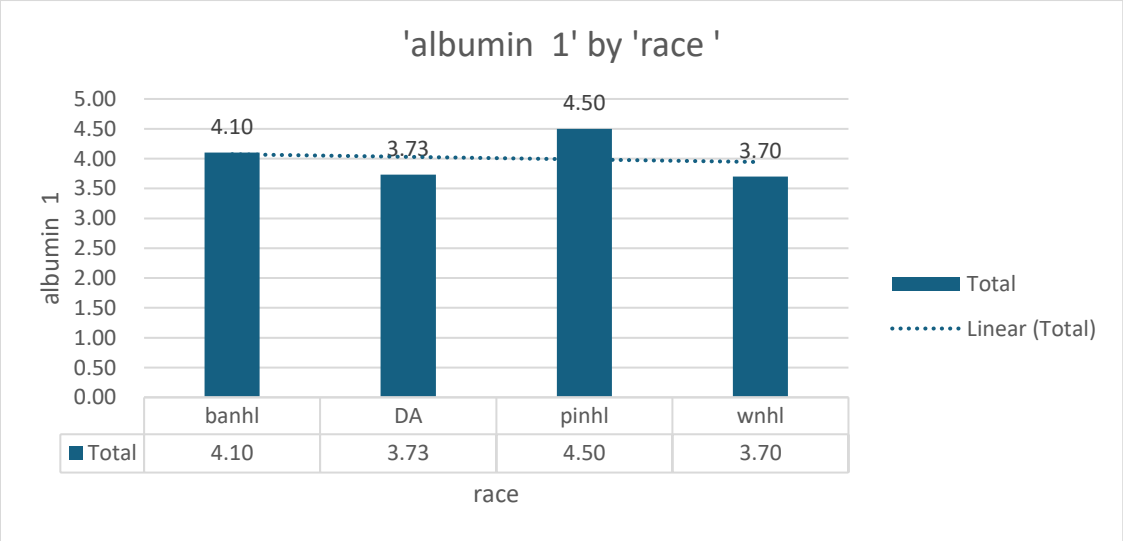


Figure 5 illustrates that once a Veteran has been identified to have decreased eGFR CKD-EPI 2021 2 level, they are more likely to also have elevated Creatinine 3 levels. As shown in

Figure 6, abnormally low albumin is a strong indicator for risk for renal disease. Albumin was used as a critical variable along with abnormally low eGFR CKD-EPI 2021 serum levels. Figure 7 demonstrates that abnormally low eGFR CKD-EPI 2021 serves as the initial indicator for evaluating creatinine as a secondary variable in assessing the risk for renal disease. The findings support Figure 6 analysis that once a Veteran has been identified to have decreased eGFR CKD-EPI 2021 3 level is more likely to also have elevated Creatinine 2 levels.

Figure 5. Graph showing a direct correlation between decreased eGFR CKD-EPI 2021 2 and Creatinine 3 levels.

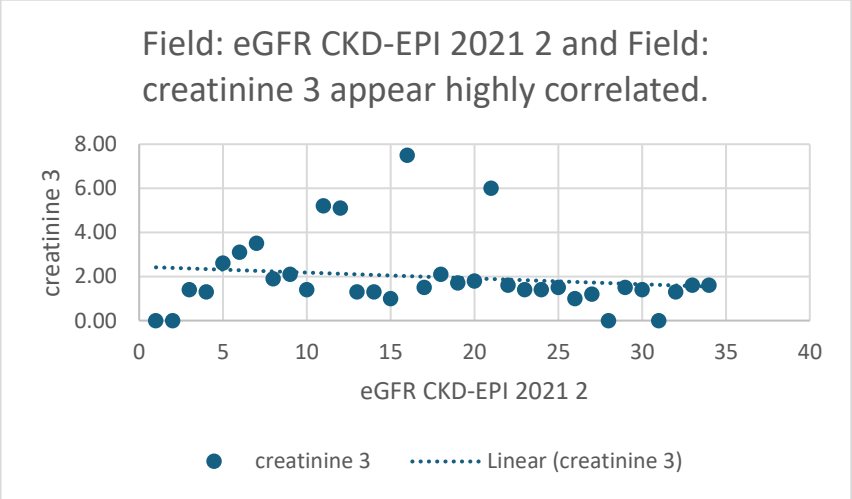


Figure 6. Shows the frequency of recorded albumin 2.

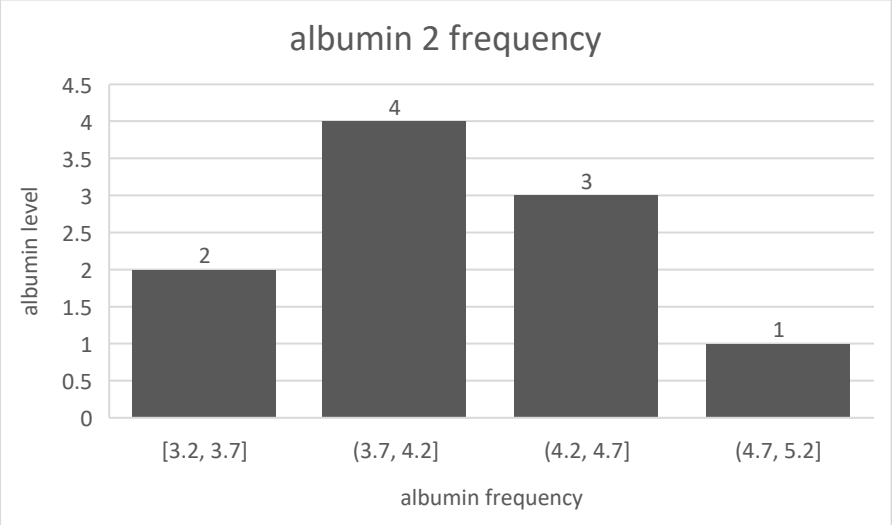


Figure 8 shows the outcome of the third consecutive recorded eGFR CKD-EPI 2021 compared to that of the third consecutively recorded creatinine finding. Figure 8 also supports the use of eGFR CKD-EPI 2021 findings along with serum creatinine as strong evidence to manage the Veteran at risk for renal disease, consistent with evidence-based practice (EBP) clinical diagnostic interventions.

Figure 7. Graph showing a direct correlation between eGFR CKD-EPI 2021 3 and creatinine 2.

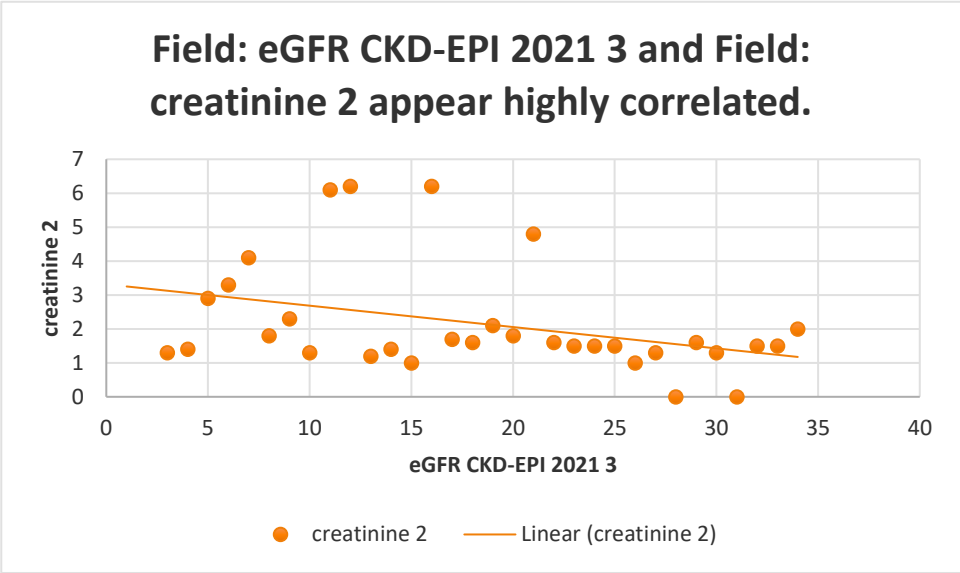
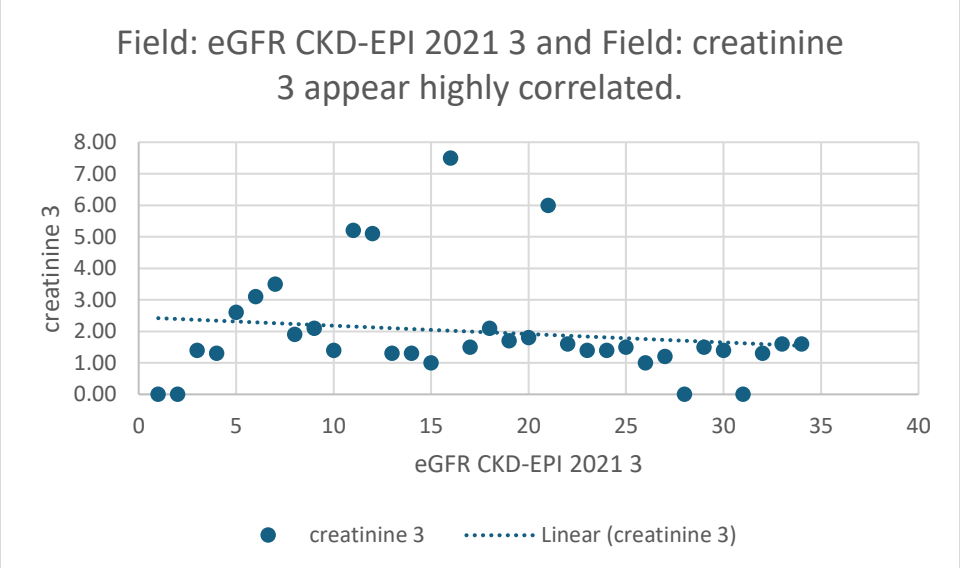


Figure 8. Graph showing a direct correlation between eGFR CKD-EPI 3 and creatinine 3 levels.



Thus, the overall analysis shows that elevated serum creatinine levels, when accompanied by decreased eGFR CKD-EPI 2021, serve as accurate clinical indicators for assessing the risk of renal disease. This correlation supports the hypothesis that eGFR CKD-EPI 2021 is a reliable tool for the early detection of kidney issues.

The use of high (H) and low (L) abnormal lab level indicators was found to promote the early detection of clinical risk for renal disease. The results also emphasized the efficacy of the eGFR CKD-EPI 2021 equation, which excludes race modifiers, as a consistent clinical indicator for identifying the risk of renal disease. The results showed that the correlation between creatinine eGFR CKD-EPI 2021 streamlines with both European and non-European populations. Further, the weak correlation between the use of serum albumin levels as a secondary indicator for at-risk renal disease and decreased eGFR CKD-EPI 2021 suggests that relying solely on serum albumin may not be sufficient for risk stratification, indicating the need for enhanced approach to risk assessment that incorporates multiple biomarkers.

Discussion

The primary objective of this study was to evaluate whether the use of the eGFR CKD-EPI 2021 equation without race modifiers influenced the early detection of renal disease in Veterans managed by PACTs. The findings reveal that eliminating race modifiers can significantly enhance the early identification and classification of chronic kidney disease (CKD) among Veterans, ensuring more accurate and equitable healthcare delivery irrespective of race.

The results demonstrate a strong correlation between decreased eGFR levels and elevated creatinine levels, as well as between low albumin levels and the risk for renal disease. These findings support the hypothesis that eliminating race-based adjustments in eGFR calculations can lead to earlier and more accurate detection of CKD. Specifically, the use of eGFR CKD-EPI 2021 without race modifiers resulted in higher prevalence rates of CKD, suggesting that previous methods may have underestimated the severity of kidney disease in certain populations.

One notable finding of this study shows that the correlation between creatinine levels and eGFR CKD-EPI 2021 was consistent across different racial groups, including both European and non-European populations. This finding indicates that the physiological relationship between creatinine and kidney function is similar irrespective of race. The study highlights the clinical relevance of using the eGFR CKD-EPI 2021 equation without race modifications. The consistent correlation between creatinine and eGFR across racial groups supports the universality of these biomarkers in assessing renal function. Clinicians can rely on these findings to make informed decisions about CKD management, ensuring that all patients benefit from accurate and equitable diagnostic practices. Further, data showed that when race modifiers were removed, a larger number of patients were reclassified into more advanced stages of CKD. This reclassification

was particularly notable among African American patients, who have traditionally been adjusted with race modifiers that could potentially delay the diagnosis of CKD. The elimination of race modifiers led to earlier identification of CKD, which is crucial for timely intervention and management. Thus, the findings reveal that the eGFR CKD-EPI 2021 equation, which omits race modifiers, presents a more equitable approach to assessing renal function. This aligns with recent guidelines and growing consensus in the nephrology community that race-based adjustments may contribute to healthcare disparities. By excluding race as a factor, we ensure that all veterans receive an accurate assessment of their kidney function, potentially leading to earlier diagnosis and treatment of CKD in populations that were previously underserved.

The findings have significant implications for clinical practice. By removing race-based adjustments from eGFR calculations, healthcare providers can improve the accuracy of CKD diagnosis, leading to earlier and more precise staging of the disease. This change can enhance the overall management of CKD, particularly for populations that may have been previously underserved or misclassified. Early detection through accurate eGFR calculations allows for timely interventions that can slow the progression of CKD, improve patient outcomes, and reduce healthcare costs. For Veterans managed by PACTs, this means setting healthcare goals earlier in the disease process and implementing preventative measures to preserve kidney function.

5.1. Implications for Practice

The utilization of a blanket understanding of race and social class could improve scientific understanding when using race as clinical determinants for healthcare delivery. Implication of primary care improvement model designed to improve CKD could result in early

identification of at-risk Veterans for kidney disease. Early identification of kidney disease permits the PACT team to initiate healthcare goals early in the disease process. Early identification of eGFR, supported by correlated creatinine levels, provides the opportunity to work in partnership with Veterans concerning the ramification of unmanaged eGFR and creatinine levels preventing progression of chronic renal disease. Veterans who understand the disease process and evaluate individual health care management objectives have a high probability of arresting the stage of chronic renal disease, decreasing the progression of renal disease, and/or decreasing the stage of renal disease.

The quality goal of the Malcom Randall Medical Center remains to be the preeminent tertiary hospital system and fulfill the mission: "*Honor America's Veterans by providing exceptional health care that improves the health and well-being (U.S. Department of Veteran Affairs, 2023) of those the DVA serves.*" The baseline indicator of quality before the project began indicated that overall patient satisfaction should not fall below 85%. The future of the DVA 170 healthcare facilities and outpatient facilities throughout the United States, currently under the leadership of the cabinet of Federal affairs, depends on the DVA's comparative competitive ability to continue providing life-long services to the Veterans. Correcting unintentional institutional biases in managing and delivering ethical health care remains the responsibility of stakeholders and guarantees the sustainability of eliminating ethnic modifiers when staging renal disease. Early diagnosis and staging of renal disease are effective in preserving quality of life and demand the resilience of the proposed teachings of the study. DVA's lead for the awareness of renal disease equips the community to access education and implement changes in lifestyle, such as adequate hydration, avoidance of nephrotoxic medications, blood pressure control, and glucose control. The probability that the research

findings will influence future clinical practice depends on the stakeholders who make clinical intervention decisions. As advanced practice providers, our goal is to prevent, diagnose, and manage disease processes based on current evidence-based practice. Personal biases have no place in the field of medicine; effective healthcare relies on what can be proven through research and applied ethically in practice.

5.2. Limitations of the Study

- There are some limitations to the current study.
- The study relied on existing medical records, which may contain inaccuracies or incomplete data. Missing data points or errors in recorded values could impact the study's findings and their interpretation.
- Conducted at a single medical center, the study's findings may not be generalizable to other settings, such as different geographic locations or healthcare systems with varying patient demographics and practices.
- While the study included both European and non-European populations, the sample size for some racial groups may have been limited. A larger and more diverse sample would provide more robust and generalizable results.
- The study specifically examined the eGFR CKD-EPI 2021 equation. Other eGFR equations (e.g., MDRD, Cockcroft-Gault) were not evaluated, and their potential differences in detecting CKD without race modifiers were not explored.
- Transitioning to the eGFR CKD-EPI 2021 equation without race modifiers requires changes in clinical guidelines, education, and practice patterns. Resistance to change or lack of awareness among healthcare providers could hinder the implementation of study recommendations.

5.3. Recommendations

- Healthcare providers should transition to using the eGFR CKD-EPI 2021 equation without race-based adjustments. According to recent research and this study findings, this change ensures more accurate and equitable diagnosis of CKD across all racial groups.
- Implement routine screening for CKD using the revised eGFR calculations in high-risk populations. Early detection and monitoring can lead to timely interventions and better health outcomes.
- Encourage collaboration among healthcare providers, including nephrologists, primary care physicians, dietitians, and pharmacists, to develop comprehensive care plans for CKD patients.
- Conduct additional studies to validate the findings of this research and explore the long-term impact of removing race modifiers on CKD outcomes.
- Engage key stakeholders, including healthcare administrators, policymakers, and patient advocacy groups, to support the implementation of these recommendations.

5. 4 Dissemination Plan

Clinical findings will be disseminated by a displayed data board, literature publication, oral presentations, and digital uploads to myhealthe Vet for interdisciplinary annual training. A decision-making template will also be used to implement it in clinical practice.

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Synthesis Matrix

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
Article 1: Elaine Khoong, L. K.-O. (2019, June 7). A pragmatic cluster randomized trial of an electronic clinical decwasion support system to improve chronic kidney disease management in primary care: design, rational, and implementation experience. *JMIR Res Protoc, 8*(6), 22. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6594214/	To report the trial design and implementation experience of a CKD eCDSS in primary care	Eligible patients with 2 previous eGFR by serum protein <60/min/1.73m² at least 90 days apart. Randomization at the PCP level.	3-arm cluster randomized controlled trial with randomization at the provider level	Primary outcome: blood pressure change Secondary outcome awareness of CKD diagnosis	Level 2: Single randomized controlled trial	Pilot study limited by inclusion of patients and providers from a single institution	Yes. The study seeks to highlight that with the use of clinical decision support tools may be a low-cost effective solution to enhance guideline-concordant care for undiagnosed kidney disease.
Article 2: Justin Bukabau, E. Y. (2019). Performance of creatinine-or cystatin c-ased equations to estimate glomerular filtration rate in sub-Saharan African populations. *Kidney International*, 1181-1189. Retrieved from http://doi.org/10.1016/j.kint.2018.11.045	To study three topics of clinical interest for nephrologists in Africa regarding estimated GFR; MDRD and CKD-EPI SCr, CKD-EPI CysC and CKD-EPI combined equations to determine if ethnic correction was accurate in African content,	Sample size of 510 adult participants from 2 sub-Saharan counties; Kinshasa; Democratic Republic of Congo (n=210) and Abidjan, Ivory Coast (n=284)	Cross-sectional study	In a sub-Saharan African population, adjustment for race did not improve the performance of GFR estimating equations.	Level 2: Single randomized controlled trial	Limited to African people living in Africa. The proportion of patients with CKD was still small. Study should have included whites as a control group.	Yes. This study directly evaluates clinical markers routinely used in the African populations to determine clinical interventions.

Article 3: Kathryn Griffiths, M. R. (2023, February 22). Interpreting an estimated glomerular filtration rate (eGFR) in people of black ethnicities in the UK . *Britwash Medical Journal (Online), 380*, 5. Retrieved from https://www.proquest.com/docview/2779737284?accountid=12085&forcedol=true&forcedol=true&pq-origsite=summon	A measured GFR was not required for patients with an acute kidney injury in the context of an acute systemic illness.	A 37 y/o male attending a general practitioner review of high blood pressure.	Case study	Recommended management of stage 3 CKD according to NICE guidelines, optimize BP, initiate statin, a sodium glucose co-transporter-2 (SGLT-2) inhibitor.	Level 5: Single case study	Single case study	Yes. This study personalizes patient – practitioner communication in the diagnosis and treatment of renal disease based on GFR and new recommended NICE guidelines supporting the use of eGFR.
Article 4: Leonice Souza-Pereira, N. P. (2020, May 21). Clinical decwasion support systems for chronic diseases: A systematic literature review. *Elsevier*, 13. Retrieved from http://doi.org/10.1016/j.cmpb.2020.105565	To investigate existing literature dealing with the development process of clinical decision support systems for monitoring chronic diseases.	Comprised of 14 clinical studies that included CDSS, related to chronic disease management, published between January 2010 in August 2019, and in journals and conferences index in the previously mentioned scientific databases.	Systematic literature review	Fourteen studies reveal that the most addressed diseases were diabetes with the most commonly proposed approach being diagnostic	Level 1: Systematic literature review	The study was generalized to chronic diseases and not specifically toward diabetes.	Yes. This study seeks to highlight the importance of CDSS for systematic detection, and treatment of chronic diseases adding additional support for standardized use CDSS in preventive medicine to include diabetes.
Article 5: Ta-Chien Chan, Y.-H. C.-H.-S. (2023, December 31). Mortality was and years of life lost for people with reduced renal function detected from regular health checkup: A matched cohort study. *Elsevier Preventive Medicine Reports*, 7. Retrieved from http://doi.org/10.1016/j.prmedr.2022.102107	To highlight mortality was and years of life lost due to abnormal renal function.	During a 16-year study period, 471,669 people who underwent health checkups at MJ Health Screening Center in Taiwan	Retrospective cohort study from health checkup data from 2000-2015	Abnormal renal function shortest life expectancy. Active health management of renal function can reduce the disease burden.	Level 2: Retrospective cohort study	Miscalculations may have occurred. Was for cancer affects the estimation of survival. The study cohort may have had different socioeconomic status. Two different approaches to enhance comparability.	Yes. This study takes a retrospective approach to highlight potential outcomes of patients with abnormal renal function.

Article 6: Felippe Marcondes, D. C. (2021). Are racial/ethnic minorities recentyly diagnosed with diabetes less likely than white individuals to receive guideline-directed diabetes preventive care? *BMC Health Services Research, 21*(1150). Retrieved from https://doi.org/10.1186/s12913-021-07146-0	To assess racial/ethnic differences in the receipt of guideline-directed diabetes care for complication prevention by individuals recently diagnose with diabetes	Multivariant regression method to associate between 7,341 non-Hispanic White, non-Hispanic Black, and Hispanic and guideline-directed process measures for prevention of diabetes complications	A repeated cross-section of individuals recently diagnosed with diabetes within 5 years from 2011-2017 obtained from the National Health Interview Survey	Hispanics recently diagnosed with diabetes was less likely to receive indicators of guideline-directed care for the prevention of complications.	Level 5: Single case study	Limited to non-Hispanic White, non-Hispanic Black and Hispanic from the National Health Interview Survey seen by a health professional	Yes. This study focuses on the outcomes of non-White populations and the disparity of applied guideline-directed health care in the prevention of health complications, which extends beyond preventing diabetes
Article 7: Mark Marzinke, D. G.-M. (2022). Limited evidence for use of a black race modifier in eGFR calculations: a systemic review. *Clinical Chemwastry*, 521-533.	To use an evidence-based approach to systematically evaluate the literature relevant to the performance of the eGFR equations with and without Black race modifier (BMR)	413 out of 8,632 eligible publications that reported on studies that assessed racially diverse adult cohort, compared eGFR with inclusion and exclusion criteria of BRM and or eGFR	Evidence-based approach, utilizing the BRM in creatine-based eGFR calculations	Of the remaining 86 studies, 12 focused on Indigenous populations; 30 studies focused on African and Brazilian populations and 54 focused on the accuracy of the equations on outcome	Level 1: Systematic literature review	Race was inadequately defined or described in the clinical studies included in the analysis	Yes. This study seeks to highlight the availability of data focused on the limited evidence to support BMR in eGFR calculations.
Article 8: Nwamaka Eneanya, L. B. (2022). Health inequalities and the inappropriate use of race in nephrology. *Nature Reviews | Nephrology, 18*, 84-94. Retrieved from www.nature.com/nrneph	To discuss the role of race and racism in medicine and outline concerns that have been raised by the medical and social justice communities	A collection of race and ethnicity data accessed through US government resources	Systematic literature review from 2007 to 2022	The use of Black race coefficient in eGFR equations contributes to health inequality for Black patients has not been	Level 1: Literature review	More research was needed to identify the mechanisms underlying the biological consequences of racism and its interplay with social	Yes. This literature review seeks to shed light on the controversy surrounding the role of race and racism in CKD outcomes

				universally accepted		determinants of health	
Article 9: Cane Smith, S. F. (2016). Using genetic technologies to reduce, rather than widen, health dwasparities. *ProQuest*, 1-11.	To bring awareness to the need for universally accessible technologies to expand genetic research, improve genetic literacy, and enhance access to genetic technologies to avoid harm such as stigmatization	Literature review of 47 research studies and publications	Systematic literature review from 1982 to 2016	People with non-European ancestries are underrepresented in genetic data bases due to the need for more funding toward minority-focused research	Level 1: literature review	This study focuses on underrepresented genetic databases and does not address disparity in the prevention or treatment of renal disease among non-Europeans	Yes. This review seeks to highlight variables that contribute to minority-focused research disparity increasing validity of healthcare disparity
Article 10: Ivy Maina, T. B. (2018). A decade of stydying implicit racial/ethnic bias in healthcare providers using the inplicit association test. *Social Science & Medicine, 199*, 219229. Retrieved from ttp://dx.doi.org/ 10.1016/j.socscimed.2017.05.009	To synthesize the current knowledge of the role of implicit bias in healthcare disparities	Literature review of 31 out of 37 qualified studies	Comprehensive literature search of the databases between 2015 and September 2016	31 research literary bodies of work found evidence of pro-white or light-skin/anti-Black, Hispanic, American Indian, or dark-skin bias among a variety of HCPs across multiple levels of training and disciplines	Level 1: Literature review	No noted study limitations	Yes. This study introduces the provider pro-White/light skin variable as evidence to support the awareness of non-European disparity
Article 11: Rama Ravi, G. A. (2020, September 30). Early detection of renal disease among truck drivers through organized screening. *Journal of Family Medicine and Primary Care*. doi:10.4103/fmpc_903_20	To evaluate the prevalence and was factors of chronic kidney disease.	Cross-sectional study population screening of 3,2000 truck drivers	A structured proforma used to obtain information regarding the diabetic and HTN status	A population of 3,200 truck drivers in Tamil Nadu for a period of 1 year in 2018.	Level 5: Single case study	The study was limited to truck drivers of a specific industry and to a specific geographical area	Yes. This study examines a focus group and the culture-specific geographic and occupational was factors, similar to that of the proposed scholarly project.

Article 12: Cara Litvin, P. N. (2019, June 10). Translating CKD research into primary care practice: a group-randomized study. *J Gen Intern Med, 35*(5), 1435-43. doi:10.1007/s11606-019-05353-4	To assess whether implementation of a primary care improvement model results in improved identification and management of CKD	18- month group randomized study examining 21 primary care practices in 13 US states caring for 107,094 patients	Study was conducted from Nov. 1, 2016, to April 30, 2018, within the PPRNet utilizing a developed CKD clinical quality measure	The results indicated significant improved care on 3 out of 11 clinical quality measures (CQMs)	Level 2: Group-randomized study	Incomplete adoption of improvement strategies may have limited further improvement	Yes. This study focused on CKD and patients managed by primary care which was central to the proposed scholarly project.
Article 13: Salmon Ahmed, M. M. (2020). Examining the Potential Impact of Race of Race Multiplier Utilization in Estimated Glomerular Filtration Rate Calculation on African - American Care Outcomes. *J Gen Intern Med, 36*(2), 464-471. doi:10.1007/s11606-020-06280-5	To examine the impact of the race multiplier for African Americans in the CKD-EPI eGFR equation on CKD classification and care delivery	A total of 56,845 patients in the Partners HealthCare System CKD registry in June 2019, among whom 2,225 (3.9%) was African American.	Included two large medical centers, participants provided informed consent, and the study was conducted to meet quality improvement research requirements	Of 2,225 African Americans patients, 745 (33.4%) would be reclassified to a more severe CKD stage without the use of a race multiplier	Level: 5 Cross-sectional study	The single healthcare system in the Northeastern United States, as well as the small African American patient sample, may limit generalization.	Yes. This study demonstrates a significant impact of race-adjusted eGFR on the care delivered to African American CKD patients, which directly supports the scholarly project's goal.
Article 14: Andrew Levey, S. T. (2020). Kidney Disease, Race, and Estimation. *Clinical Journal of the Association of Nephrology, 15*(8), 1203-1212. doi:doi: 10,2215/CJN.12791019:10.2215/CJN.12791019	Suggested the need for full disclosure when identifying non-African and African race, suggesting the two identifiers are vague and misrepresented the races.	A literature review of 75 references	The clinical opinion of the author	It was reasonable to continue the use of race modifiers until better methods are developed	Level 7: This report was the opinion of two nephrologist	This article represents the previous personal perspective of two nephrologist who do not address the origin of the use of rational modifiers	No. This article was in the defense of developing other GFR calculations moving forward while arguing the need for continued race modifiers based on the

							probability of adverse effects of discontinuation of race identifiers in calculating CKD- EPI creatinine equation that would be a disadvantage to the "blacks."
Article 15: Lundy Braun, A. W. (2020, November 23). Racialized algorithms for kidney functin: erasing social experience. *Social Science & Medicine*, 1135-48. Retrieved from http://doi.org?10.1016?j.socscimed.2020.113548	To examine the social-scientific processes by which one algorithm that "corrects" for kidney function in African Americans became central to knowledge production about chronic kidney disease	Literature review of 982 articles, of which forty-eight articles met inclusion criteria of racial comparison	Use of the theological frameworks of science and technology to analyze the socio-scientific processes by which the correction factor for kidney function became central to knowledge production about chronic kidney disease	Race correction was incompatible with evidence that race was a social formation.	Level 1: systematic literature review	Highlights the invisible processes by which race, and racism operate in societies.	Yes. The study seeks to determine the origin and or purpose of the race modifiers in treating renal disease
Article 16: Johnston, K., Lakzadeh, P., Donato, B., & Szabo, S. (2019). Methods of sampling size calculation in descriptive retrospective burden of illness studies. BMC Medical Research Methodology, 19(9), 7. Retrieved April 20, 2024, from https://doi.org/10.1186/s12874-018-0657-9	To develop recommended sample size calculations for ruse in retrospective studies	Review of sample size calculations for use in retrospective chart review research studies using a study for advanced melanoma	Utilized a real-world case study of a chart review of advanced melanoma to determine values for coefficient of variation (cv)	Determined sample sizes, any treatment given with greater than 1% frequency has a likelihood of being observed.	Level	No limitations acknowledged	Yes. This article provides guidance on sample size calculations, which was one of my research barriers

Article 17. Fortier, I., Raina, P., Heuvel, E. V., Griffith, L., Craig, C., Saliba, M., . . . Burton, P. (2017). Maelstrom Research guidelines for rigorous retrospective data harmonization. International Journal of Epidemiology, 103-115. doi:10.1093/ije/dyw075	To provide an overview of the profile of key international initiatives conducted from 2006 to 2015 and the approaches the use to harmonize data	Included phone survey, formal workshops, and a series of case studies between 2006 to 2015	Applied proposed research guidelines for achieving harmonious research data	Guidelines was developed from the results of the three integrated activities	Level 1: Systematic review	No limitations acknowledged	Yes. This article provides guidance on inter-relating research for retrospective studies
Article 18. Hounkpatin, H., Fraser, S., Honney, R., Dreyer, G., Brettle, A., & Roderick, P. (2020). Ethnic minority disparities in progression and mortality of pre-dialysis chronic kidney disease: a systematic scoping review. *BMC Nephrology, 21*(217), 14. Retrieved from https://doi.org/10.1186/s12882-020-01852-3	To identify and present findings from studies addressing ethnic differences and pre dialysis CKD progression and mortality	Included review 859 articles	Synthesis of existing literature on ethnic differences in progression and mortality for adults with pre dialysis CKD	This research study suggests higher rates of RT and ethnic minority groups may be due partly to increase was of progression and reduced mortality	Level 1 Systematic review	There was a need for a more structured approach by researchers that would allow higher confidence in single studies and better harmonization of data across studies	Yes. This article addresses existing literature on ethnic differences and progression and mortality while adults with pre dialysis CKD
Article 19. Patanwala, A. (2017, November 15). A practical guide to conducting and writing medical record review studies. Am J Health-Syst Pharm, 74(22), 1853-64. doi:10.2146/ajhp170183	A guide to conducting and reporting medical record review studies, including instruction and insights on topics ranging from idea conception to manuscript submission	The article was part of a series on research and published in an instructional guide form	Provides detailed information thar included the entire scope of conducting in	The quality of medical record review studies can be improved through adherence to recommended standards of research design, data collection and analysis, ethical authorship, and manuscript preparation	Level 1. The article was a systematic review, explanation, and instruction on writing medical record review studies	No limitations acknowledged	Yes. The use of This guide to conducting and reporting medical record review studies will assist in focusing the collection research data and relaying research findings effectively

Article 20. Maggie Horn, E. R. (2021). Electronic health record-integrated approach for collection of patient-reported outcome measures: a retrospective evaluation. BMC Health Services Research, 21(626), 11. Retrieved from https://doi.org/10.1186/s12913-021-06626-7	To report the development and preliminary evaluation of the standardized collection of PROMs within the department of orthopedic surgery at a large academic health center	Reported the mean response rate for the top 5 and bottom 5 orthopedic providers to describe the variability across 100 providers	Utilization of the Users' Guide to Interpreting Patient-Reported Outcomes in Electronic Health Records (HERs) by Gensheimer et al., 2018 as a framework to describe the development of PROMs collection initiative	Demonstrated that PROMs can be successful collected at scale through the EHR across a large department with seven clinical orthopedic specialties.	Level 2. Retrospective HER review	Further research us needed to elucidate the tradeoff between scalability and response rates in PROM collection initiatives	Yes, this original research study provides a reference source in collecting retroactive data for a treatment specific orthopedic department, similar to primary care
Article 21. Escamilla-Cabrera, B., SergioLuwas-Lima, Gallego-Valcarce, E., Sanchez-Dorta, N. V., Negrin-Mena, N., Diaz-Martin, L., . . . Rodriguez-Gamboa, M. J. (2024). The error of estimated GFR in predialysis care. *Scientific Reports, 14*(5219), 55022-8. Retrieved from https://doi.org/10.1038/s41598-024-55022-8	To analyze the error of a large group of formulas used in decision making for the initiation of dialysis	Utilized a cohort of 315 pre dialysis patients aged 18 >, GFR less than 30 ml/min, absent of uremic symptoms, clinical stability, absence of cardiovascular disease	examine errors between mGFR and eGFR calculation in pre-diabetic patients	prospective multi-center study	level 1: prospective multi-center study	The era of formulas in patients in pre-dialysis case was large, frequent, and random	Yes. This research article represents a need for unified practice in determining patience at was for renal disease for timely intervention
Article 22. Inker, L., Eneanya, N., Coresh, J., Tighiouart, H., Wang, D., Sang, Y., . . . Poggio, E. (2021, November 4). New Creatinine-and Cystatin C-Based Equations to Estimate GFR without Race. *The New England Journal of Medicine*, 1737-1749. doi:10.1056/NEJMoa2102953	To develop new eGFR equations without race and compare the new GFR equations to previously measured GFR	The participants comprised of two datasets: the first included 10 studies of 8254 participants and the second data set included 13 studies of 5352 participants	The study compared the accuracy of new GFR equations (without race) to measured GFR	New GFR equations that incorporate creatinine C what omit race are more accurate and led to smaller differences between Black and non-Black participants	Level: 1 systematic study	No limitations identified	Yes. This study directly examines the outcome of eliminating race with calculating GFR.

6. Appendices

6.1. Liberty University Review Board

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Date: 5-15-2024

IRB #: IRB-FY23-24-1896
Title: IMPROVED CLINICAL OUTCOMES DUE TO GFR BASED CLINICAL INTERVENTIONS FOR THE PREVENTION AND TREATMENT OF RENAL DISEASE AS IT RELATES TO THE VETERAN POPULATION MANAGED BY PRIMARY CARE
Creation Date: 5-8-2024
End Date:
Status: Approved
Principal Investigator: Sidneca Hazward
Review Board: Research Ethics Office
Sponsor:

Study History

Submission Type Initial	**Review Type** Exempt	**Decision** No Human Subjects Research

Key Study Contacts

Member Sidneca Hazward	**Role** Principal Investigator	**Contact** [redacted]
Member Sidneca Hazward	**Role** Primary Contact	**Contact** [redacted]
Member Kenneth Thompson	**Role** Co-Principal Investigator	**Contact** [redacted]

6.2 Organizational Letter of Support

elope ID: 57DAC90B-DA93-42E9-9C7F-CDDF1319C76B

North Florida South Georgia Veterans Health System
Nursing Shared Governance – Evidence Based Practice and Research Committee

*All Employee Survey (AES); Inpatient Evaluation Center (IPEC); VA Surgical Quality Improvement Program (VASQUIP); Survey of Healthcare Experiences of Patients (SHEP); External Peer Review Program (EPRP)

**Efforts should be made to reach out to your Program Office (National Surgery Office, Patient Care Services, etc.) regarding publication in peer-reviewed journals

Project Problem Statement

Please provide a description of the practice problem which has been identified in the NF/SG VHS which can be addressed through the project you are requesting permission to complete. The problem should be related to our population of Veterans, healthcare personnel, or healthcare operations. The problem statement should be no more than 2 paragraphs, explaining why this area of inquiry will be beneficial to the organization.

The "overall" quality goal of the DVA Malcolm Randall Medical Center is to be the preeminent tertiary hospital system and fulfill the mission: Honor America's Veterans by providing exceptional health care that improves their health and well-being (U.S. Department of Veteran Affairs, 2023). Renal disease is a life altering comorbidity that can be prevented through preventive primary care screening practices. Primary care preventive practices are supported by the Affordable Care Act, a U.S. health policy to emphasize disease prevention by mandating full coverage of approved preventive services. The MDRD GFR equation estimates glomerular filtration rate (eGFR) commonly used in primary care to measure patient factors to aid in the diagnosis and prevention of renal disease based on creatinine levels and patient characteristics. Currently the DVA reports eGFR under two patient characteristics, non-African and African. Under current DVA eGFR practice, the non-African Veteran patient would warrant further clinical management whereas the African American Veteran with an eGFR >60 would not meet further treatment intervention criteria, creating a system lead disparity in patient specific patient care (U.S. Department of Veteran Affairs, 2023).

The purpose of this practice initiative is to bring awareness to current clinical GFR modifier-based clinical intervention practices within the Department of Veteran Affairs to facilitate timely patient-specific clinical intervention practices focused on improved prevention, detection, and treatment of renal disease in the absence of traditional GFR modifiers. Without evolution of thought and education, questioning reasoning for perpetual clinical practice norms concerning GFR modifiers, may cause unintentional institutional harm, preventing timely and appropriate clinical intervention. Removing personal bias by performing routine self-assessments concerning depth of understanding of up-to-date clinical practice would promote self-assessment and decrease stagnation in personal clinical practice concerning the management of renal disease within the DVA (Hazward, 2023).
Hazward, S. (2023, June 13). AGACNP-BC, PCP, DNP. (S. Hazward, Interviewer) U.S. Department of Veteran Affairs. (2023, July 7). Strategic Plans. Retrieved from United States Department of Veteran Affairs Intranet: https://www.gainsville.va.gov

Agreement to Disseminate Findings

Completion of scholarly activities includes a responsibility to share findings with a community of interest. I agree that upon completion of this project, I will prepare a poster and/or presentation to disseminate the findings from this work at an appropriate venue within NF/SG VHS, as recommended by the EBP&R Committee.

Name Sidneca Evangella Hazward Signature [redacted]

Date 11/6/2023

Received by EBP&R Committee on 2/21/24

May 2018.ss and ds

Envelope ID: 57DAC90B-DA93-42E9-9C7F-CDDF1319C76B

North Florida South Georgia Veterans Health System
Nursing Shared Governance – Evidence Based Practice and Research Committee

Scholarly Project Authorization Form

I request permission to develop a practice project or research project at the North Florida/South Georgia Veterans Health System. Research projects must be submitted to the Internal Review Board for approval prior to submitting this authorization form.

Initials	Agreement
sh	1. Student projects may only be completed during non-duty hours, except for paid trainees who are completing projects as part of residency curriculum. Student projects must be supervised by a preceptor/mentor as described in the "Process for Completion of Student Projects" guidance.
sh	2. I understand it is my responsibility to communicate the project requirements outlined by my academic institution to my preceptor/mentor (for student projects only).
sh	3. Employee projects will be completed during work hours authorized by the supervisor of record.
sh	4. I have attached a problem statement and/or PICO question to be answered through this work (page 3).
sh	5. I have attached a copy of the signed QA/QI Guidance form (page 2).
n/a	6. For research projects: I have attached evidence of approval from the VA Human Research Protection Program (https://www.northflorida.va.gov/NORTHFLORIDA/Research/HRPP_New_Submission.asp) and the University of Florida Internal Review Board (http://irb.ufl.edu/myirb/registration-3rd.html)
sh	7. I have completed all the necessary steps to obtain a Without Compensation appointment, or have an approved Affiliation Agreement on file with the Affiliations Coordinator.
sh	8. I have attached a copy of the agreement to disseminate findings within the NF/SG VHS upon completion of the project.
	Student Signature: [redacted] DocuSigned by: 7363D1C0582E42...
	Project Supervisor Signature: [redacted] DocuSigned by: 74885A03EBD941E...

Approximate start date: 2/12/2024	Approximate completion date: 12/30/2024
Approval ☒ **granted** ☐ **denied on** 2/27/24 **by EBP Committee members present:**	
Name	**Signature**
Jennifer Rossi RN, BSN EBP and R Council Chair	[redacted] /24

Reason for decision, if denied:

May 2018.ss and ds

lope ID: 57DAC90B-DA93-42E9-9C7F-CDDF1319C76B

North Florida South Georgia Veterans Health System
Nursing Shared Governance – Evidence Based Practice and Research Committee

Improved clinical outcomes in the absence of GFR modifier-based clinical interventions for the prevention and treatment of renal disease for the at-risk Veteran population of the Department of Veterans Affairs Medical Center.

Project Title: _____
North Florida South Georgia Veterans Health System
Quality Improvement/Quality Assurance Guidance

In general, a quality improvement (QI) project does not require IRB review and approval because it is not research that is subject to the federal human subjects protection regulations. The following questions may be helpful in determining whether a proposed activity is a QI project and does not involve human subjects research. If all of the questions below can be answered as a **Yes, this is likely a QA/QI project.** If the answer to any of these questions is **NO, please consult with the UF IRB** through NF/SG Research Service (Lisa.Campbell3@va.gov) for assistance since IRB review may be required. An investigator or staff member may also request an authoritative determination from the IRB to confirm or assist with determining if an activity is research.

Project Description	YES	NO
Purpose Is the activity intended to improve the process/delivery of care while decreasing inefficiencies within a specific health care setting? [*Solely to fulfill operations need = non-research*]	x	
Scope Is the activity intended to evaluate current practice and/or attempt to improve it based upon existing knowledge?	x	
Evidence Is there sufficient existing evidence to support implementing this activity to create practice change?	x	
Clinicians/Staff Is the activity conducted by clinicians and staff who provide care or are responsible for the practice change in the institutions where the activity will take place?	x	
Methods Are the methods for the activity flexible and include approaches to evaluate rapid and incremental changes?	x	
Risk Is there no reasonable expectation of causing harm to patients?	x	
Sample/Population Will the activity involve a sample of the population (patients/participants/existing data) ordinarily seen in the institution where the activity will take place?	x	
Benefits Does not expand the knowledge base of a discipline.	x	

Project Lead Sidneca Evangella Hazward DocuSigned by: [redacted] 7383D1C0582E426... /6/2023

Service Chief DocuSigned by: [redacted] AD6C2EBBD053437... Date 2/12/2024

You must provide a fully signed copy of this form to your service chief and retain a copy with your project records.

Some examples of non-research activities are:

- VHA system redesign activities, benchmarking activities, etc.
- *AES, IPEC, VASQUIP, SHEP, EPRP, Medical Reviews
- Business planning and development, financial auditing

Publication of QA/QI in **peer-reviewed journals may require documentation by VHA Program Office or Facility Director.

May 2018.ss and ds

6.3 CITI Program Certification

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CITI PROGRAM

Completion Date 07-Mar-2024
Expiration Date 07-Mar-2027
Record ID 61641232

This is to certify that:

Sidneca Hazward

Not valid for renewal of certification through CME.

Has completed the following CITI Program course:

Social & Behavioral Research - Basic/Refresher
(Curriculum Group)
Social & Behavioral Researchers
(Course Learner Group)
1 - Basic Course
(Stage)

Under requirements set by:

Liberty University

CITI
Collaborative Institutional Training Initiative

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www.citiprogram.org

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