

# Identifying and Staging Chronic Kidney Disease (CKD) in Patients with Hypertension and Diabetes in Primary Care Through Pre-Visit Planning

## Clinical Problem

- The two leading causes of chronic kidney disease (CKD) are diabetes and hypertension
- Early identification and treatment of CKD can slow, or possibly prevent, progression to kidney failure
- It is vitally important that primary care providers recognize and treat CKD in the early stages
- CKD symptoms don't usually appear until the late stages and approximately 90% of patients are asymptomatic and 95% are stage 2 or 3

## Purpose

- Identifying and appropriately staging CKD in adult patients with diabetes and hypertension that have decreased GFR and/or elevated micro-albumin through an intervention of a pre-visit planning tool

## Objectives

- Design a CKD staging tool to aid primary care provider (PCP) to identify patients with hypertension, diabetes, decreased glomerular filtration rate (GFR), and/or elevated micro-albumin and to further evaluate these patients for CKD diagnosis
- Compare number of CKD diagnosis pre and post implementation to determine percent previously undiagnosed and potential benefit to larger implementation

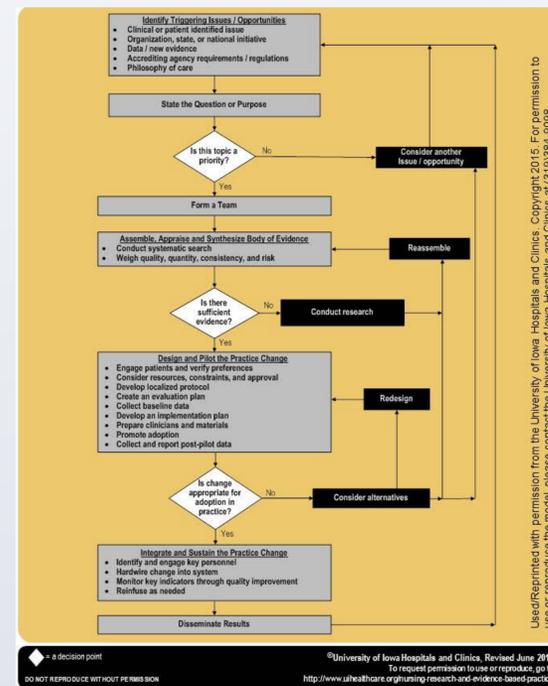
## Literature Review

### Key Findings

- Lower eGFR and more severe albuminuria independently predict mortality and ESRD (Astor, et al 2011)
- Treatment of CKD stages 1 to 3 with ACE or ARB lead to reduction in risk for ESRD (Fink, et al 2012)
- Screening for CKD is suggested to be cost-effective in patients with diabetes and hypertension (Komenda, et al 2014)
- Targeted screening identified a high proportion of individuals with risk factors for CKD and a high prevalence of unrecognized CKD (Gallbraith, et al 2016)

## Conceptual Framework

### Iowa Model of Evidence Based Practice to Promote Quality Care



## Measures

- Proportion of patients with CKD and their staging pre-implementation compared to post-implementation of pre-visit planning tool
- Diabetes and Hypertension registries reviewed for primary care practice to identify patients with CKD with and without diagnosis

## Intervention

- Use of pre-visit planning tool
- Record recent GFR and micro-albumin for patients with diabetes and hypertension
- Provider review lab data at routine office visit

## Procedure

- CNA will review provider schedules
- Patients will be called if any outstanding labs
- CNA will review labs for GFR and micro-albumin in past 3 months record on pre-visit planning tool
- Provider will see patient and determine if CKD is appropriate diagnosis
- Provider will update encounter and problem list with appropriate ICD 10 code

## Findings

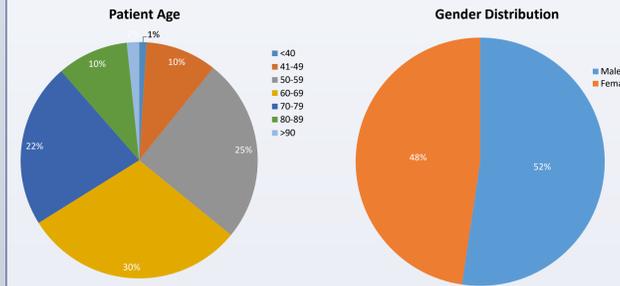


Figure 1. Demographics of study patients

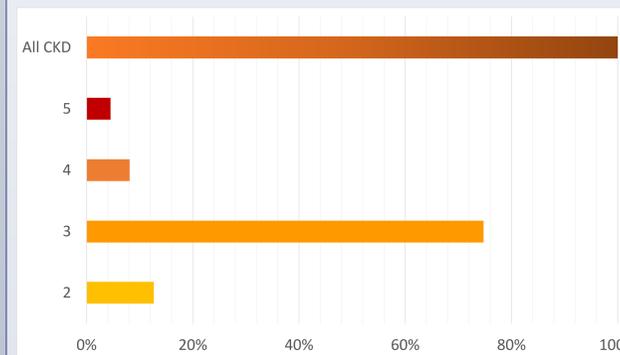


Figure 2. Distribution of stages of CKD in study patients

Table 1. Chi-square comparison of patients with CKD diagnosis prior to and post implementation of the pre-visit planning tool (N=226)

Variables	Pre-implementation (N=113)		Post-implementation (N=113)		P value*
	Frequency	Percentage	Frequency	Percentage	
CKD Diagnosis					0.001
CKD - Yes	75	66%	99	88%	
CKD - No	38	34%	14	12%	

\*Chi-square (1, N=226)=14.39, p=0.001

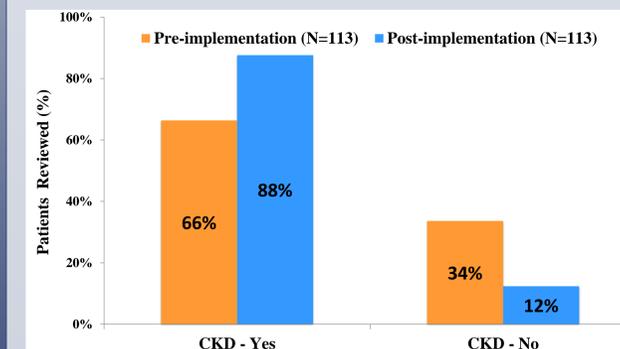


Figure 3 Comparison of percentage of patients with CKD diagnosis (N=226) pre and post implementation of the pre-visit planning tool

## Discussion

- Results support use of pre-visit planning tool to aid primary care providers to identify and properly stage CKD
- Identification of CKD can be properly managed in a primary care practice
- Patients with early stages of CKD do not have diabetes and hypertension under control with hemoglobin A1c <7.0 and blood pressure <140/90.
- Next phase is providing patients diabetes and hypertension control guidance and education

## Significance to Nursing Practice

- Primary Care Nurse Practitioners visits have the opportunity to identify and manage patients with CKD
- Early identification and management of CKD is key and will decrease risk of progression to ESRD
- Proper risk stratification of patients with chronic disease will increase CMS reimbursement

## Conclusion and Future Considerations

- Objectives of the study were met
- This study is statistically significant due to p score of 0.001
- Implement pre-visit planning tool in other primary care practices with eventual creation of Best Practice Advisory (BPA) in EPIC
- Disseminate findings at primary conferences through poster and podium presentations.

## Contact Information

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References available upon request