# Improved Identification and Co-Management of CKD Patients

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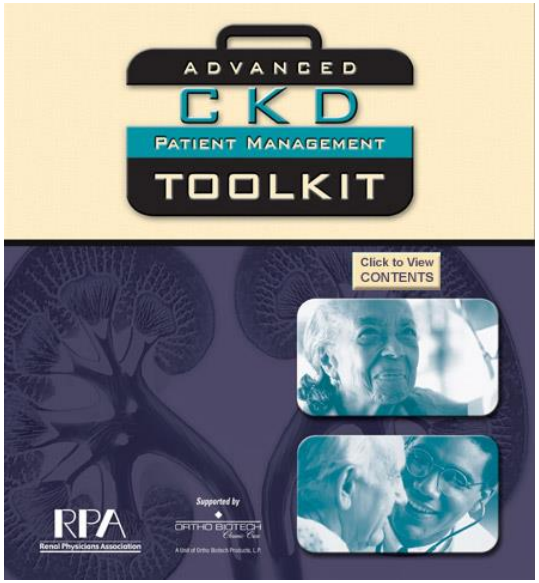
# Background




- Based on 2002 RPA CPG on Appropriate Patient Preparation for Renal Replacement Therapy
- Developed in 2004 (updated in 2006) to assist practitioners with implementing the CPG
- Series of 16 sets of tools organized as follows:
  - Assess
  - Tailor
  - Implement
  - Evaluate
- Assists nephrology practitioners with improving the management of stage 4 & 5 CKD patients not on RRT
- Field-tested in 10 real-world nephrology practice sites from 2008-2010

# Problem Addressed

- Early CKD identification allows for improved management and optimal care, which mitigates the risk of progression to advanced CKD and improves outcomes.
- Little is known about the issues, complexity, and extent of continuity of care across the important bridge of co-management of CKD between primary care (PCP), other non-nephrologists, and the nephrologist.
  - A meta-analysis confirmed numerous outcomes studies over this past decade showing poor outcomes manifest in CKD patients with late referral to Nephrologists (Chan, Am J Med 2007).
- The transition of care from PCP to nephrologist occurs at different points along the continuum of CKD and has been described as disorganized.
- It ***must*** occur by the time the patient is receiving renal replacement therapy, but when it ***should*** occur has been a matter of controversy and confusion; the latter being one of a number of potential barriers to improved communication and co-management of CKD patients.

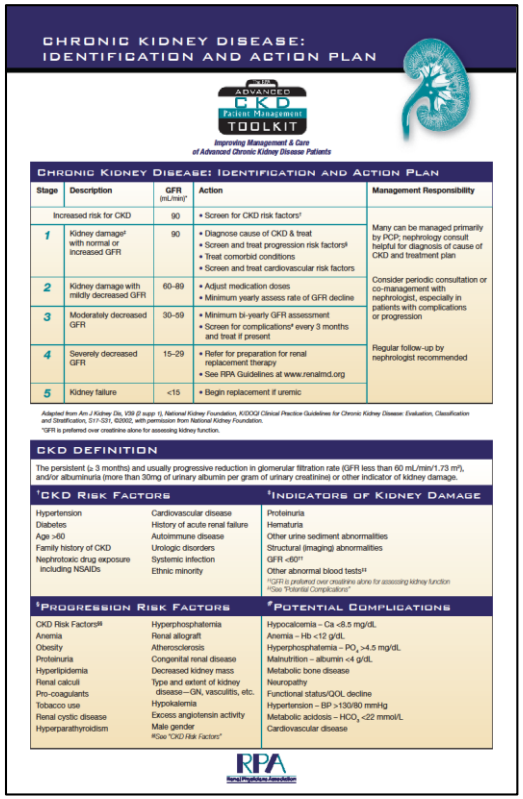
# Project Design

- Case studies of 5 nephrology practices and 9 associated PCP referring physician practices in Chicago and Philadelphia. Each site identified a lead physician and site champion.
- **Project hypothesis**: The use of specific tailored PCP tools will result in improved care as measured by improved identification of CKD patients and improved communication and satisfaction between nephrologists and PCPs.
- **Goals and specific aims**: Improve process of identification, improve communication between PCPs and nephrologists, improve the referral process, co-management and care of patients with CKD and improve satisfaction of all parties.

# Data Collection

- Baseline site visits
- Baseline and post questionnaires
- Baseline and post practice assessment (20 patient charts abstracted per each practice)
- Monthly site conference call worksheets: including tool usage, number co-management plans (letters) with specified duties, number of patients referred; barriers; tools customized/modified, process changes
- Pre and post structured interviews (avg. 32 minutes)

# Tools



CHRONIC KIDNEY DISEASE:
IDENTIFICATION AND ACTION PLAN

ADVANCED CKD PATIENT MANAGEMENT TOOLKIT

*Improving Management & Care of Advanced Chronic Kidney Disease Patients*

**CHRONIC KIDNEY DISEASE: IDENTIFICATION AND ACTION PLAN**

| Stage | Description | GFR (mL/min)* | Action | Management Responsibility |
|---|---|---|---|---|
| | Increased risk for CKD | 90 | • Screen for CKD risk factors† | Many can be managed primarily by PCP; nephrology consult helpful for diagnosis of cause of CKD and treatment plan |
| 1 | Kidney damage‡ with normal or increased GFR | 90 | • Diagnose cause of CKD & treat<br>• Screen and treat progression risk factors§<br>• Treat comorbid conditions<br>• Screen and treat cardiovascular risk factors | |
| 2 | Kidney damage with mildly decreased GFR | 60–89 | • Adjust medication doses<br>• Minimum yearly assess rate of GFR decline | Consider periodic consultation or co-management with nephrologist, especially in patients with complications or progression |
| 3 | Moderately decreased GFR | 30–59 | • Minimum bi-yearly GFR assessment<br>• Screen for complications# every 3 months and treat if present | |
| 4 | Severely decreased GFR | 15–29 | • Refer for preparation for renal replacement therapy<br>• See RPA Guidelines at www.renalmd.org | Regular follow-up by nephrologist recommended |
| 5 | Kidney failure | <15 | • Begin replacement if uremic | |

*Adapted from Am J Kidney Dis, V39 (2 supp 1), National Kidney Foundation, K/DOQI Clinical Practice Guidelines for Chronic Kidney Disease: Evaluation, Classification and Stratification, S17-S31, ©2002, with permission from National Kidney Foundation.*

*GFR is preferred over creatinine alone for assessing kidney function.

**CKD DEFINITION**

The persistent (≥ 3 months) and usually progressive reduction in glomerular filtration rate (GFR less than 60 mL/min/1.73 m²), and/or albuminuria (more than 30mg of urinary albumin per gram of urinary creatinine) or other indicator of kidney damage.

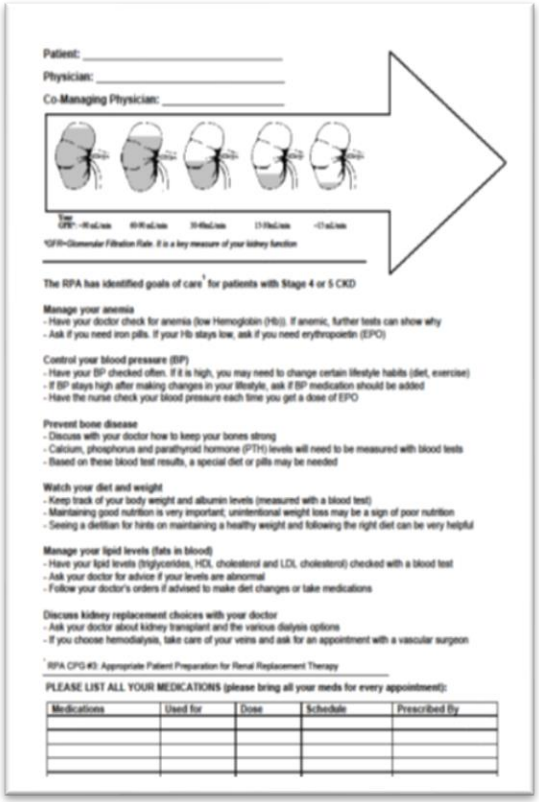
| †CKD Risk Factors | | †Indicators of Kidney Damage |
|---|---|---|
| Hypertension | Cardiovascular disease | Proteinuria |
| Diabetes | History of acute renal failure | Hematuria |
| Age >60 | Autoimmune disease | Other urine sediment abnormalities |
| Family history of CKD | Urologic disorders | Structural (imaging) abnormalities |
| Nephrotoxic drug exposure including NSAIDs | Systemic infection | GFR <60** |
| | Ethnic minority | Other abnormal blood tests†† |

**GFR is preferred over creatinine alone for assessing kidney function
*See "Potential Complications"

| §Progression Risk Factors | | #Potential Complications |
|---|---|---|
| CKD Risk Factors‡§ | Hyperphosphatemia | Hypocalcemia – Ca <8.5 mg/dL |
| Anemia | Renal allograft | Anemia – Hb <12 g/dL |
| Obesity | Atherosclerosis | Hyperphosphatemia – $PO_4$ >4.5 mg/dL |
| Proteinuria | Congenital renal disease | Malnutrition – albumin <4 g/dL |
| Hyperlipidemia | Decreased kidney mass | Metabolic bone disease |
| Renal calculi | Type and extent of kidney disease—GN, vasculitis, etc. | Neuropathy |
| Pro-coagulants | Hypokalemia | Functional status/QOL decline |
| Tobacco use | Excess angiotensin activity | Hypertension – BP >130/80 mmHg |
| Renal cystic disease | Male gender | Metabolic acidosis – $HCO_3$ <22 mmol/L |
| Hyperparathyroidism | *See "CKD Risk Factors" | Cardiovascular disease |

RPA Renal Physicians Association

- CKD Screening Protocol and Recommendation on When to Refer to Nephrologist
- CKD Identification and Action Plan poster
- Referring Clinician Fax Back Form
- CKD Post-consult Letter; Concise Guidelines
- CKD Chart Flag
- CKD Patient Diary



Patient: _____

Physician: _____

Co-Managing Physician: _____

*GFR=Glomerular Filtration Rate. It is a key measure of your kidney function

The RPA has identified goals of care† for patients with Stage 4 or 5 CKD

**Manage your anemia**
- Have your doctor check for anemia (low Hemoglobin (Hb)). If anemic, further tests can show why
- Ask if you need iron pills. If your Hb stays low, ask if you need erythropoetin (EPO)

**Control your blood pressure (BP)**
- Have your BP checked often. If it is high, you may need to change certain lifestyle habits (diet, exercise)
- If BP stays high after making changes in your lifestyle, ask if BP medication should be added
- Have the nurse check your blood pressure each time you get a dose of EPO

**Prevent bone disease**
- Discuss with your doctor how to keep your bones strong
- Calcium, phosphorus and parathyroid hormone (PTH) levels will need to be measured with blood tests
- Based on these blood test results, a special diet or pills may be needed

**Watch your diet and weight**
- Keep track of your body weight and albumin levels (measured with a blood test)
- Maintaining good nutrition is very important; unintentional weight loss may be a sign of poor nutrition
- Seeing a dietitian for hints on maintaining a healthy weight and following the right diet can be very helpful

**Manage your lipid levels (fats in blood)**
- Have your lipid levels (triglycerides, HDL cholesterol and LDL cholesterol) checked with a blood test
- Ask your doctor for advice if your levels are abnormal
- Follow your doctor's orders if advised to make diet changes or take medications

**Discuss kidney replacement choices with your doctor**
- Ask your doctor about kidney transplant and the various dialysis options
- If you choose hemodialysis, take care of your veins and ask for an appointment with a vascular surgeon

† RPA CPG #3: Appropriate Patient Preparation for Renal Replacement Therapy

**PLEASE LIST ALL YOUR MEDICATIONS (please bring all your meds for every appointment):**

| Medications | Used for | Dose | Schedule | Prescribed By |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
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| | | | | |

# Challenges

- Practice engagement
- Staff transitions
- Burden of paper charts
- Health insurance restrictions/patient transportation issues

# Results

The use of specifically tailored tools was associated with enhanced awareness and identification of CKD among PCPs, and led to increased communication and improvement in co-management and cooperation between PCPs and nephrologists.

- The overall rate of referral of CKD patients increased from 24% pre-implementation to 39% post-implementation.
- Blood pressure control by nephrologists in patients with advanced CKD was more prevalent post-implementation, with a greater proportion of CKD patients (57%) meeting goal (≤ 130 systolic and 80 diastolic)
- Serum phosphorus levels improved, with 78% at goal (≤ 4.5) post-implementation compared to 68% pre-implementation.
- Hemoglobin increased post-implementation with a decline in the percentage of those with Hb ≤ to 10.9 g/dl.
- Although there were too few practices to support a formal comparison, those PCP and nephrology practices consistently using all tools performed better in terms of achieving project goals or improvements than those who did not.

# Themes

Utilizing the grounded theory of qualitative analysis, the transcripts were reviewed by the qualitative expert for themes that emerged from the context of the transcribed narrative.

- Enhanced awareness and identification of CKD as compared with practices prior to completion of the study;
- Increased and enhanced communication between the practices among PCPs, nephrologists, and respective staff;
- Improved co-management practices between PCP and nephrology practices;
- Satisfaction levels with project participation;
- Increased awareness, through the project process and the use of toolkit materials, of recommended clinical guidelines, with resulting changes in care and referral patterns; and
- Individual variations in office practice, acceptance, modification and use of communication tools, including barriers to optimal tool use.

# Feedback

*I actually went to one of the offices and gave a lecture about CKD. I think it made us more aware that we have to be a little more explicit in our consult about what the goals of care are and what the targets are. It made us a little more cognizant as well about making sure the responsibilities are laid down. From a patient-centered stand point, I think we did a better job, as a result of this project, in patient education.* - Nephrologist

*I think we're looking for the lead with nephrologists about telling us this is the latest evidence-based way we should be managing things… I think a lot of primary care doctors are isolated in their practices with very little access to lectures given by nephrologists. I think the more they take the lead with educating and communication with primary care on expectations of management, the better.* - PCP site champion (physician)

*I almost wish there was something like this for other specialties as well. I feel pretty good about the way things are working with this in CKD patients. I think about other specialties. It would be nice to have a better communication system. Spread the word.* - PCP

*Certainly when I got more detailed consult letters I was definitely able to work more efficiently as far as what to do with the patient once they came back. Yes. That saved a lot of time. Yes. Certainly not having to track the doctor down, calling for progress notes and clarifying what the plan of action is, particularly the patient didn't understand what the plan was, I could show them the letter and say, "This is the plan."* - PCP

# Lessons Learned

- Engage all parties for feedback prior to beginning; learn their pain points
- Buy-in at all levels is critical to success
- Tools must fit into workflow

# Questions?

Improving Care Coordination Between Nephrology and Primary Care: A Quality Improvement Initiative Using the Renal Physicians Association Toolkit

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PlumX Metrics

DOI: https://doi.org/10.1053/j.ajkd.2014.06.031 | CrossMark

Article Info

Abstract | Full Text | References | Supplemental Materials

**Background**

Individuals at risk for chronic kidney disease (CKD), including those with diabetes mellitus and hypertension, are prevalent in primary care physician (PCP) practices. A major systemic barrier to mitigating risk of progression to kidney failure and to optimal care is failure of communication and coordination among PCPs and nephrologists.

**Study Design**

Quality improvement. Longitudinal practice-level study of tool-based intervention in nephrology practices and their referring PCP practices.

**Setting & Participants**

9 PCP and 5 nephrology practices in Philadelphia and Chicago.

**Quality Improvement Plan**

Tools from Renal Physicians Association toolkit were modified and provided for use by PCPs and nephrologists to

Haley WE, Beckrich AL, Sayre J, et al. Improving Care Coordination Between Nephrology and Primary Care: A Quality Improvement Initiative Using the Renal Physicians Association Toolkit. American Journal of Kidney Diseases. 2015;65(1):67-79. doi:10.1053/j.ajkd.2014.06.031.

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