

Connection Between Kidney Disease and Heart Disease

Matt Poffenroth, MD, MBA

VP, Inova Health System

Board Member, American Kidney Fund

Thanks to our speaker!



Dr. Matthew Poffenroth

- Chief Medical Officer for the Signature Partners Network at Inova Health System
- Experienced primary care physician
- One of his primary goals has been to help patients prevent and manage the common chronic diseases that can lead to kidney failure (diabetes, hypertension and cardiovascular disease)

Agenda

- Incidence of kidney disease
- Common risk factors for kidney disease and heart disease
- How kidney disease leads to heart disease, and vice versa
- Prevention and management of kidney disease and heart disease

Chronic Kidney Disease (CKD) as a Public Health Issue

- 26 million American affected
- Prevalence is 11-13% of adult population in the US
- 28% of Medicare budget in 2013, up from 6.9% in 1993
- \$42 billion in 2013
- Increases risk for all-cause mortality, cardiovascular mortality, kidney failure (ESRD), and other adverse outcomes
- 6-fold increase in mortality rate with diabetes+ CKD
- Disproportionately affects African Americans and Hispanics

ESRD, end stage renal disease

Chronic Kidney Disease (CKD) Risk Factors

Changeable

- Diabetes
- Hypertension
- History of acute kidney injury
- Frequent NSAID use (pain relief drugs, like aspirin or Aleve)
- Smoking

Not changeable

- Family history of kidney disease, diabetes, or hypertension
- Age 60 or older (GFR declines normally with age)
- Race/U.S. ethnic minority status

Cardiovascular Disease (CVD) Risk Factors

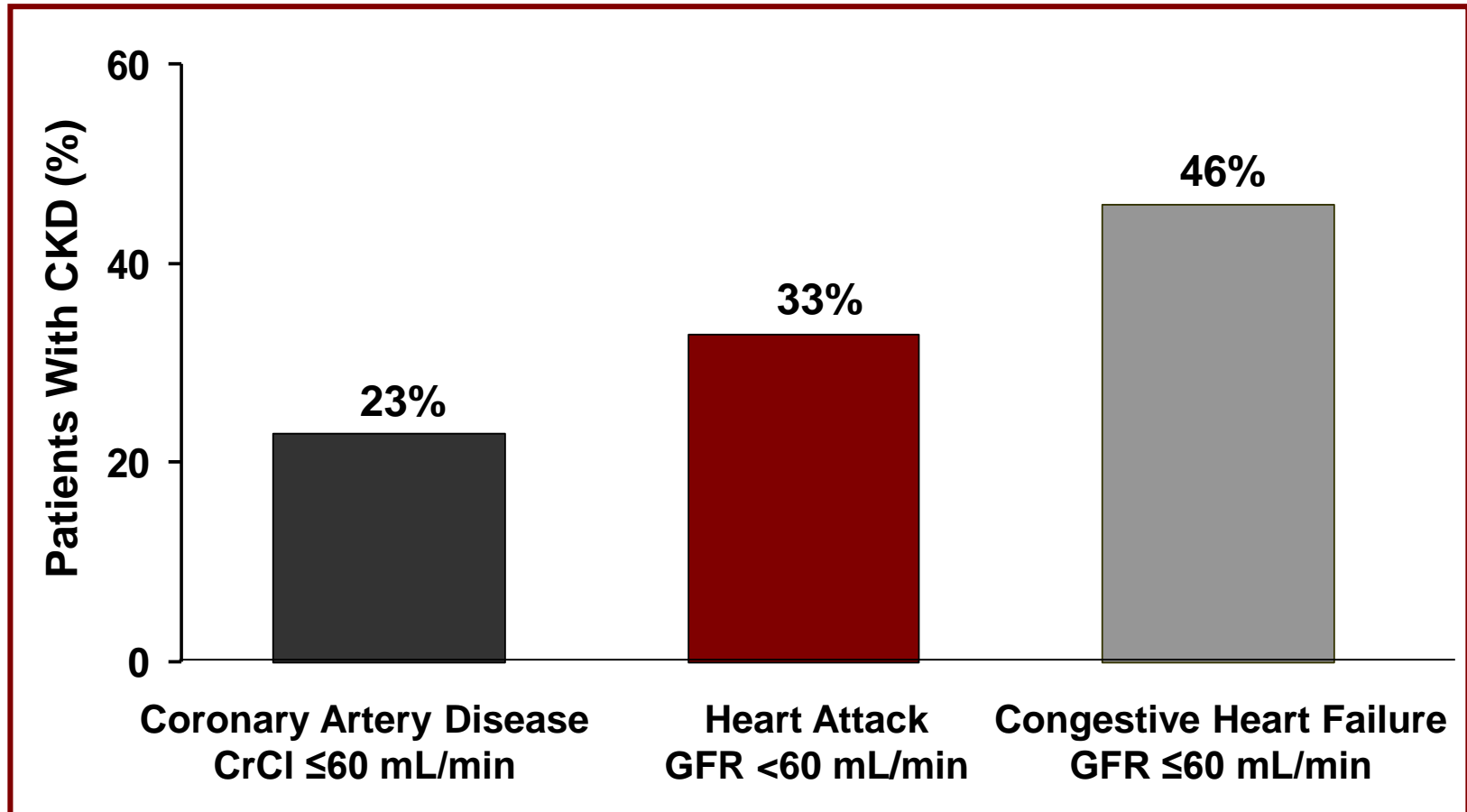
Changeable

- Diabetes
- Hypertension
- Smoking
- Elevated cholesterol
- Obesity
- **CKD**

Not changeable

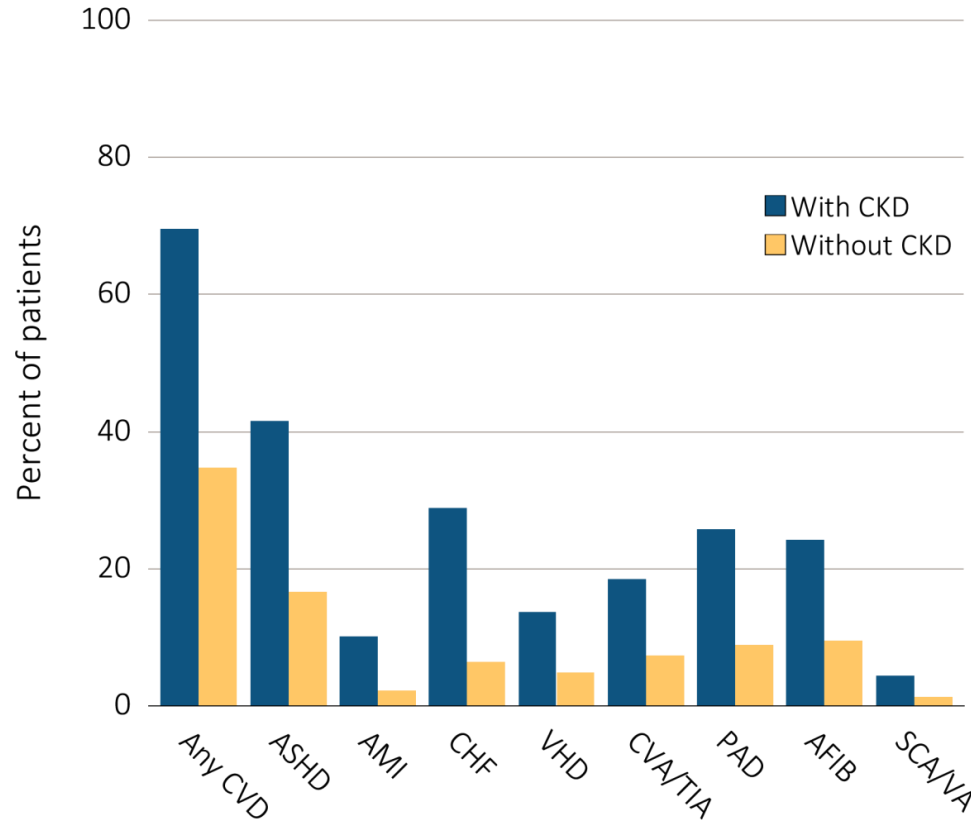
- Family history of heart disease
- Age
- Gender (male>female)
- **CKD**

CKD Prevalence in CVD



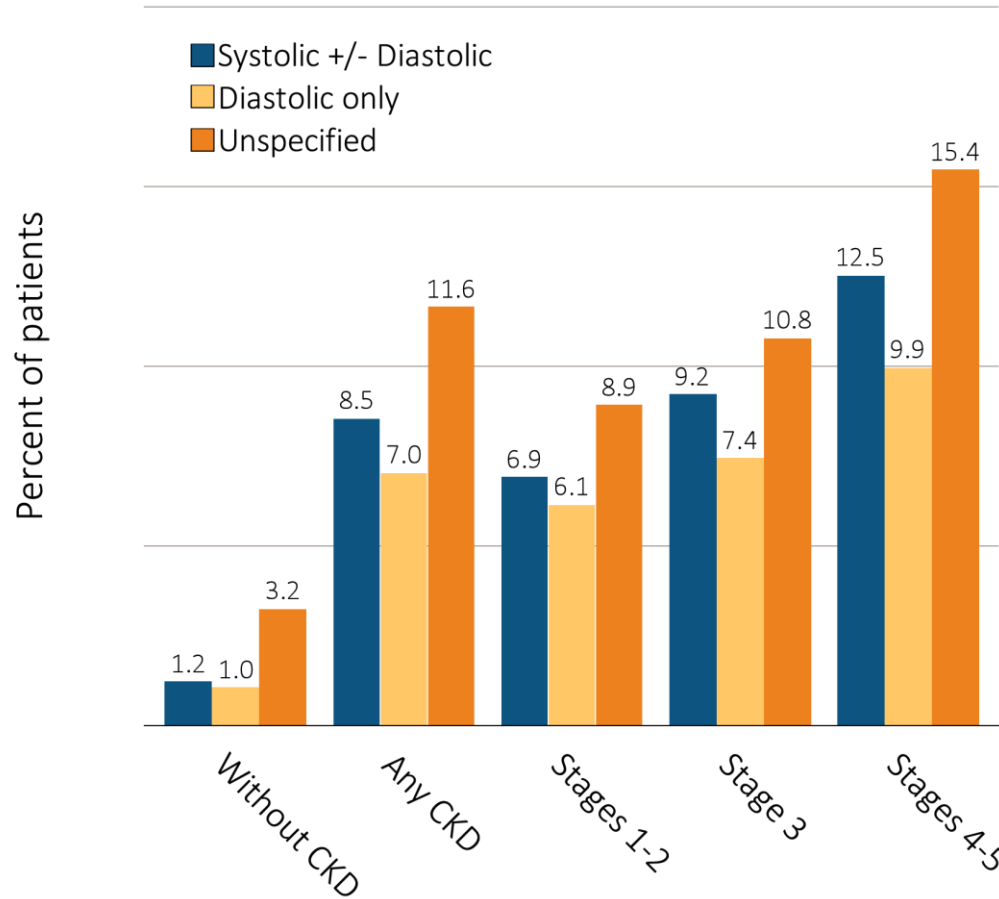
****Many patients with heart disease also have CKD**

CVD in patients with or without CKD, 2013



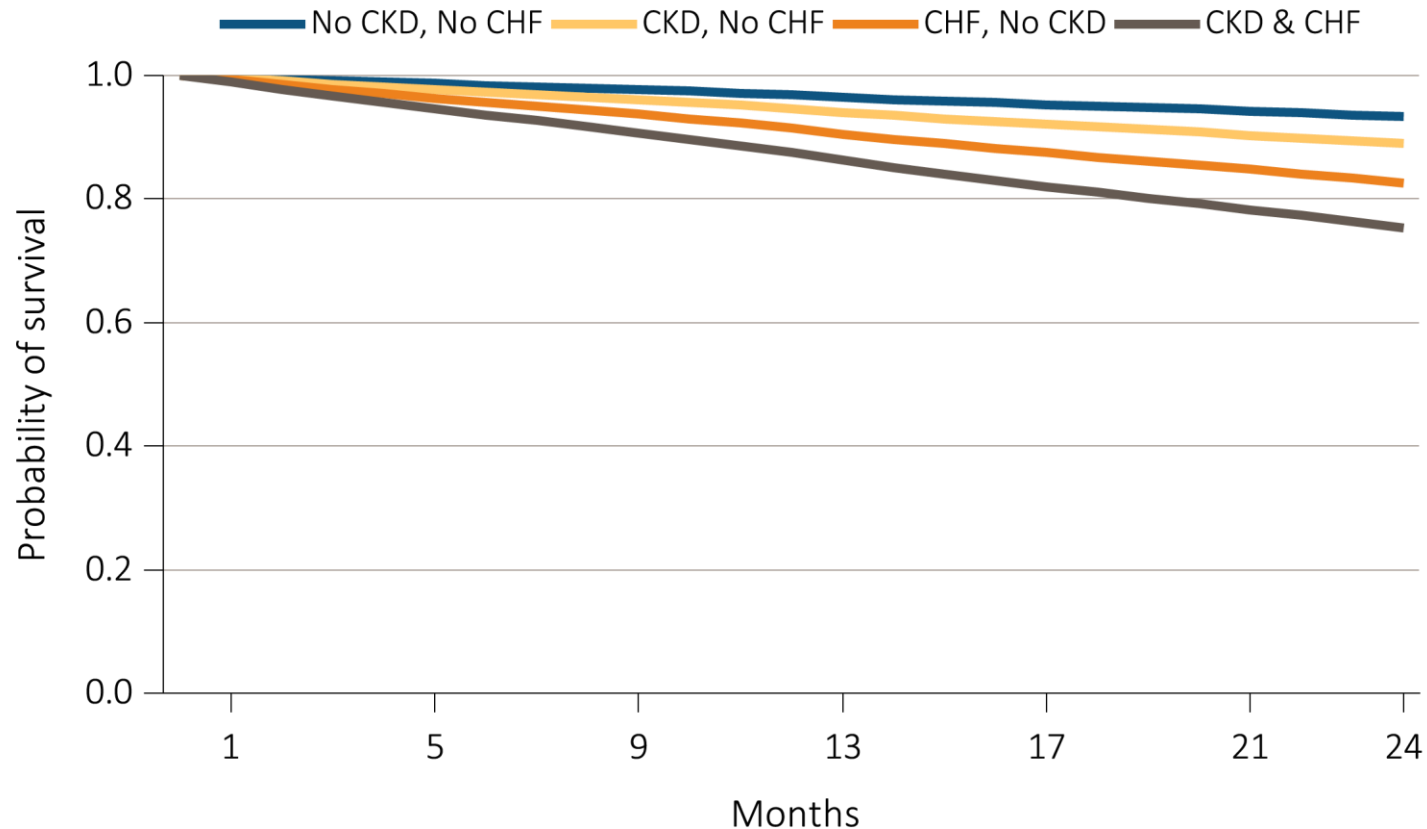
And many patients with CKD also have heart disease

Heart failure in patients with or without CKD, 2013



As CKD gets worse, your risk of developing heart failure increases

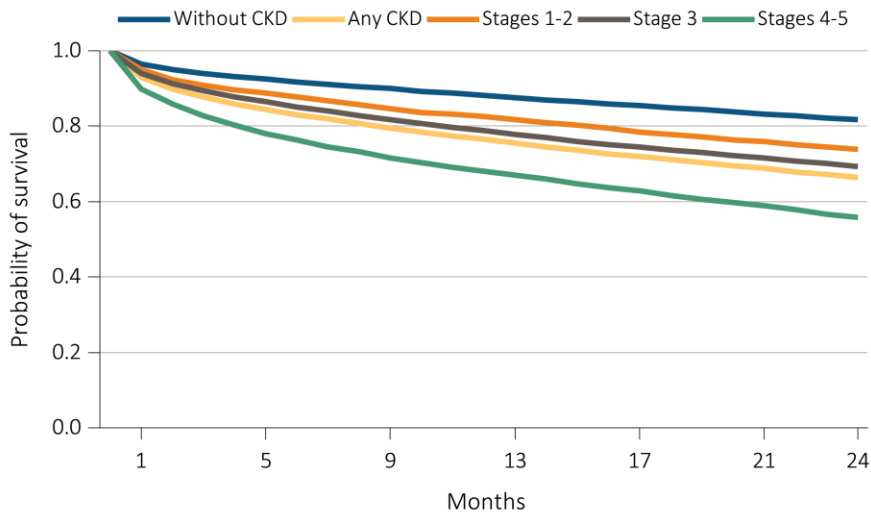
Adjusted survival of patients by CKD and CHF status, 2012-2013



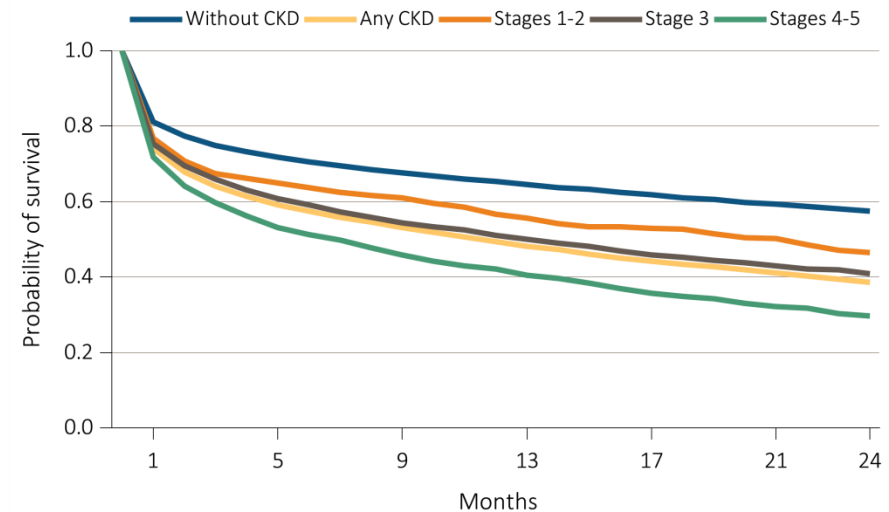
Patients with CKD and congestive heart failure (CHF) die sooner

Survival of patients with a cardiovascular diagnosis or procedure, by CKD status, 2011-2013

ASHD



AMI



For patients with both CKD and heart disease, as the kidney disease gets worse, you die sooner

How Does CKD Lead to Congestive Heart Failure (CHF)?

- High blood pressure and fluid overload strains the heart (leads to heart failure)
- Endothelial dysfunction (blood vessel cells)
- Inflammation
- Dyslipidemia (bad cholesterol elevated)
- Elevated phosphate levels
- Low vitamin D levels

Preventing CKD and CVD

“An Ounce of Prevention is Worth a Pound of Cure”

- Diet and exercise to maintain a healthy weight
- Smoking cessation
- Control diabetes
- Control blood pressure
- Control cholesterol
- Avoid excess over the counter pain medications (ibuprofen, Motrin, Aleve, etc.)
- Consider Vitamin D supplement
- **Regular check up with your Primary Care Physician**

American Heart Association Recommendations for Diet and Exercise

For Overall Cardiovascular Health:

At least **30 minutes of moderate-intensity** aerobic activity at least **5 days per week for a total of 150**

OR

At least **25 minutes of vigorous** aerobic activity at least **3 days per week for a total of 75 minutes**; or a combination of moderate- and vigorous-intensity aerobic activity

AND

Moderate- to high-intensity muscle-strengthening activity at least **2 days per week** for additional health benefits.

For Lowering Blood Pressure and Cholesterol:

An average **40 minutes of moderate- to vigorous-intensity** aerobic activity **3 or 4 times per week**

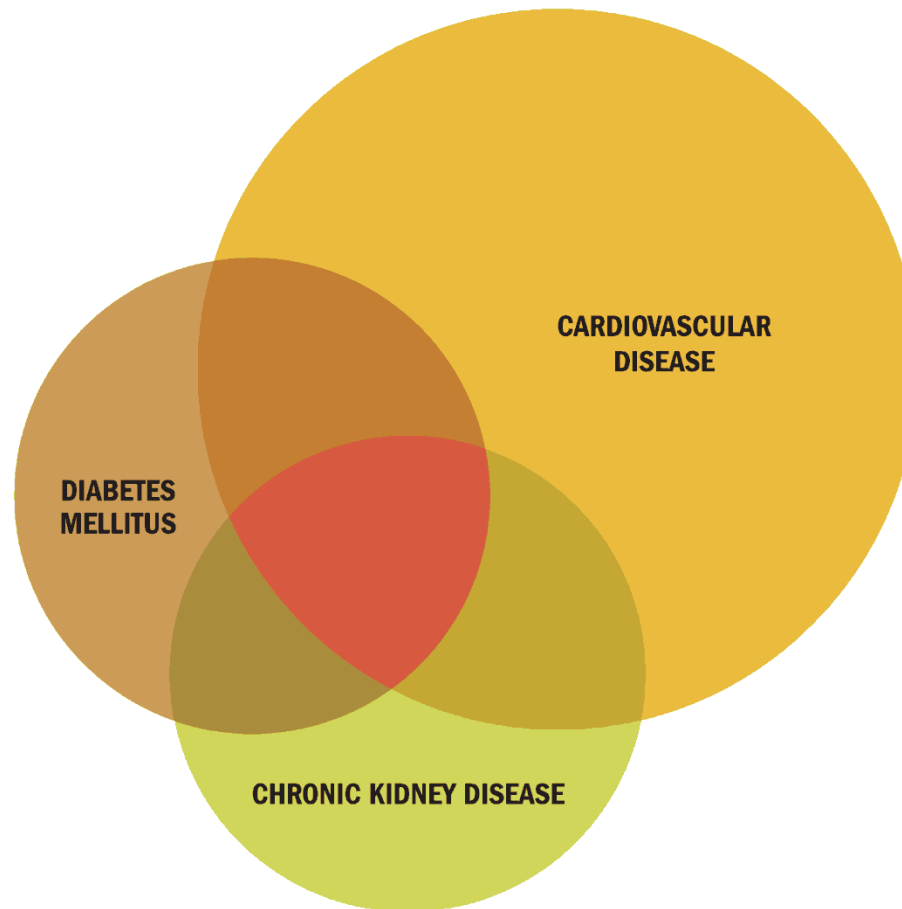
Diabetes Control

29 million people with diabetes and 89 million people with pre-diabetes in the US (2012)

- Diet and exercise to maintain healthy weight
- Medications if necessary to control blood sugars
- Medications to control cholesterol
- Target HbA1c < 7.0%

Regular visits with your doctor

CKD-CVD-Diabetes Link: CKD is a Disease Multiplier



Hypertension (High Blood Pressure) Control

78 million people with hypertension (1 in 3 adults) in the US (2013)

- Diet and exercise to maintain healthy weight
- Limit sodium in diet
- Smoking cessation
- Medications if necessary
 - Adults age <60: <140/90
 - Adults > 60 yrs: <150/90
 - All ages, diabetes and/or CKD: <140/90

Regular visits with your doctor

Cholesterol Control and CKD

Indications for medications (“Statins”)

- Adults > 50 years & CKD (any stage)
- Adults 18 – 49, any stage CKD, AND
 - Known coronary artery disease (CAD)
 - Diabetes
 - Prior stroke
 - Estimated 10 year incidence of heart attack >10%
- Adults with CKD on Dialysis – No Rx

Complications of CKD can Affect Heart Disease

- **Anemia** (low blood counts) can trigger chest pain (angina) and even heart attacks in patients with heart disease
- **High blood pressure** causes a strain on the heart and can lead to congestive heart failure
- **High calcium** and **phosphorus** levels can lead to hardening of the arteries

Key Take Away Messages

- CKD, CVD, diabetes and hypertension are all very common and related
- Lifestyle (diet, exercise, tobacco abuse) is the biggest risk factor, and the main treatment
- Prevention is key
- Regular visits with your primary care physician is important to screen for and manage these diseases

Thank You!

Questions?

Join us for next month's webinar!

A patient's perspective: Be your own advocate

Tuesday, March 28
1-2 p.m. (ET)

Join us to learn about:

- The meaning of being your own advocate in the healthcare setting
- Specific ways you can advocate for yourself as a dialysis/transplant patient



Eric Dolby, Sr.

- Patient advocate
- AKF 2012 Hero of Hope award recipient

Go to www.KidneyFund.org/webinars to learn more and register!