Hypertension

Goal BP < 130/80: ACEI &/or ARB for BP & proteinuria; manage hyperkalemia

Diabetes

Leading cause of kidney failure: goal HbA1C < 7.0

Heart Disease

CKD is an independent risk factor: goal LDL < 100, HDL > 40.

Kidney Function

Creatinine, age, sex, race → use MDRD-4 equation → estimated GFR; nephrology evaluation no later than GFR 30 ml/min/1.73 m^2

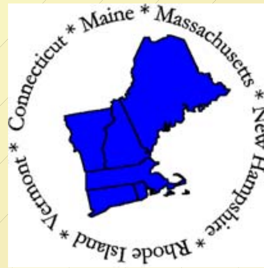
Proteinuria

More than 200 mg protein/gram creatinine or 30 mg albumin/gram creatinine is abnormal; monitor response to ACEI/ARB treatment.

Veins and vascular access

Teach CKD patients that dialysis catheters are to be avoided, and save the non-dominant arm early: no venipuncture, IVs, PICCs.

Coordinated & Comprehensive Care Can Improve CKD Outcomes



ESRD Network of New England
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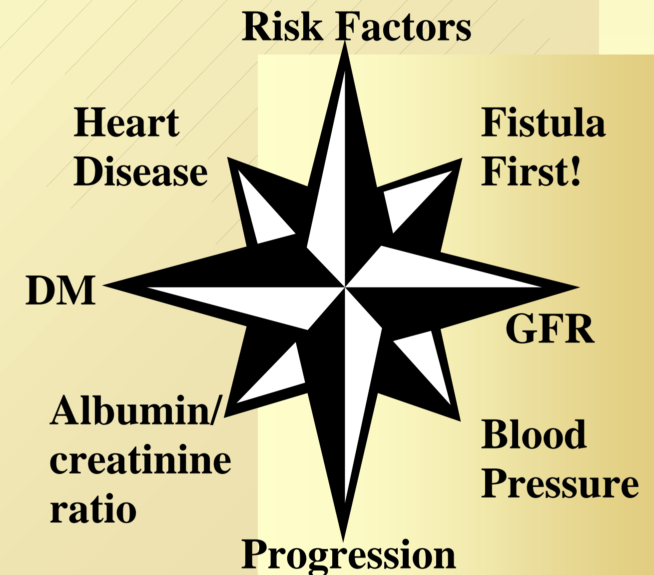
The ESRD Network of New England is a non-profit corporation holding the Medicare contract to oversee kidney failure treatment in Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont. The Network's mission is to facilitate the improvement of health care and quality of life for individuals who have chronic kidney disease and those treated with dialysis or transplantation.

Chronic Kidney Disease



A Pocket Guide for Primary Care Physicians

Chronic Kidney Disease (CKD)

Some 500,000 Americans have kidney failure requiring treatment by dialysis or kidney transplantation. More than 19 million, or about 11% of the US adult population, have some form of chronic kidney disease (CKD). While some patients with chronic kidney disease eventually need dialysis, most do not. CKD should also be of great concern to all physicians as a major risk factor for heart and vascular disease. Early detection and timely treatment of CKD can reduce cardiovascular disease and retard kidney function loss. For patients with progressive kidney function loss, coordination of care by the PCP and the nephrologist can reduce the morbidity of chronic kidney disease.

PCP Goals

- **Detect chronic kidney disease early.**
- **Treat reversible factors through improving cardiovascular outcomes.**
- **Slow CKD progression.**
- **Refer to the nephrologist in time.**
- **Preserve veins for vascular access**

Increased CKD Risk

- **Individuals aged > 60 years**
- **African Americans, Native Americans, Asian-Americans**
- **Patients with diabetes or hypertension**
- **Individuals with a family history of kidney disease**

At Risk → Screen Annually

- **Measure serum creatinine to estimate glomerular filtration rate (GFR) using 4 variable MDRD equation at: www.mdrd.com.**
- **GFR < 60 is always clinically important, especially in diabetics.**
- **Measure protein/creatinine ratio in those with proteinuria on dipstick, and microalbumin/creatinine ratio in individuals without proteinuria. More than 200 mg protein/gram creatinine or 30 mg albumin/gram creatinine is abnormal**
- **Anemia: Measure Hgb, goal 11-12g/dl**
- **Screen for bone disease: Measure Ca, Phos, PTH & Vitamin D levels-treat hyperphosphatemia & secondary hyperparathyroidism**

Blood Pressure

- **In presence of CKD or diabetes, blood pressure goal is 130/80 or less.**
- **In presence of CKD or diabetes, antihypertensive regimen should include ACE inhibitor and/or ARB; these may decrease GFR & increase K+. Continue Rx as long as the change in GFR is < 25% & K+ is <5.5 mEq/L.**

Nephrology Referral

- **Refer to the nephrologist no later than GFR 30 ml/min/1.73 m^2**
- **Refer earlier if diagnosis or optimal treatment is uncertain, if kidney disease is progressing rapidly, or if change in GFR or hyperkalemia stops ACEI/ARB treatment.**

General Medical Care

- **Remember that CKD is an independent risk factor for coronary disease: LDL goal <100, HDL > 40.**
- **Immunize patients with CKD against influenza, pneumococcus and hepatitis B.**
- **Avoid venipuncture and intravenous therapy in non-dominant arm, and don't use PICC lines. Saving veins saves lives.**
- **In CKD progressing to kidney failure, emphasize importance of early vascular access and the infections and mortality associated with dialysis catheters. (www.fistulafirst.org)**
- **Do not use phosphate preps for colonoscopy.**
- **Drugs to be used with special care in CKD: NSAIDS, COX-2 inhibitors, metformin, bisphosphonates, potassium sparing diuretics**

The Network of New England created this material under contract HHSM-500-2006-NW001C with the Centers for Medicare & Medicaid Services (CMS), an agency of the U.S. Department of Health and Human Services. The contents presented do not necessarily reflect CMS policy.

References and further information may be found in the clinical practice guidelines: www.kidney.org