Living Health Solutions

April 2021

# Chronic Kidney Disease (CKD) Screening & Referral Toolkit

# Headline

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# Overview

- This toolkit is intended to be a reference for those that are looking for guidance on screening and referral for their patients who may be at risk of CKD
- There are many risk factors that can contribute to CKD
- Early detection and timely referral may reduce onset and delay progression of CKD
- The intent of this guide is to aid in: (1) early identification of kidney function issues; (2) selecting a cadence for screening; and (3) referring patients to nephrology

Throughout this toolkit you will see this icon:  . It indicates that there is a source that is noted at the bottom of the slide and can be accessed for further information.

# Agenda

- CKD risk factors and severity
- Screening labs and guidelines
- CKD risk and management schedule
- Referral

# CKD Risk Factors and Severity

# Screen patients who have these risk factors

**Chronic**

Diabetes Type 2: screen at time of diagnosis then yearly
Diabetes Type 1: screen 5 years after diagnosis then yearly
Hypertension
Systemic disease with renal implications (RA, HIV, lupus, vasculitis, hyperuricemia, multiple myeloma)

**History**

Family history (first degree relative) of kidney disease
Personal history of Acute Kidney Failure

**Urologic**

Recurrent kidney stones
Recurrent urinary tract infections (>3 / year)
Other problems such as structural renal tract disease

**Medications**

High dose or chronic NSAIDs / Nephrotoxic agents

*Adapted from*


- Inker et al. KDOQI US Commentary on the 2012 KDIGO Clinical Practice Guideline for the Evaluation and Management of CKD. *Am J Kidney Dis*, 2014, **63**(5):713-735.
- https://www.niddk.nih.gov/health-information/kidney-disease/chronic-kidney-disease-ckd/what-is-chronic-kidney-disease
- Shlipak et al. The case for early identification and intervention of chronic kidney disease: conclusions from a Kidney Disease: Improving Global Outcomes (KDIGO) Controversies Conference. *Kidney International*, 2021, **99**:34-47.

# Serum creatinine: Classification by estimated Glomerular Filtration Rate (GFR)

| Category (CKD stage) | GFR (mL/min/1.73 $m^2$) | Terms* |
|---|---|---|
| 1 | ≥ 90 | Normal or high |
| 2 | 60-89 | Mildly decreased |
| 3a | 45-59 | Mildly to moderately decreased |
| 3b | 30-44 | Moderately to severely decreased |
| 4 | 15-29 | Severely decreased |
| 5 | < 15 | Kidney failure |

# Albuminuria: Classification by Albumin to Creatinine Ratio (ACR)

| Category | ACR (mg/g) | Terms* |
|---|---|---|
| A1 | < 30 | Normal to mildly increased |
| A2 | 30-300 | Moderately increased |
| A3 | > 300 | Severely increased** |

* The Terms used for each category are relative to a young adult's level
** Including nephrotic syndrome (albumin excretion ACR > 2,220 mg/g)

*Adapted from* Kidney Disease: Improving Global Outcomes (KDIGO) CKD Work Group. KDIGO 2012 clinical practice guideline for the evaluation and management of chronic kidney disease. *Kidney Inter Suppl*, 2013, **3**:1-150.

# Screening Labs and Guidelines

# Screening labs

It is recommended that CKD screening and risk stratification must consist of a dual assessment of GFR and ACR. A duration of 3 months between tests is required to confirm CKD diagnosis.
*from* Inker et al. KDOQI US Commentary on the 2012 KDIGO Clinical Practice Guideline for the Evaluation and Management of CKD. *Am J Kidney Dis*, 2014, **63**(5):713-735.

## Basic Metabolic Panel (BMP), Comprehensive Metabolic Panel (CMP), or Renal Function Panel (RFP)

- Check GFR
- If < 60, evaluate if urgent nephrology care is needed; if not, retest in 3 months – see Guidelines slide for more information
- Two tests are required to confirm CKD diagnosis
- For CKD management, see CKD Risk and Management Schedule slide for more information

## Urinalysis for albuminuria (ACR)

- If after 1 test, ACR is greater than 300 mg/g, refer to nephrology
- If ACR is 30-300 mg/g, retest in 3 months – see Guidelines slide for more information
- Two abnormal test are required to confirm CKD
- For CKD management, see CKD Risk and Management Schedule slide for more information

# Guidelines: Screen at-risk patients annually

**When you screen, order both:**

- BMP/CMP/RFP to get GFR
- Urinalysis to get ACR

**eGFR**

- If > 60, continue to screen annually
- If < 60, suspect CKD and retest in 3 months
  - If confirmed and ≥ 45, begin CKD management per CKD Risk and Management Schedule slide
  - If confirmed and < 45, refer to Nephrology
  - If not confirmed (i.e. > 60), continue to screen annually

**ACR**

- If < 30 mg/g, continue to screen annually
- If > 300 mg/g, refer to Nephrology
- If between 30 - 300 mg/g, suspect CKD and retest in 3 months
  - If confirmed, diagnose as Probable CKD and order a BMP
    - If eGFR < 45, refer to Nephrology
    - If eGFR ≥ 45, begin CKD management per CKD Risk and Management Schedule slide
  - If not confirmed (i.e. ACR < 30 mg/g), continue to screen annually



*modified from* Kidney Disease: Improving Global Outcomes (KDIGO) CKD Work Group. KDIGO 2012 clinical practice guideline for the evaluation and management of chronic kidney disease. *Kidney Inter Suppl,* 2013, **3**:1-150. The modification involves referring patients at Stage 3b vs the source material, which recommends at Stage 4.

# CKD Risk and Management Schedule

# CKD Risk and Management Schedule*

## CKD Risk Map

**Prognosis of CKD by GFR and Albuminuria Category**

| eGFR Category (GFR in mL/min/1.73 m²) | | | | Albuminuria Category (ACR in mg/g) | | |
|---|---|---|---|---|---|---|
| | | | | A1 | A2 | A3 |
| | | | | Normal to Mildly increased | Moderately increased | Severely increased |
| | | | | < 30 mg/g | 30-299 mg/g | > 300 mg/g |
| | G1 | Normal or high | ≥90 | Monitor 1X yearly | Monitor 1X yearly | Refer |
| | G2 | Mildly decreased | 60-89 | Monitor 1X yearly | Monitor 2X yearly | Refer |
| | G3a | Mildly to moderately decreased | 45-59 | Monitor 2X yearly | Monitor 2X yearly / Refer* | Refer |
| | G3b | Moderately to severely decreased | 30-44 | Refer | Refer | Refer |
| | G4 | Severely decreased | 15-29 | Refer | Refer | Refer |
| | G5 | Kidney failure | <15 | Refer | Refer | Refer |

### Color key

| | |
|---|---|
| | Low risk (if no other signs, no CKD) |
| | Moderately increased risk |
| | High risk |
| | Very High Risk |
| | Highest Risk |

**Monitor:** Management in primary care could continue without referral to nephrology. Monitoring is suggested either 1X or 2X yearly per the table.
**Refer*:** Referral to nephrology should be *considered.* eConsult or other remote consultation may be appropriate prior to referring the patient.
**Refer:** Referral to nephrology is *recommended.*

*** These are general guidelines. Clinicians should use their discretion and individualize as needed for their patients.**



*modified from* Kidney Disease: Improving Global Outcomes (KDIGO) CKD Work Group. KDIGO 2012 clinical practice guideline for the evaluation and management of chronic kidney disease. *Kidney Inter Suppl,* 2013, **3**:1-150. The modification involves referring patients at Stage 3b vs the source material, which recommends at Stage 4.

# Referral

# Refer to nephrology

- Acute Kidney Infection or abrupt sustained fall in GFR;
- If eGFR <45 (stage 3b) per guidance on prior slides;
- A consistent finding of significant albuminuria (ACR > 300 mg/g or Albumin Excretion Rate > 300 mg/day; approximately equivalent to Protein to Creatinine Ration > 500 mg/g or Protein Excretion Rate > 500 mg/24 hours);
- Progression of CKD = Sustained decline in eGFR > 5 mL/min/1.73 $m^2$ per year;
- Urinary red cell casts, red blood cell > 20 per high power field sustained and not readily explained;
- CKD and hypertension refractory to treatment with 4 or more anti-hypertensive agents;
- Persistent abnormalities of serum potassium;
- Recurrent or extensive nephrolithiasis;
- Hereditary kidney disease

*from*


- Inker et al. KDOQI US commentary on the 2012 KDIGO clinical practice guideline for the evaluation and management of CKD. *Am J Kidney Dis*, 2014, **63**(5):713-735.
- Kidney Disease: Improving Global Outcomes (KDIGO) CKD Work Group. KDIGO 2012 clinical practice guideline for the evaluation and management of chronic kidney disease. *Kidney Inter Suppl,* 2013, **3**:1-150.

# Additional referral resources

CKD patients often have comorbidities, such as hypertension and diabetes

If your patients have access to local chronic care clinics focused on these comorbidities, your patients might benefit from a referral to these clinics

https://www.niddk.nih.gov/health-information/kidney-disease/chronic-kidney-disease-ckd/what-is-chronic-kidney-disease

# Appendix

**The following contents are available to all Providers**

- Kidney Smart
- Palliative Care Resources

# Kidney Smart

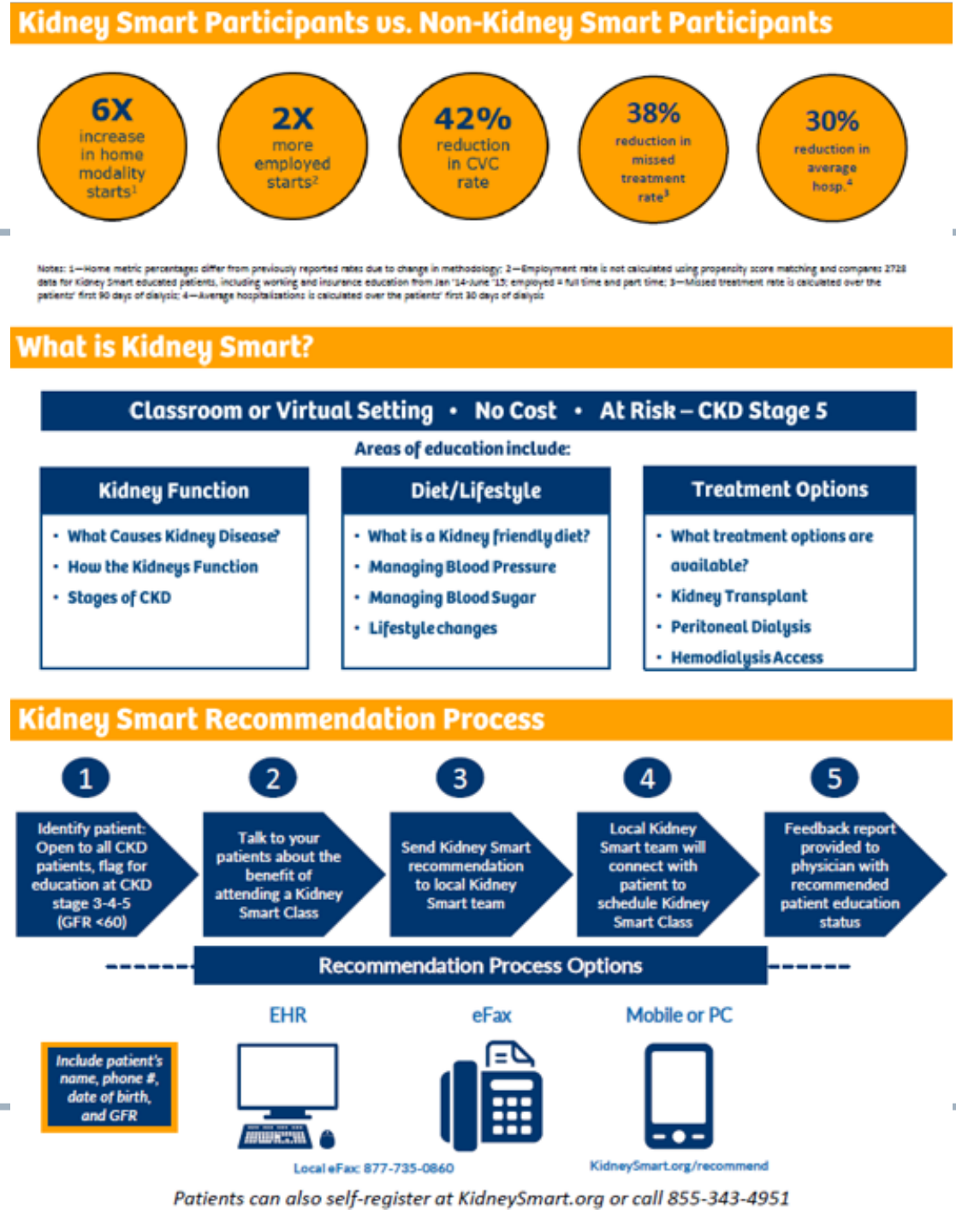
Kidney Smart is a non-branded CKD education class that anyone can sign up for and take for **free**

Participants will learn about:

- Causes of kidney disease
- CKD basics and lifestyle choices
- Basic diet and nutrition information
- Insurance and employment options
- Treatment options

A Kidney Smart 1-page flyer is to the right:

from DaVita Kidney Care
see https://www.davita.com/education/kidney-smart-classes



# Palliative Care Resources

- What is Palliative Care? (www.getpalliativecare.org - with links to handouts for patients and families)
- General Palliative Care criteria - www.getpalliativecare.org/resources/clinicians/
- UCSF prognosis calculator - https://eprognosis.ucsf.edu/calculators/#/
- PA POLST - https://www.papolst.org/
- Center to Advance Palliative Care (CAPC) - https://www.capc.org/
- VITAL Talk – Clinician Communication - https://www.vitaltalk.org/
- Palliative Care Fast Facts - https://www.mypcnow.org/fast-facts/
- Advance Care Planning Billing Codes and Guide - https://respectingchoices.org/wp-content/uploads/2018/09/RC_5009_ACP_Billing_Resource_Guide_09.19.18.pdf