Ontario Renal Network

Development, Implementation and Evaluation of the KidneyWise Clinical Toolkit for Chronic Kidney Disease in Primary Care

Allan Grill MD, CCFP, MPH, Monisha Bhatt B.Com, Andriana Lukich, MBA, Scott Brimble MD, MSc, FRCP(C)

Kidney Wise
Detect + Protect

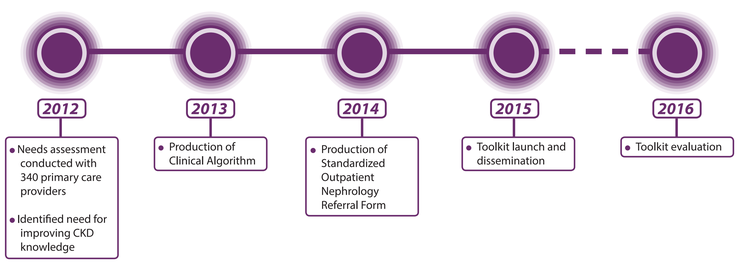
BACKGROUND

The KidneyWise Clinical Toolkit provides guidance to primary care providers (PCPs) on which patients are at high risk of developing chronic kidney disease (CKD), and recommends how to properly diagnose and best manage the patient to reduce the risk for further disease progression.

The KidneyWise Clinical Toolkit includes:

- An evidence-based **Clinical Algorithm** that helps with identification, detection, and management of patients with CKD and guidance on which patients may benefit from referral to a nephrologist.
- An **Evidence Summary** that offers further clinical detail regarding the algorithm content, including references to clinical guidelines that were used in the development of the toolkit.
- A **Standardized Outpatient Nephrology Referral Form** that provides referral guidance by outlining clinical scenarios that would require consultation, including the appropriate investigations that should accompany the referral.

DEVELOPMENT



Clinical Algorithm was adapted from a publication on a study that looked at nephrology referral patterns at The Ottawa Hospital (Akbari et al., 2012). A literature review of the following guidelines was completed and referenced in the development of the KidneyWise Clinical Toolkit:

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Feedback was solicited from nephrologists and primary care providers using an iterative process. The Toolkit has been vetted and endorsed by nephrology and primary care leaders within Ontario and across Canada.

ALGORITHM

Identification, Detection, and Management of CKD in Primary Care

IDENTIFY

Identify patients in your practice with elevated risk of CKD based on the following:
- Hypertension
- Diabetes mellitus
- Age 60–75 with cardiovascular disease (CV)

DETECT

- CKD detection should be done in the absence of acute intercurrent illness. Low eGFR (estimated Glomerular Filtration Rate) in such scenarios may reflect acute kidney injury and require more rapid evaluation
- Test with eGFR and urine ACR (Albumin to Creatinine Ratio)
- Note: eGFR calculation needs to be adjusted for black patients (multiply eGFR by 1.21)
- If eGFR < 60ml/min/1.73m², repeat test in 3 months, or sooner if clinical concern dictates (i.e. rapid decline from previous eGFR result or very low eGFR)
- If urine ACR ≥ 3mg/mmol on initial testing, repeat 1 or 2 more times over the next 3 months (at least 2 out of 3 random urine ACRs must be elevated in order to be considered abnormal)
- Always consider reversible causes prior to re-testing (e.g. recent treatments with NSAIDs, recent use of contrast dye for diagnostic imaging, BPH/urinary retention)

Results after 3 months

Box A — eGFR < 30 or ACR > 60
- Patient has CKD
- Based on above parameters, consider seeking consultation from nephrology

Work-up
- For low eGFR: Urine R+M, CBC, electrolytes, Ca, PO_4^{3-}, Albumin, PTH
- For albuminuria: Urine R+M, electrolytes

Box B — eGFR 30–59 and/or ACR 3–60
- Patient has CKD
- See Manage box below for management
- Check urine R+M, electrolytes
- **Follow eGFR & urine ACR every 6 months**

Box C — eGFR ≥ 60 and ACR < 3
- Patient does **not** have CKD
- Re-test annually for patients with diabetes, less frequently otherwise, unless clinical circumstances dictate more frequent testing

- eGFR < 60 and decline ≥ 5ml/min within 6 months (confirmed on repeat testing within 2 to 4 weeks), or
- eGFR < 30 or ACR > 60, or
- eGFR < 45 and urine ACR between 30 and 60 on 2 occasions, at least 3 months apart
- Inability to achieve blood pressure targets, or
- Significant K^+ disorder, RBC casts or hematuria (> 20 RBC/hpf)

- If eGFR stable for 2 years, **follow eGFR and urine ACR every 12 months**

REFER TO NEPHROLOGIST While waiting for consultation, see MANAGE box below for management

MANAGE

Implement measures to modify CV risk factors
- Lifestyle modification, smoking cessation
- Lipid management for patients with CKD (see KDIGO guidelines for further details):
  - **If with diabetes, age >18 → treat with a statin***
  - **If without diabetes, age ≥ 50 → treat with a statin***
  - **If without diabetes, age 18–49, has known coronary artery disease, prior stroke, or 10-year Framingham risk >10% → treat with a statin***
- For patients with diabetes, target HbA1c to appropriate level (see CDA guidelines)

*Contraindications: active liver disease, high alcohol consumption or pregnancy. Women with childbearing potential should only use a statin if there is reliable contraception.

Minimize further kidney injury
- If possible, avoid nephrotoxins such as NSAIDs, IV and intra-arterial contrast, etc. (if eGFR < 60)
- If contrast is necessary, consider oral hydration, withholding diuretics
- Refer to Sick Day Medication List (see Evidence Summary)

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Implement measures to slow rate of CKD progression
BP and RAAS blockade (repeat creatinine and potassium 2 weeks after initiation of ACEI or ARB use):
- If with diabetes, target BP < 130/80, otherwise target BP < 140/90
- If with diabetes and with ACR > 3, start use of an ACEI or ARB as first-line therapy. If BP already < 130/80, use ACEI or ARB cautiously, monitoring for signs and symptoms of hypotension
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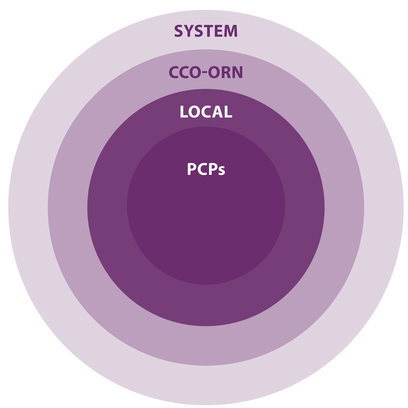
IMPLEMENTATION

Approach to Dissemination and Engagement:

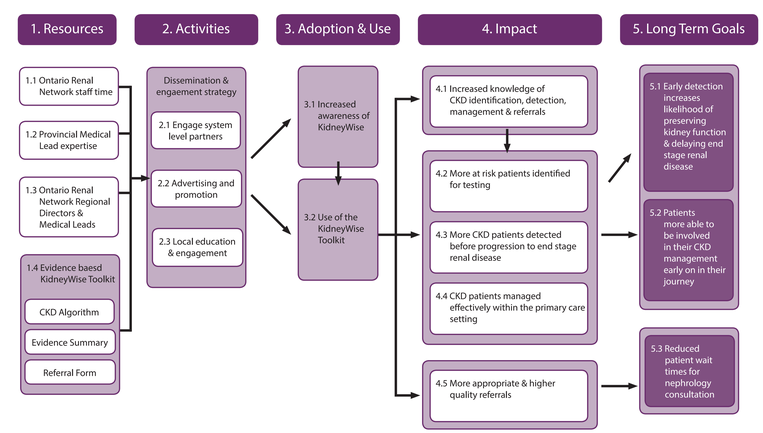


Dissemination Tactics:

SYSTEM	CCO-ORN	LOCAL
• Engage system-level primary care leaders • Partner with other chronic disease groups • Partner with other jurisdictions	• Conference road show • Advertorials • Email blasts • Hard copy distribution • Social media	• LHIN engagement • Site visits • Local workshops and seminars • Nephrology community engagement

EVALUATION

KidneyWise Clinical Toolkit Project Logic:



Evaluation activities are underway to evaluate the impact of the Toolkit on adoption and use.

To access the KidneyWise Clinical Toolkit, please visit kidneywise.ca. You can also download our KidneyWise App available for iPhone and Android.

Any questions? Please email us at: **kidneywise@renalnetwork.on.ca.**

Ontario
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Vector file missing

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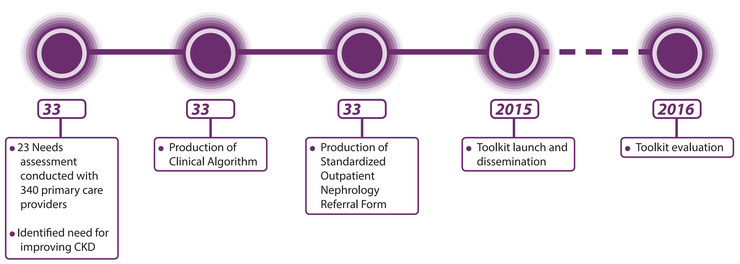

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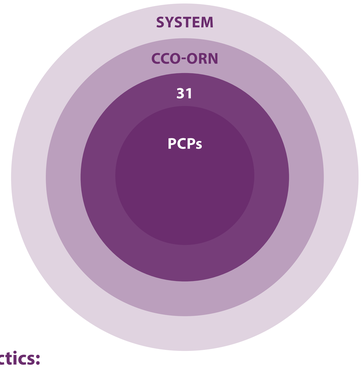

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Partner with other chronic disease groups	Advertorials	Site visits
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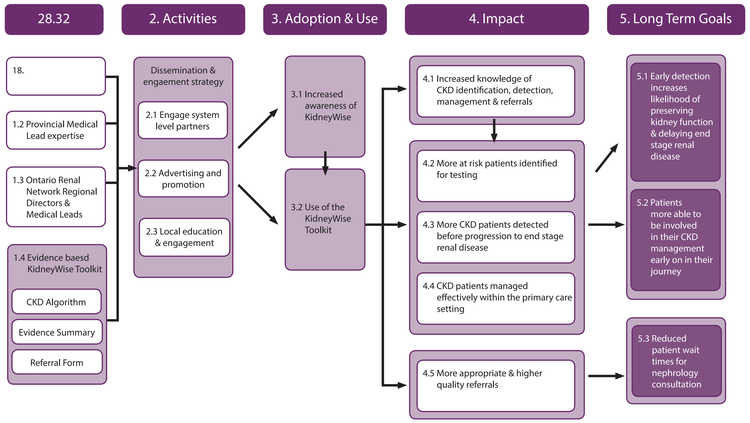

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