



Australian Primary Care  
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Pioneering Change

improvement foundation

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# Welcome to Learning Workshop 2

Clinical Chair

**Dr Alison Edwards**

# Today's workshop

- **Chronic Kidney Disease in your practice  
– Risk factors, registers, and patient  
management**
- **Tips on administering and recording Risk  
Assessments in your practice**



## Today's Learning Objectives

<b>Objective 1</b>	At end of this session, participants will be able to identify strategies for managing patients with Chronic Kidney Disease and identify patients at risk
<b>Objective 2</b>	At end of this session, participants will have a better understanding of the importance of data quality and the steps required to develop a CKD risk register
<b>Objective 3</b>	At the end of this session, participants will feel more confident about implementing and recording Absolute Risk Assessments as part of their everyday tasks

## A quick Data Quality refresher

### CODE your DATA

- Record info so that the database can retrieve it
- Consistent, and Correctly Coded; NOT free text
- Dx, BP, measurements, Smoking status
- Pathology in HL7 format (can be read by data base & mining tools)
- Cull inactive files

# Chronic Kidney Disease in your practice

## Risk Factors, Registers and Patient Management

Graeme Turner, Nurse Practitioner (Chronic Kidney Disease)

# Definition of Chronic Kidney Disease (CKD)

- Glomerular filtration rate (GFR) less than 60ml/min present for greater than 3 months with or without evidence of kidney damage.

OR

- Evidence of kidney damage with or without a decrease in GFR present for greater than 3 months. Evidenced by:
  - Microalbuminuria
  - Proteinuria
  - Glomerular haematuria
  - Pathological abnormalities
  - Anatomical abnormalities

# CKD is a Major Public Health Problem

- 1 in 9 Australian adults has CKD
- You can lose up to 90% of your kidney function before experiencing any symptoms
- Major risk factor for cardiovascular disease
- Usual setting for initial assessment and diagnosis is in general practice
- **Common, harmful & treatable**

## Risk Factors for CKD

- Diabetes
- High blood pressure
- Age over 60 years
- Smoking
- Obesity
- Family history of kidney disease
- Aboriginal or Torres Strait Islander origin
- Established cardiovascular disease

**1 in 3 Australian adults is at increased risk of CKD due to the above risk factors.**



## How do we detect CKD?

# Kidney Health Check

Blood Test:  
eGFR

Urine Test:  
Albuminuria  
(ACR)

BP Check:  
Hypertension

**CKD screening should be undertaken as a part of general chronic disease management & also opportunistically for those at high risk**

# Frequency of kidney checks?

Risk Factor	Recommended Tests	Frequency
Smoker	eGFR Urine ACR Blood Pressure	Every 1-2 years*
Diabetes		
Hypertension		
Obesity		
Established cardiovascular disease		
Family history of CKD		
Aboriginal or Torres Strait Islander origin aged over 30 years		

**\*yearly for people with diabetes or hypertension**

Whilst being aged >60 years is considered to be a risk factor for CKD, in the absence of other risk factors it is not necessary to routinely test these individuals for kidney disease

# eGFR

- Glomerular filtration rate is accepted as the best measure of kidney function
- GFR cannot be measured directly but it can be estimated (eGFR) from serum creatinine using prediction equations
- eGFR is automatically reported (using CKD-EPI equation with every request for serum creatinine in adults in Australia
- An initial eGFR below 60ml/min needs to be rechecked preferably with a fasting sample.
- **eGFR is unreliable when there are acute changes in kidney function.**

# Albuminuria

- Excessive amounts of proteins in the urine are a key marker of kidney damage and increased renal and cardiovascular risk
- Urine ACR is the test recommended for urinary protein as it is more sensitive than PCR
- Albuminuria is seen to be present if at least 2 out of 3 ACR tests are positive. CKD is present if the albuminuria is persistent for at least 3 months.
- Increasing amounts of albumin in the urine correlate directly with an increased rate of progression to end-stage kidney disease.
- Dipstick proteinuria lacks sensitivity and specificity.

# Hypertension

- Hypertension is both a cause and a complication of CKD
- The risks of uncontrolled hypertension include progression of kidney disease and increased risk of coronary heart disease and stroke.

## ? Three tests

- eGFR needs to be less than 60ml/min on 2 or more occasions 3 months apart to establish chronicity of kidney disease.
- Albuminuria needs to be positive on 2 out of 3 tests and must be present for greater than 3 months.
- Blood pressure.

**That is 7 tests by my counting!**

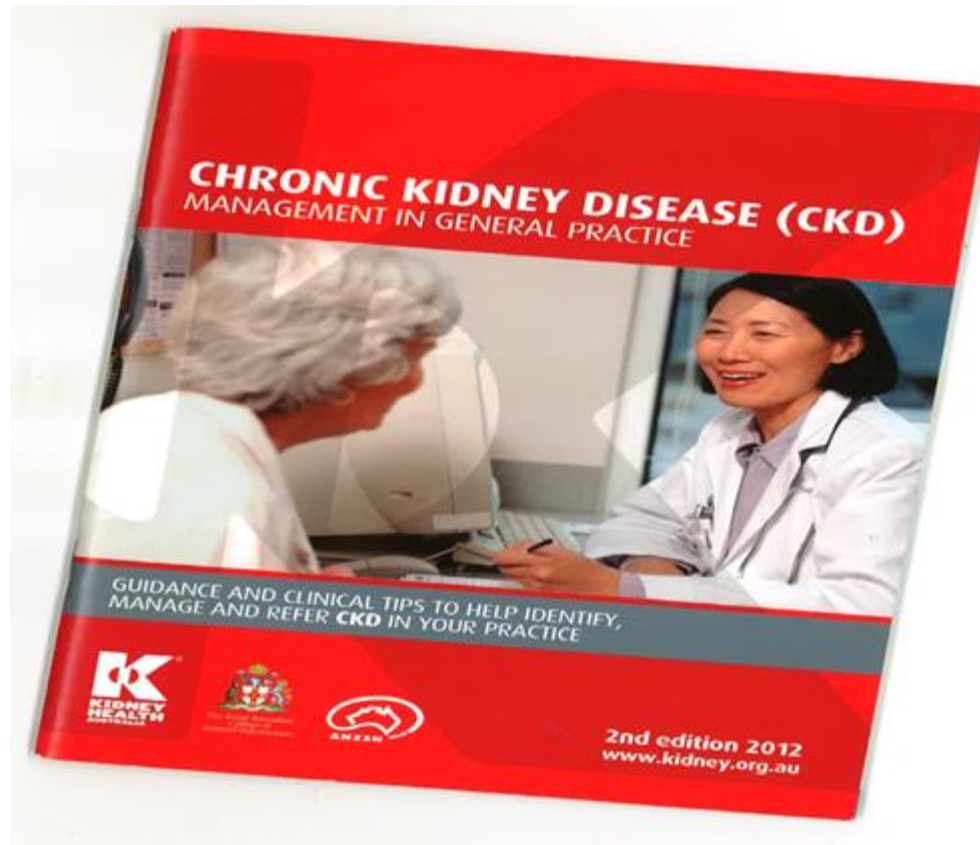
7 tests, no wonder nobody is motivated to identify all of their CKD patients. You may be keen to request the tests however are your asymptomatic patients going to do the tests?





We need to categorize patients according to risk so that we can do appropriate investigations, make appropriate interventions and provide appropriate education.





[Link to KHA publications page](#)

Kidney Function Stage	GFR (mL/min/1.73m <sup>2</sup> )	Albuminuria Stage		
		Normal (urine ACR mg/mmol) Male: < 2.5 Female: < 3.5	Microalbuminuria (urine ACR mg/mmol) Male: 2.5-25 Female: 3.5-35	Macroalbuminuria (urine ACR mg/mmol) Male: > 25 Female: > 35
1	≥90	Not CKD unless haematuria, structural or pathological abnormalities present	Yellow	Red
2	60-89		Yellow	Red
3a	45-59	Yellow	Orange	Red
3b	30-44	Orange	Orange	Red
4	15-29	Red	Red	Red
5	<15 or on dialysis	Red	Red	Red

Refer to colour-coded Clinical Action Plans for management strategies

## Goals of management

<p>Investigations to exclude treatable kidney disease Reduce progression of kidney disease</p> <p>Assessment of absolute cardiovascular risk</p> <p>Avoidance of nephrotoxic medications or volume depletion</p>	<p>Investigations to exclude treatable kidney disease Reduce progression of kidney disease</p> <p>Reduce cardiovascular risk</p> <p>Avoidance of nephrotoxic medications or volume depletion</p>	<p>Investigations to exclude treatable kidney disease Reduce progression of kidney disease</p> <p>Reduce cardiovascular risk</p> <p>Avoidance of nephrotoxic medications or volume depletion</p>
	<p>Early detection and management of complications</p> <p>Adjustment of medication doses to levels appropriate for kidney function</p> <p>Appropriate referral to a Nephrologist when indicated</p>	<p>Early detection and management of complications</p> <p>Adjustment of medication doses to levels appropriate for kidney function</p> <p>Appropriate referral to a Nephrologist when indicated</p>
		<p>Prepare for dialysis or pre-emptive transplant if eGFR &lt;30 mL/min/1.73m<sup>2</sup></p> <p>Discuss advanced care directive if dialysis inappropriate</p> <p>Multidisciplinary team involvement</p>

# How can you develop a CKD registry 1.

- Do a data collect with extraction tool
- Using eGFR and ACR filters on results tab categorize patients by category eg. eGFR 45-59ml/min ACR>25mg/mmol = **CKD Stage 3a with Macroalbuminuria – red category** for management.
- You may look at a data collect from 12 months ago, run the same filters.
- You can then compare the lists and those appearing on both lists can be classified as having CKD of the appropriate stage.

## CKD registry 2.

- The data is not complete yet!
- You have not captured people who have not had pathology tests.

## Looking for people at risk with incomplete data.

- I suggest the following searches
  - eGFR less than 60ml/min with no albuminuria. Flag these people for albuminuria test on next visit.
  - People with diabetes and hypertension.
    - Flag these people for eGFR and albuminuria test on next visit.



# People at high risk of Acute Kidney Injury

- You may wish to develop a list of people at high risk of acute kidney injury.
- Suggested filters would be eGFR less than 30ml/min age greater than 75 years old.
- People in this category are often frail, have multiple co morbidities and an acute dehydrative illness can cause rapid progression to acute kidney failure.
- You can educate these patients to call the practice early if they experience symptoms of dehydration.
- They can also be flagged for rapid sick day management by the practice.

## References:

Chronic Kidney Disease (CKD) Management in General Practice (2<sup>nd</sup> edition). Kidney Health Australia, Melbourne, 2012.

Australian Institute of Health and Welfare 2013. Chronic kidney disease: regional variation in Australia. Cat. no. PHE 172. Canberra: AIHW.



# Tips on Administering and Recording Risk Assessments

Speaker: Sue Johnstone (Pier Street Medical Centre)

## Team Ideas

- Monthly staff meetings
- Allocate a project leader at practice level and a GP to lead the project clinically
- Need informed and supportive staff at reception
- Monthly staff meetings
- Trial and error
- Share/steal shamelessly ideas with other practices in the wave
- Reminders/incentives for staff
- Staff notice board

# The Importance of The Nurse's Role

- Allocate uninterrupted/protected time each week for the APCC project
  
- Project leader role
  - decision maker
  - communicator
  - collator of data/submitting monthly figures
  - writing up of P.D.S.As
  - updating staff noticeboard

# Recording

- Recording Results in Medical Director
  - Uniformity essential
  - Templates
  - Add appropriate recalls
  - May be able to create custom fields in MD to record risk levels
  
- RECORDING OF NUMBERS FOR DATA SUBMISSION
  - Excel spreadsheet – manual entry of data
  - Manually enter the total number of assessments done each month prior to submitting monthly data in penCAT

# Recording of Modifiable Risk Factors

- Vital for an accurate clinical database
- Needs to be done by GPs/nurses at every opportunity
- Select a risk factor to focus on as a PDSA

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