

# Renal Care in the Community

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# Overview

- Past, present and future of the Anaemia protocol
- CKD
- CKD stage 4: management
- Advanced care planning: end of life care

# Anaemia

# Past, present and future!

## Our anaemia protocol

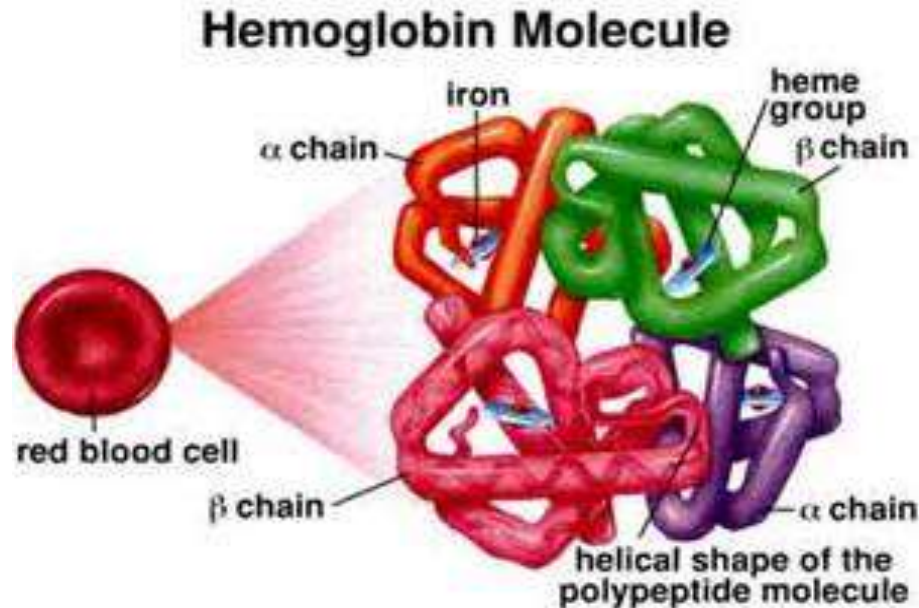
- Anaemia protocol started around 2004
  - Roche employed nurses to coordinate the protocol – move it into primary setting
    - Temporary positions
    - To ensure primary physicians can manage renal anaemia autonomously.
    - These nurses were passionate and proud.
    - Very good at their jobs and wanted to keep their jobs\*
  - Taranaki was the first protocol
    - Presented at many Australasian conferences.
  - After having the protocol within the primary sector for 8 years, Roche pulled funding for their positions.
  - These nurses went into “Save our jobs” mode
  - DHBs didn’t listen, they still lost their jobs...

# SO..... What's happening now

- Fair enough, by rights after 10 years of having this protocol out... we shouldn't need them
- The whole purpose of the anaemia coordinator was to get the protocol out and usable
- Make it fully managed by GPs
- Why
  - Saves the patient admissions to hospital
    - No blood transfusions – no antibodies when comes to Tx
    - Saves \$1200/night/patient in hospital – tax payers money
    - Good revenue for GPs
    - Easy protocol

# Present

- Across the country, anaemia jobs have been disestablished
- CKD nurse to organise
  - Special authorities for all renal anaemia patients
  - Iron infusions for CKD patients



# Protocol

- **Erythropoietin (EPO) Administration**

- Start EPO in the dose of 4000 units subcutaneously once a week
- Monitor Hb, iron status, renal function, albumin, and BP (blood pressure) monthly
- If Ferritin > 500 microg/L then check CRP and Reticulocyte count
- Adjust EPO dose as below

- Hb < 110 g/l:

- Increase EPO dose by 1 step

- Hb 110 – 120 g/l:

- No change in EPO dose

- Hb > 120 g/l:

- Reduce EPO by one step

- Hb > 130 g/l

- STOP EPO and restart at lower step when Hb is <120



# Protocol

| Weekly Dose           | Weekly frequency           |
|-----------------------|----------------------------|
| 1000 units equivalent | 2,000 units x fortnightly  |
| 2000 units            | 2,000 units x once a week  |
| 3000 units            | 3,000 units x once a week  |
| 4000 units            | 4,000 units x once a week  |
| 5000 units            | 5,000 units x once a week  |
| 6000 units            | 6,000 units x once a week  |
| 8000iu units          | 4,000 units x twice a week |
| 10000 units           | 10,000 units x once a week |
| 12000 units           | 6,000 units x twice a week |



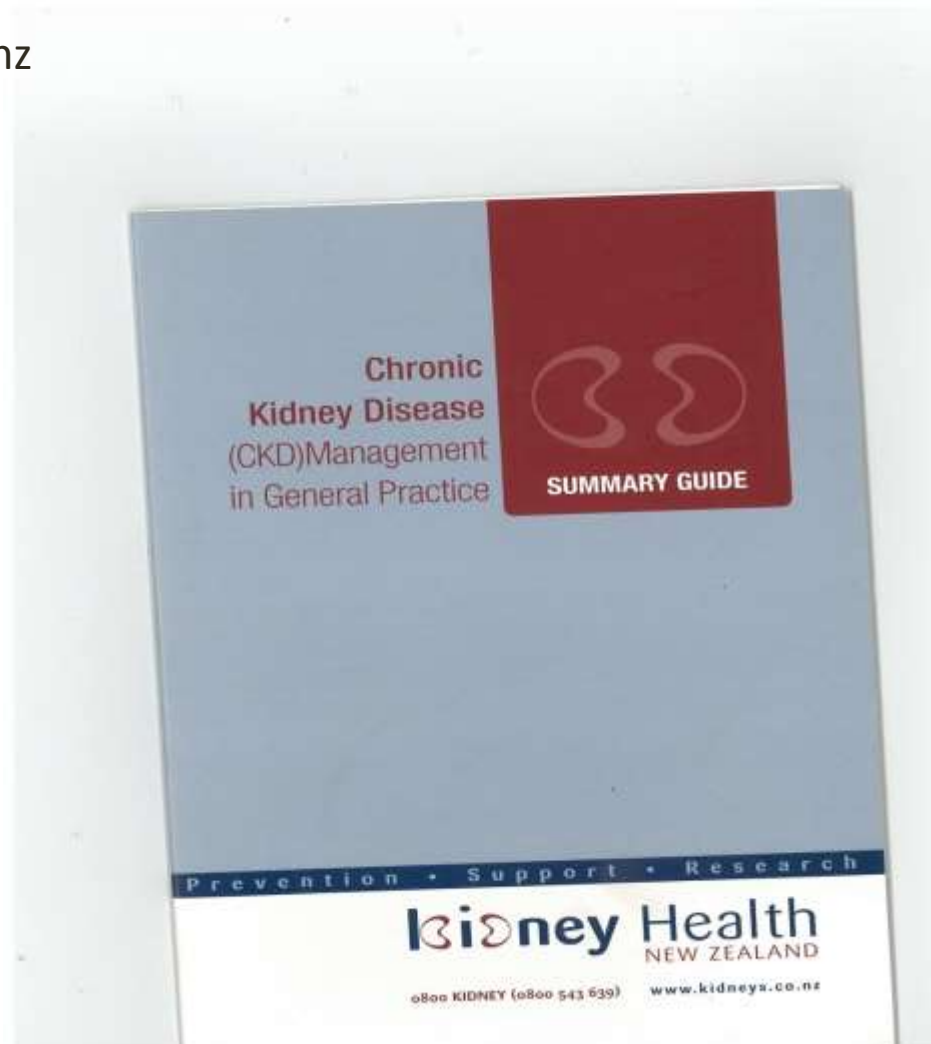
# Parts of the protocol often not read

- The **general practitioner will consult with the renal physician**, (Dr A Williams), if there are any difficulties in achieving target haemoglobins, or for any other queries related to this protocol.
- **Oral Iron Administration**
- **NB: If BP > 160/100 do not give EPO – \*\*\*\*refer to renal physician\*\*\*\***
- **NB: \*\*\*\*Refer to Physician\*\*\*\* if:**
  - Hb increase is > 10g/L in the past month
  - Hb increase is < 3 g/L in the past month and is below target range
  - Hb < 80 g/L and patient is on EPO
  - Hb increase above target range despite previous dose decrease
  - CRP > 50

# Chronic Kidney Disease (CKD)

# CKD

[www.kidneys.co.nz](http://www.kidneys.co.nz)



# Who should usually be referred to a nephrologist?

- eGFR  $<30\text{mL/min/1.73m}^2$ \*
- Persistent significant albuminuria (urine ACR  $>30\text{mg/mmol}$ )
- A consistent decline in eGFR from a baseline  
     $<60\text{mL/min/1.73m}^2$   
     $>5\text{mL/min/1.73m}^2$   
    (a decline over a six-month period which is confirmed on at least three separate readings)
- Glomerular haematuria with macroalbuminuria
- CKD and hypertension that is hard to get to target despite
- At least three anti-hypertensives
- Diabetes with eGFR  $<45\text{mL/min/1.73m}^2$ \*\*

# CKD Progression

| Prognosis of CKD by GFR and albuminuria category |                                  |   |   |   |
|--|----------------------------------|---|---|---|
| Kidney function stage                            | GFR (ml/min/1.73m <sup>2</sup> ) | Albuminuria Stage   |   |   |
|  |                                  | Normal<br>(Urine ACR mg/mmol)<br>Male: <2.5<br>Female: < 3.5                      | Microalbuminuria<br>(Urine ACR mg/mmol)<br>Male: 2.5-25<br>Female: 3.5-35 | Macroalbuminuria<br>(Urine ACR mg/mmol)<br>Male: > 25<br>Female: > 35 |
| 1  | ≥ 90                             | NOT CKD unless haematuria, structural or pathophysiological abnormalities present |   |   |
| 2  | 60-89                            |   |   |   |
| 3a   | 45-59                            |   |   |   |
| 3b   | 30-44                            |   |   |   |
| 4  | 15-29                            |   |   |   |
| 5  | < 15 or on dialysis              |   |   |   |

CKD  
Progression risk

Low

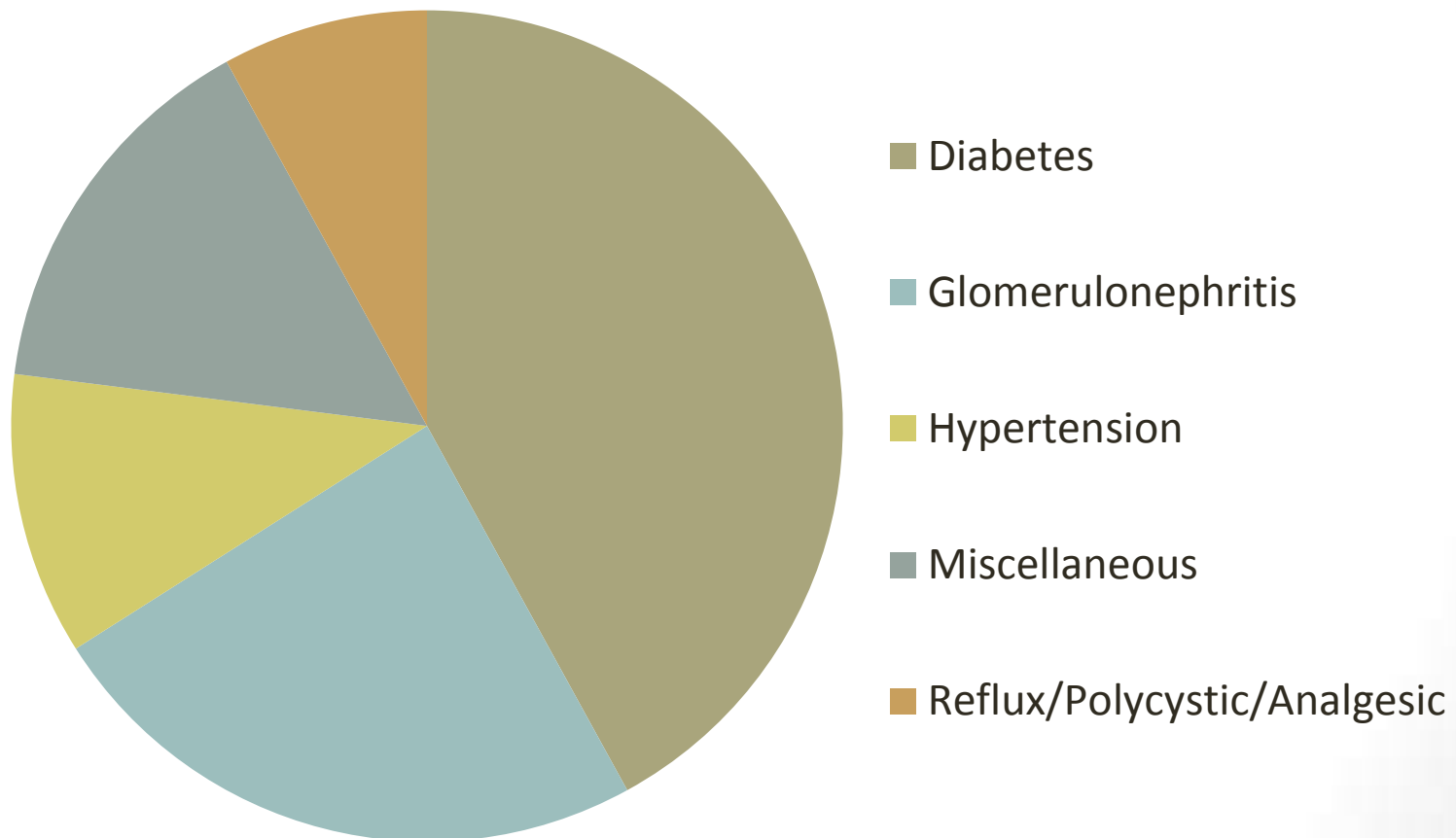
Moderate

High

Very High

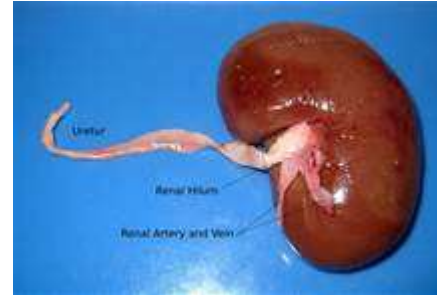
# Causes of new patients 2012

Causes



# Prevention

- Cease smoking
- Weight management
- Physical activity
- Good nutrition
- Alcohol intake
- Blood pressure management
- Proteinuria management
- CVD Risk
- Blood glucose management



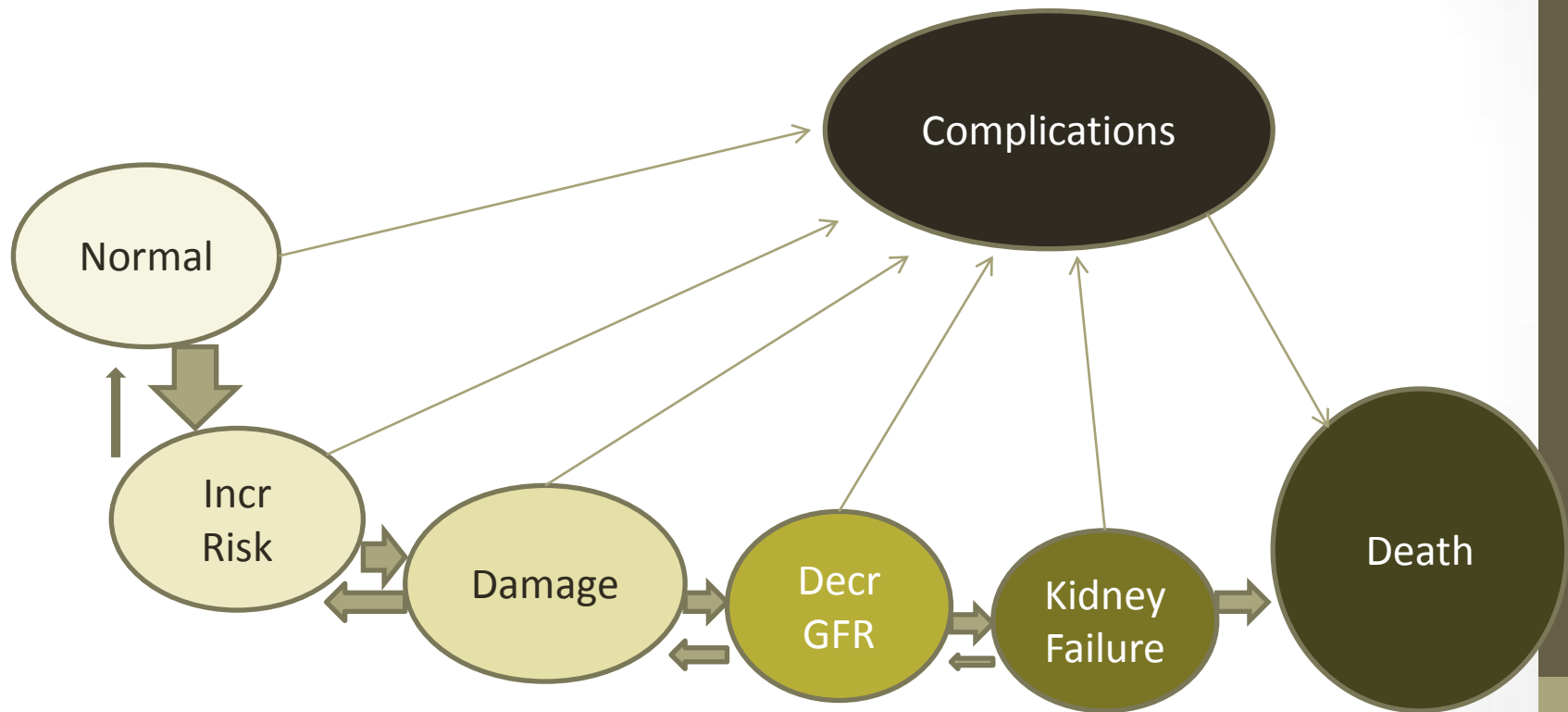
# Prevention



- Up to 80% of our dialysis population could have been prevented
- Incentre Haemodialysis patients can cost up to if not more than \$100,000/per year/patient
- Peritoneal dialysis patients can cost up to \$50,000
- Big drive for community dialysis and pre-emptive transplantation...



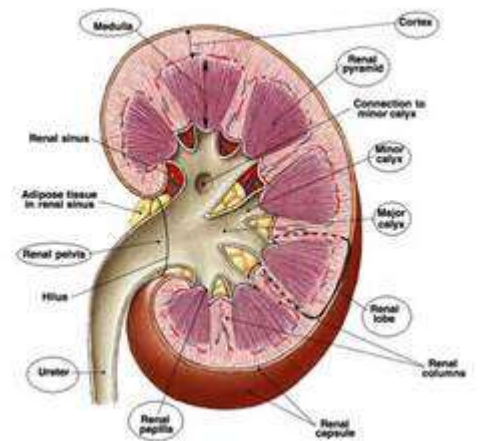
# Continuum of development, progression and complications CKD



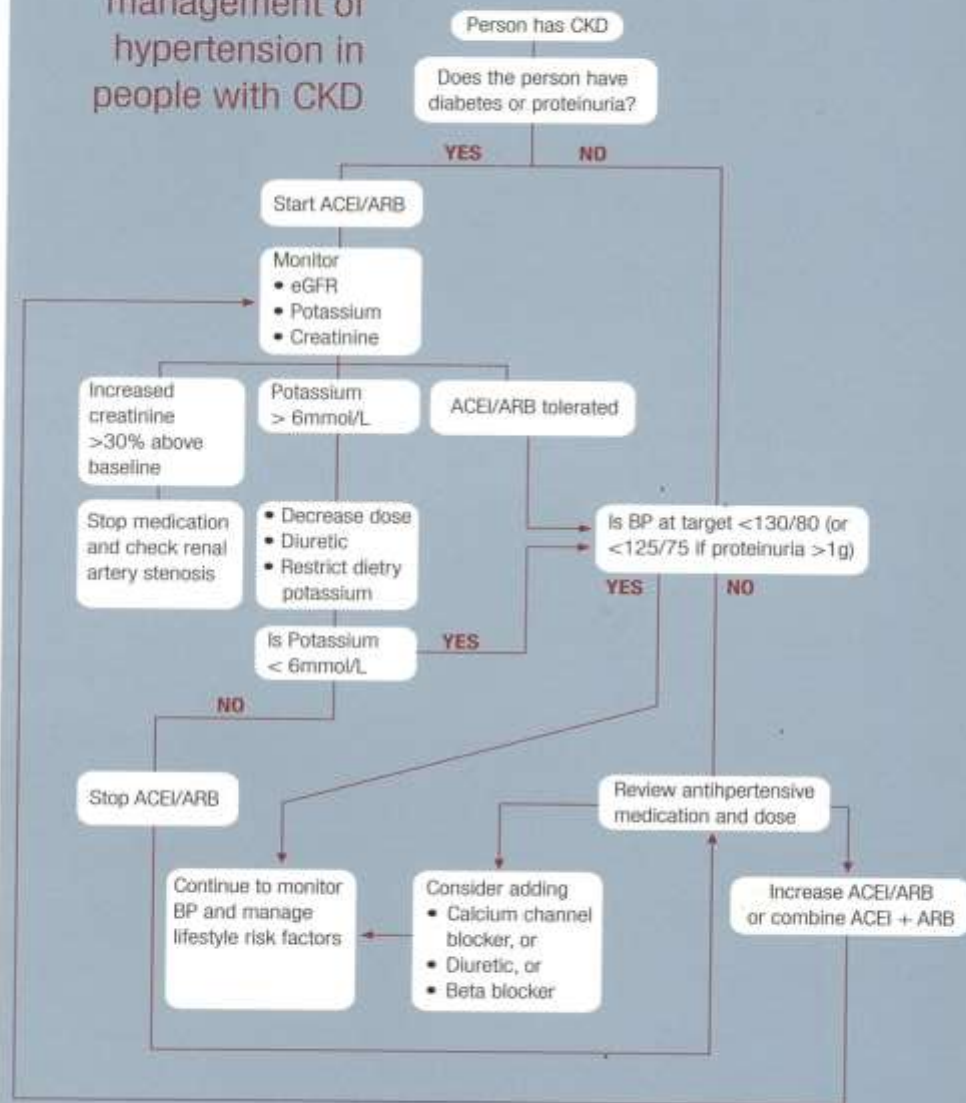
# Management

# Management of CKD Patients

- First we need to prevent CKD... Diabetes, obesity, heart disease
- Main aim of management:
  - ***Prevent Complications***
  - ***Prolong period before needing dialysis***
  - ***Positive end of life***
- Anaemia – Iron stores first - then EPO
- BP management
- Bone health
- Kidney monitoring
- Symptom management
- Cognitive testing
- Advanced care planning



## Principles of management of hypertension in people with CKD



# Bone health and Kidney Failure

- Phosphate - Increases
- Calcium - Decreases
- PTH - Increases
- Alk Phos – Increases



- What does Calcium carbonate work on?
- What does Calcitriol work on?
- What does Aluminium work on?
- What does increased alk phos indicate?

# Bone Health

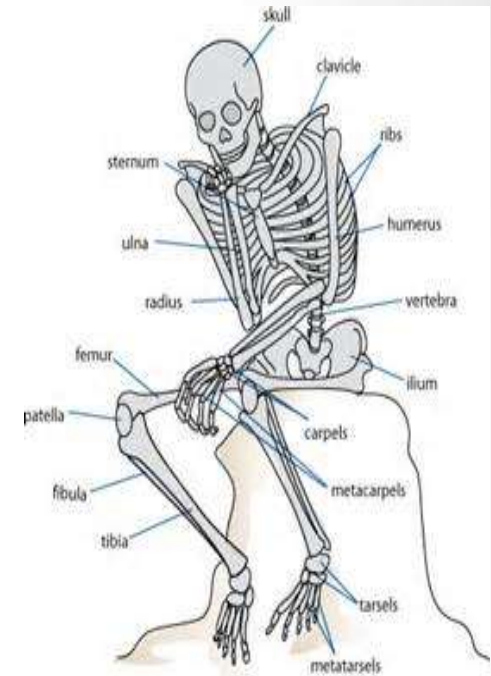


- Phosphate absorbed by food
  - Dairy/Meat/Eggs
  - Excreted mainly by kidneys, some by the bowel
- Calcium increased by PTH activation of vitamin D
  - Excreted mainly by bowel, little by kidney, reabsorbed by kidneys.
- PTH –
  - Released in response to low extracellular concentrations of free  $\text{Ca}^{+}$
  - Stimulates production of inactivated vitamin D
  - Mobilization of Calcium from bone
  - Suppresses calcium loss in urine
- Inactivated Vitamin D – 25 Dihydroxylvitamin D
  - Converted by liver
  - Mobilised to kidney convert it to useable form
    - 1,25 dihydroxycalciferol – increases  $\text{Ca}^{+}$  absorption in intestine.

# Bone health and kidney problems

Simply

- Phosphate is not excreted via kidneys
  - Serum phos rises
- Unable to activate Vitamin D
  - Absorption of  $\text{Ca}^{+}$  is decreased
  - Serum  $\text{Ca}^{+}$  decreases
  - PTH hyper secreted, in an effort to increase intestinal absorption of  $\text{Ca}^{+}$



# Complications of poor bone health

- Alk Phos rises = Damage to bone structure. CKD-MBD
- Brittle Bones
- Deformation
- “Chalk” vessels
- Calciphylaxis





# Years of poor bone health



L • C  
B



R • C  
B



# Bone Health Medications

- Phosphate Binders – Calcium carbonate and aluminium taken with every meal – Ca Carb - CHEWED!! – excrete phosphate through bowels
- Calcitriol – (Rocaltrol) Activated Vitamin D to increase Calcium and suppress secretion of PTH.



# New Initiatives - TDHB

# Cognitive Testing

# Cognitive Testing



- Up to 70% of HD patients have chronic cognitive impairment - Moderate to Severe
  - Unrecognized cognitive impairment
- Functional status of older patients that start dialysis is maintained in only 13% of these patients
- Cognitive and functional impairment is associated with increased risk of death amongst dialysis patients



# Why do cognitive testing



- Failure to train patients onto home dialysis
- Prevent early death within 6 months of starting dialysis
- Gives an understanding how these patients will train
  - To early to tell results
- Pre-dialysis cognitive testing
  - Addenbrooke's tests
- Survival calculations at pre-dialysis modality session
  - ANZdata calc
  - Haemodialysis calc
- On dialysis, every 12 months (Only HD patients at this point)
  - Test for deterioration – 30% of our patients have deteriorated

# Advance Care Planning



# End of life care

- What is Advanced Care Planning?
  - Process – capable (Mentally competent) adult engages in a plan about health care decisions, in the event that they become incapable (Legally incompetent) to personally direct his/her own health care
  - Kind of care the person would want or not want if he/she unable to make a decision
  - Process of exploring Qs that often go unasked
    - What give life meaning
    - Are there circumstances
      - Loss physical functioning
      - Loss mental awareness



# ACP – Role of health worker

- Health care workers should initiate ACP conversations – Having those difficult conversations.
- Health care worker should encourage ACP. Not just for those people facing life threatening conditions etc.
- Health care workers can and should be a support and resource to people doing ACP.
- Health care workers should know how to assist an adult person who wants to complete an ACP.



# Ethical and Legal obligations

- Appropriate training to communicate effectively during ACP discussions and to understand the legal and ethic issues involved.
  - Basic level one training is free on line – easy ? 1.5 hours of professional development
    - [www.advancedcareplanning.org.nz](http://www.advancedcareplanning.org.nz)
- No one should be pressured – adults right to refuse
- Consent to treatment must be obtained from a capable adult
  - The fact that a person has an ACP and/or advanced directive – NOT relevant as long as the person is capable of making his or her own decisions about care.

# Why do an ACP?



- The person: Fosters personal resolution, help to reduce anxiety about what lies ahead.
  - Confidence that wishes are known and will be followed
- Patients loved ones: Benefit of knowing what choices the patient would have made
  - Look back with the knowledge that they were able to honour their family members wishes
- The health care worker: integrating ACP into routine clinical encounters enables them to help pts families etc to prepare for the kinds of decisions they may face in future.

# ACP Course

- Pre – course work
  - Level one basic online training – print out certificates, bring with you to the course
  - When registered – ACP people send out pre-course workbook
  - Complete your own ACP
- Full course – 10 participants only
  - 2.5 day course – full on!
    - To complete the course, its compulsory to be there the whole time.
    - Compulsory to participate – ROLE PLAY
    - Role-play – You – 1 actor – one video player and the facilitator
      - 4 others watching

# Post course expectations

- Post course expectations
  - Structure support group
  - Identify patients who would benefit from ACP
  - Initiate discussion and provide resources
  - Help patients to document their preferences
  - Keep a reflective log of the conversations
  - At ONE MONTH – need to have completed 10 conversations and let the facilitators know.
    - I sent in my reflective log to prove I had at least 10
- They send a certificate



# WEB SITE

- Look up the website for
  - Resources
  - Training



- Advanced care planning website:

***[www.Advancecareplanning.org.nz](http://www.Advancecareplanning.org.nz)***

- Healthcare workers
- Patients

# Conclusion

- No anaemia nurse coordinators
  - Physician to physician contact
- 1<sup>st</sup> prevent CKD
- 2<sup>nd</sup> prevent complications of CKD
- 3<sup>rd</sup> Management of CKD
- Cognitive assessment of patients
- Importance of advance care planning



# Any Questions?



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