Chronic renal disease in the elderly:
are all pigs to be considered equal?

W. Van Biesen,

Ghent University Hospital

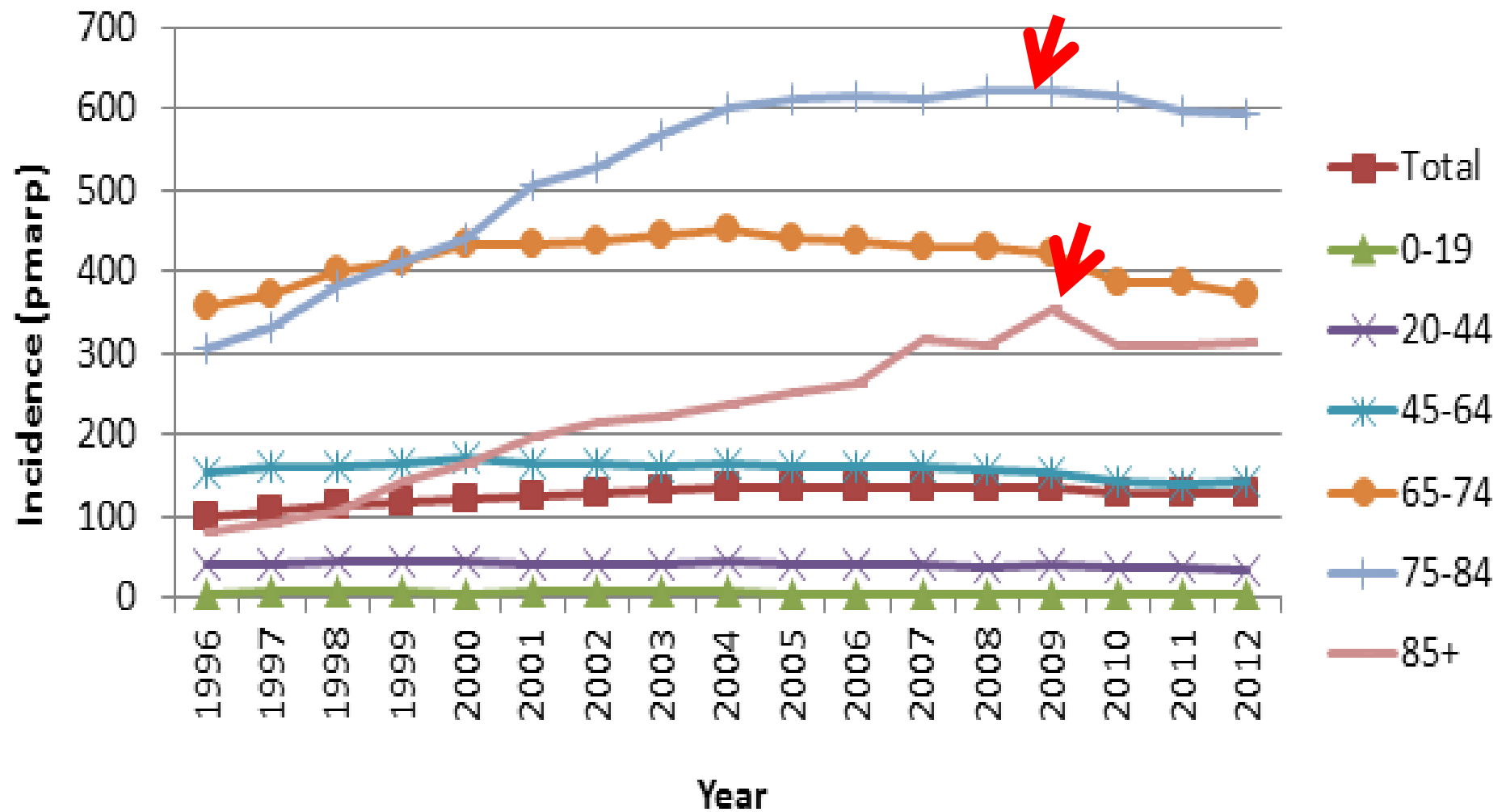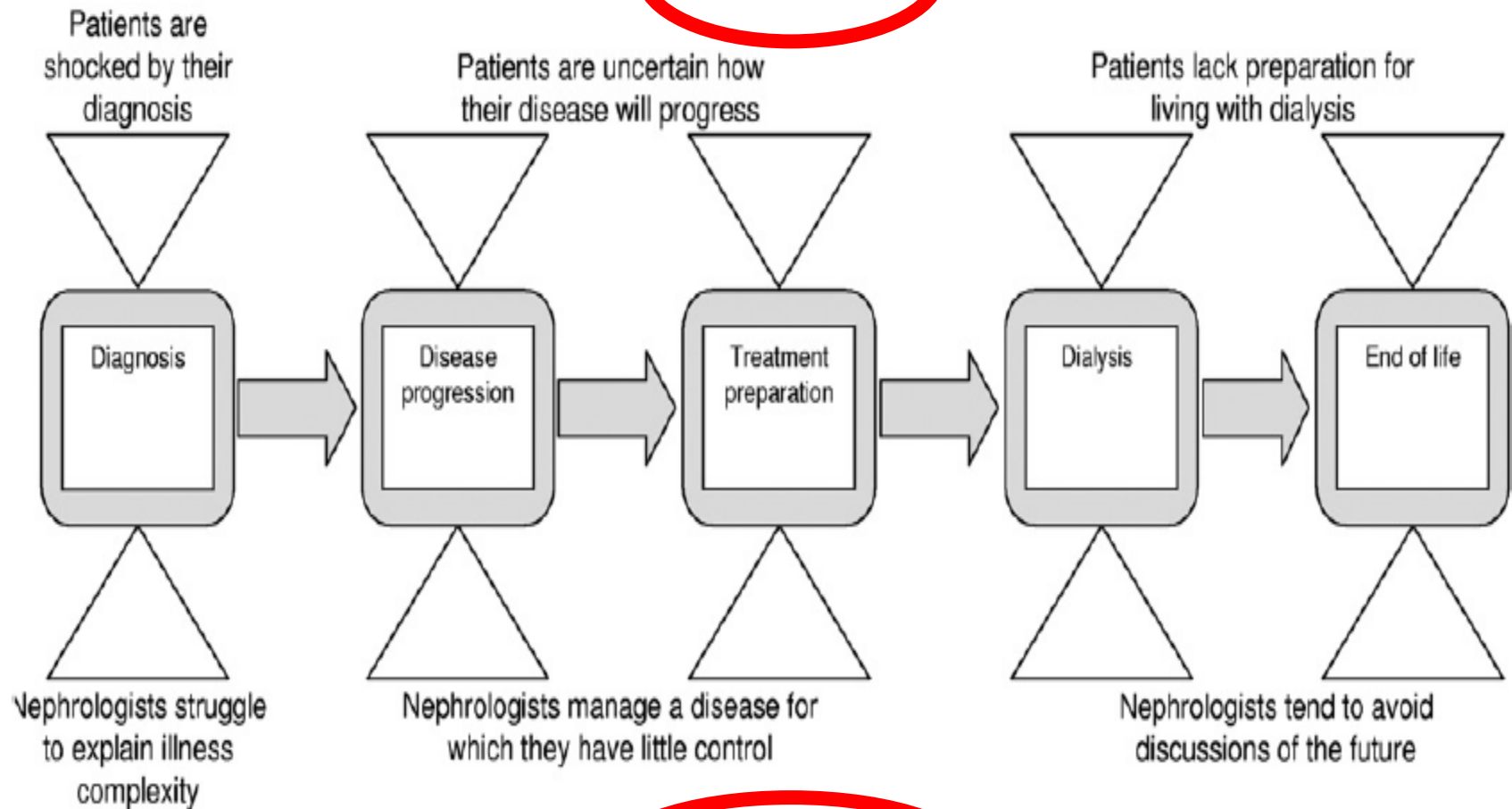Incidence of dialysis per age category, per million population

Table 2. Withdrawals per 100 patient-years of dialysis and withdrawal as a cause of death

Year	Total Withdrawals (*n*)	Withdrawal Rate per 100 Patient-Years of Dialysis (%)	Withdrawal as Cause of Death (%)[a]
2001	233	1.5	7.9
2002	303	1.8	9.9
2003	376	2.2	11.8
2004	441	2.4	13.8
2005	543	2.8	16.1
2006	538	2.7	15.4
2007	657	3.2	18.4
2008	660	3.1	18.3
2009	667	3.0	19.5

[a]Date of death not available in 25% of patients who withdrew from dialysis.

Elderly and CKD: a thematic synthesis

Figure 3. Trajectory of kidney disease with patient and nephrologist themes.

Overview

- CKD in the elderly: a disease?
  - How to assess renal function in the elderly?
  - How to assess progression in the elderly?
  - How to assess risk of death in the elderly?
- How to assess functional status in the elderly?
- How to assess nutritional status in the elderly?
- To dialyse or not to dialyse? Is that the question?
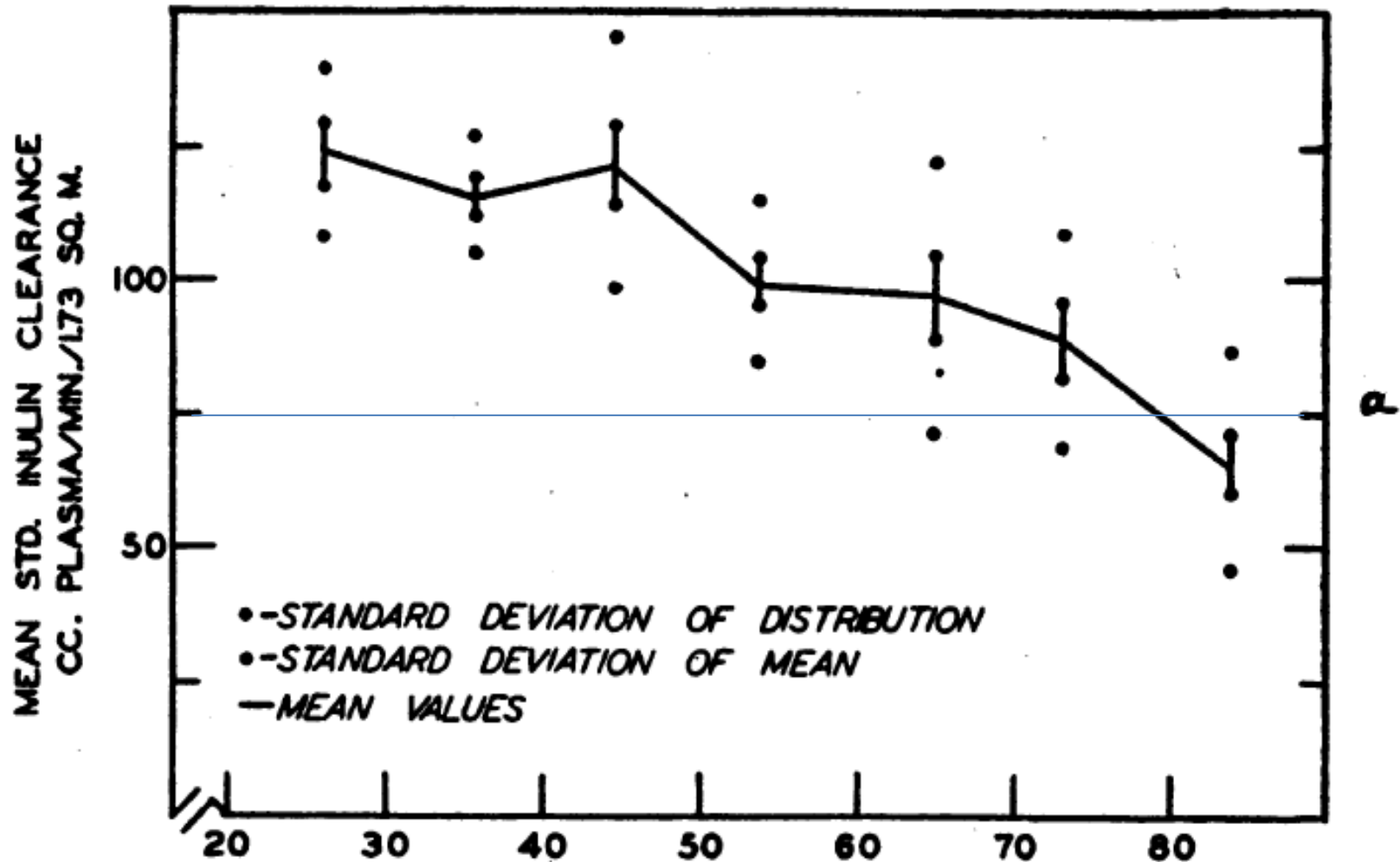- Some ethical considerations
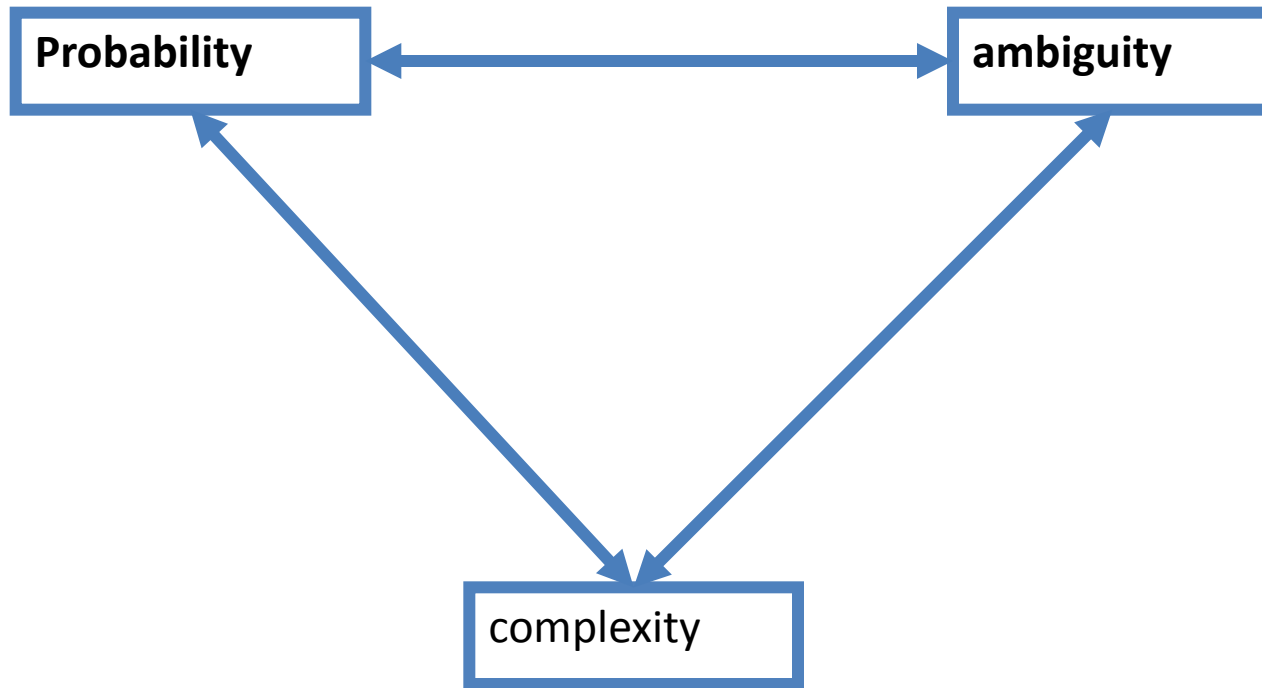
CONTEXT

Thanks to Rembrand and Edwina Brown

Thanks to Van Gogh and Edwina Brown

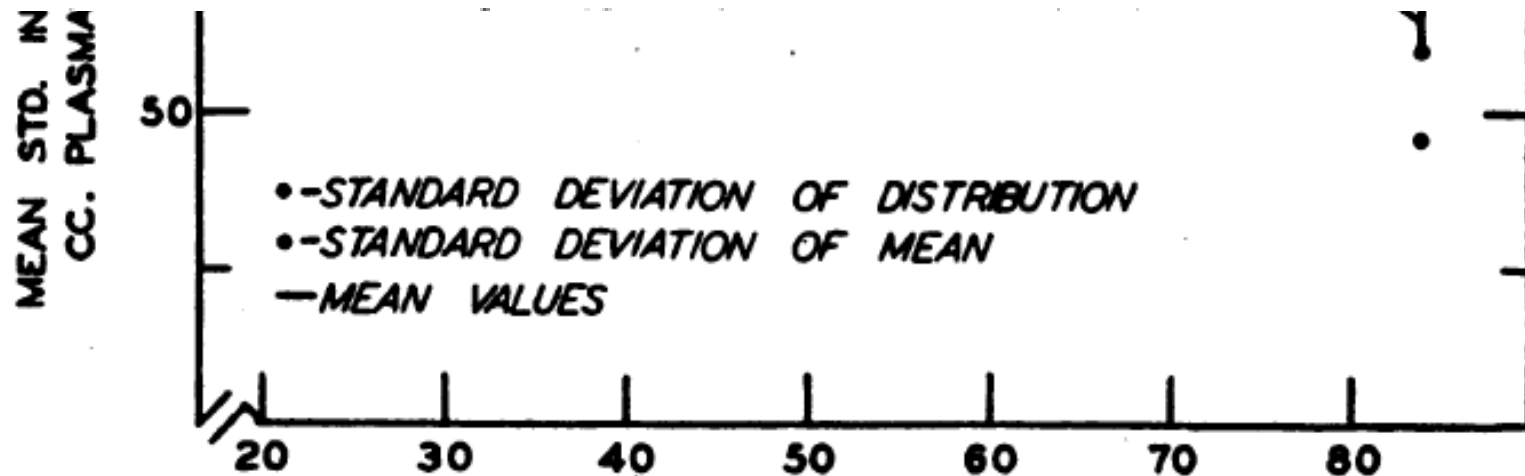# Is CKD a disease in the elderly?

AGE CHANGES IN RENAL FUNCTION

Is CKD a disease in the elderly?

AGE CHANGES IN RENAL FUNCTION

cal examination, and urine analysis. All subjects were free from history or clinical evidence of renal disease, essential hypertension, cerebrovascular accident, or heart disease. All subjects were ambulatory and afebrile.

MEAN STD. IN CC. PLASMA

50

•—STANDARD DEVIATION OF DISTRIBUTION
•—STANDARD DEVIATION OF MEAN
—MEAN VALUES

20   30   40   50   60   70   80

Estimating renal function in the elderly

Accuracy of the MDRD (Modification of Diet in Renal Disease) Study and CKD-EPI (CKD Epidemiology Collaboration) Equations for Estimation of GFR in the Elderly

Hannah S. Kilbride, BSc, MRCP,[1] Paul E. Stevens, BSc, FRCP,[1]
Gillian Eaglestone, BSc, RN,[1] Sarah Knight, RGN,[1] Joanne L. Carter, MSc, PhD,[2]
Michael P. Delaney, BSc, MD, FRCP,[1] Christopher K.T. Farmer, MD, FRCP,[1]
Jean Irving, MSc,[1] Shelagh E. O'Riordan, MBBS, MRCP,[3] R. Neil Dalton, PhD,[4] and
Edmund J. Lamb, PhD, FRCPath[2]

Background: Glomerular filtration rate (GFR) is a measure of kidney function, commonly estimated

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Conclusions: The CKD-EPI$_{cr}$ equation appeared less biased and was more accurate than the MDRD Study equation. No equation achieved an ideal P$_{30}$ in the overall population. Our data suggest that GFR estimation is as satisfactory in older people of European ancestry as it has been reported to be in younger individuals.
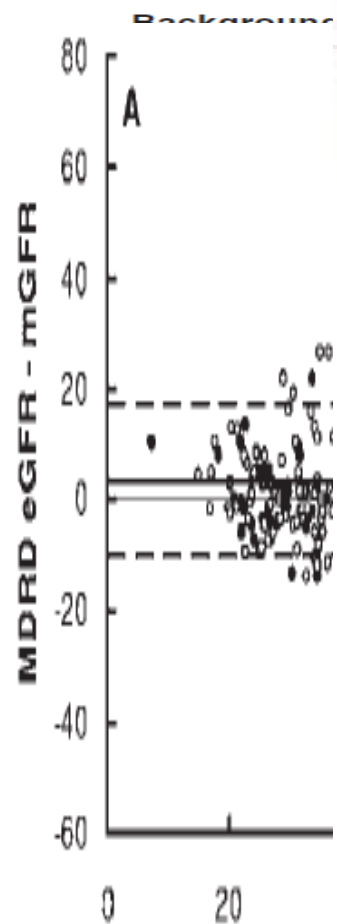
Accuracy of the MDRD (Modification of Diet in Renal Disease) Study and CKD-EPI (CKD Epidemiology Collaboration)

Ha...
Gillian Eag... PhD,[2]
Michael ... CP,[1]
Jean Irving, ... D,[4] and

AJKD, 2012

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External Validation of the Berlin Equations for Estimation of GFR in the Elderly
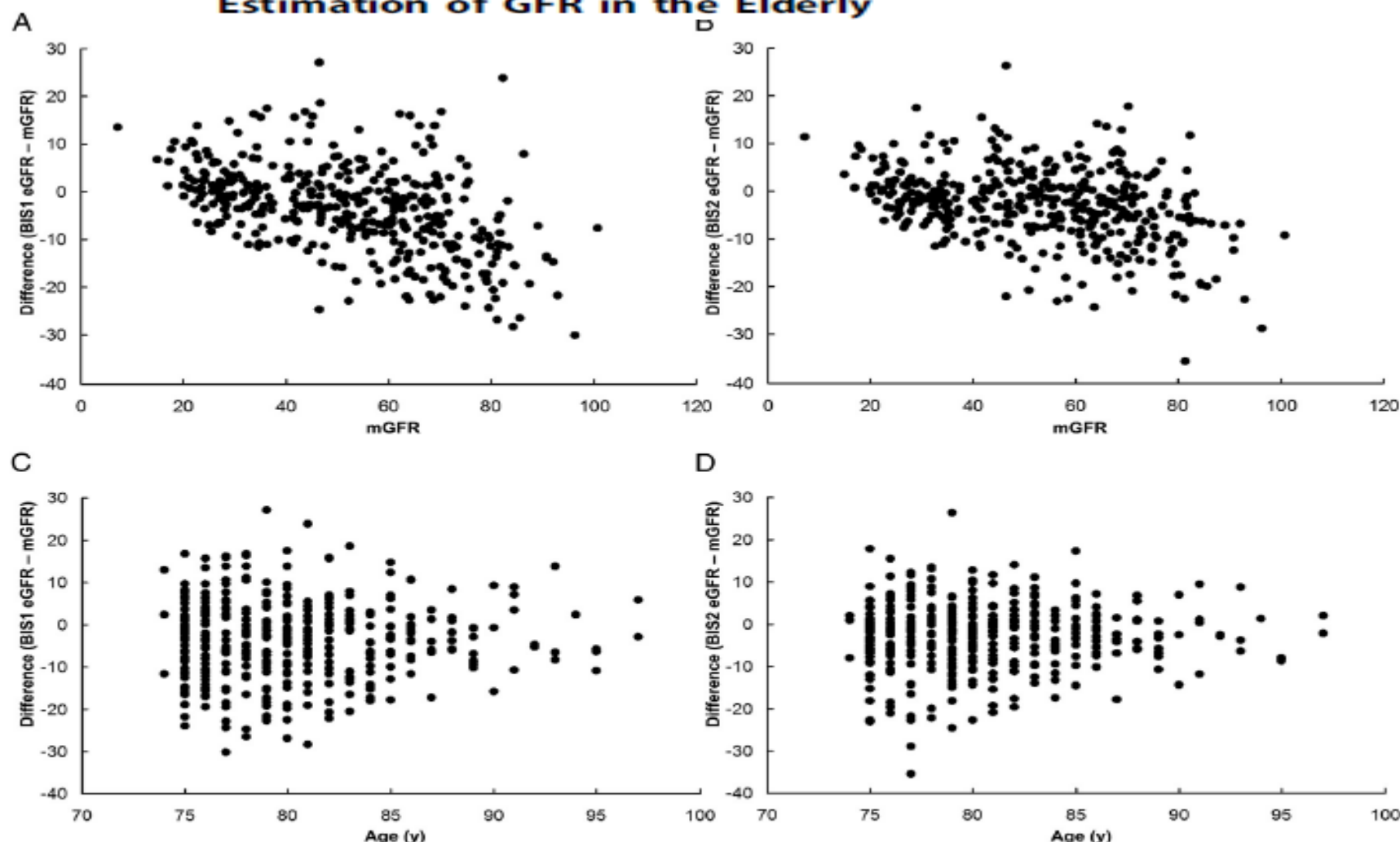
Figure 1. Bias plots. Difference between (A) BIS1 and (B) BIS2 eGFR and mGFR plotted against mGFR. Both BIS equations showed increasing negative bias against mGFR at higher levels of GFR; this effect seemed more marked for the BIS1 equation: difference (BIS1 − mGFR) = −0.235(mGFR) + 8.7, R^2 = 0.23, $P < 0.001$; difference (BIS2 − mGFR) = −0.152(mGFR) + 5.1, R^2 = 0.14, $P < 0.001$. The equivalent figures for the CKD-EPI equations have been published previously.[6] Difference between (C) BIS1 and (D) BIS2 eGFR and mGFR plotted against age. There was no linear relationship between bias and age ($P > 0.05$) but increasing scatter (funnel-shaped plot) is apparent at younger ages. All data (including differences) in mL

Q1: What parameter should be used in older (frail??) patients to estimate kidney function for dose adaptation purpose?

1.1 We recommend using estimation equations correcting for differences in creatinine generation rather than plain serum creatinine to assess renal function in older patients (1A)

1.2 We recommend there is insufficient evidence to prefer one estimation equation over another as all estimation equations perform equally poor and substantial misclassification can occur with all equations in older patients with deviating body composition (1B).

1.3 We recommend to actually measure renal function if accurate and precise estimation of GFR is needed.

Drug Dose Adaptation

Kidney function and clinical recommendations of drug dose adjustment in geriatric patients

Marlies Karsch-Völk[1*], Elisa Schmid[1], Stefan Wagenpfeil[2,3], Klaus Linde[1], Uwe Heemann[4] and Antonius Schneider[1]

Table 6 Agreement beyond chance (Kappa coefficients) among different references regarding necessary drug changes when using the Cockroft-Gault equation for estimating eGFR

	Dosing (95% CI)	AMP (95% CI)	BNF (95% CI)	DPRF (95% CI)
Renal Drug HB	0.15	0.10	0.23	0.20
	(0.00–0.32)	(0.00–0.34)	(0.06–0.40)	(0.03–0.36)
Dosing		0.62	0.51	0.19
		(0.47–0.78)	(0.35–0.68)	(0.02–0.35)
AMP			0.49	0.19
			(0.34–0.65)	(0.05–0.34)
BNF				0.57
				(0.40–0.73)

95% CI = 95% confidence interval;
Renal Drug HB = The Renal Drug Handbook (19), Dosing = www.dosing.de (21), AMP = Arzneimittel Pocket (22), BNF = British National Formulary (20), DPRF = Drug Prescibing in Renal Failure (18).

Q1:What parameter should be used in older patients to estimate kidney function for dose adaptation purpose?

- Advice for clinical practice:
  - kidney function can vary over time and should be followed repetitively using the same equation
  - estimation equations can not be used in patients with acute changes in their kidney function
  - even when using established formulae in this specific population, different formulas can result in different classifications
  - serum levels of drugs depend upon absolute rather than body size corrected clearance
  - All formula other than Cockcroft and Gault require additional correction for BSA to obtain absolute values
  - For drugs with a narrow toxic/therapeutic range, regular measurement of serum concentrations can provide useful information. However, differences in protein binding between uraemic vs non uraemic patients occur, which might necessitate the use of different target levels of total drug concentration.

Risk of death vs risk of ESRD in function of age
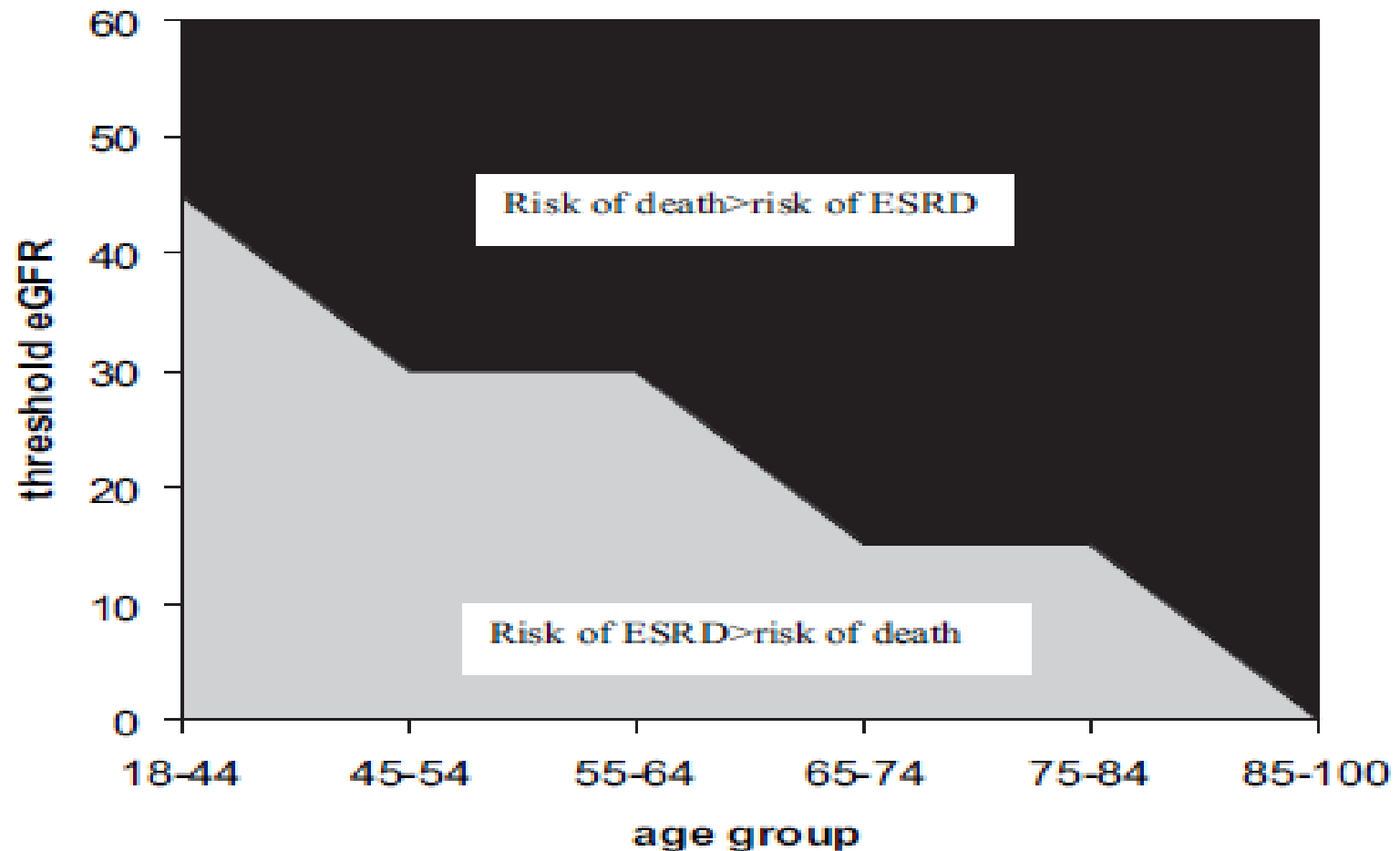
Figure 2. Baseline eGFR threshold below which risk for ESRD exceeded risk for death for each age group.

Risk for ESRD in function of baseline eGFR
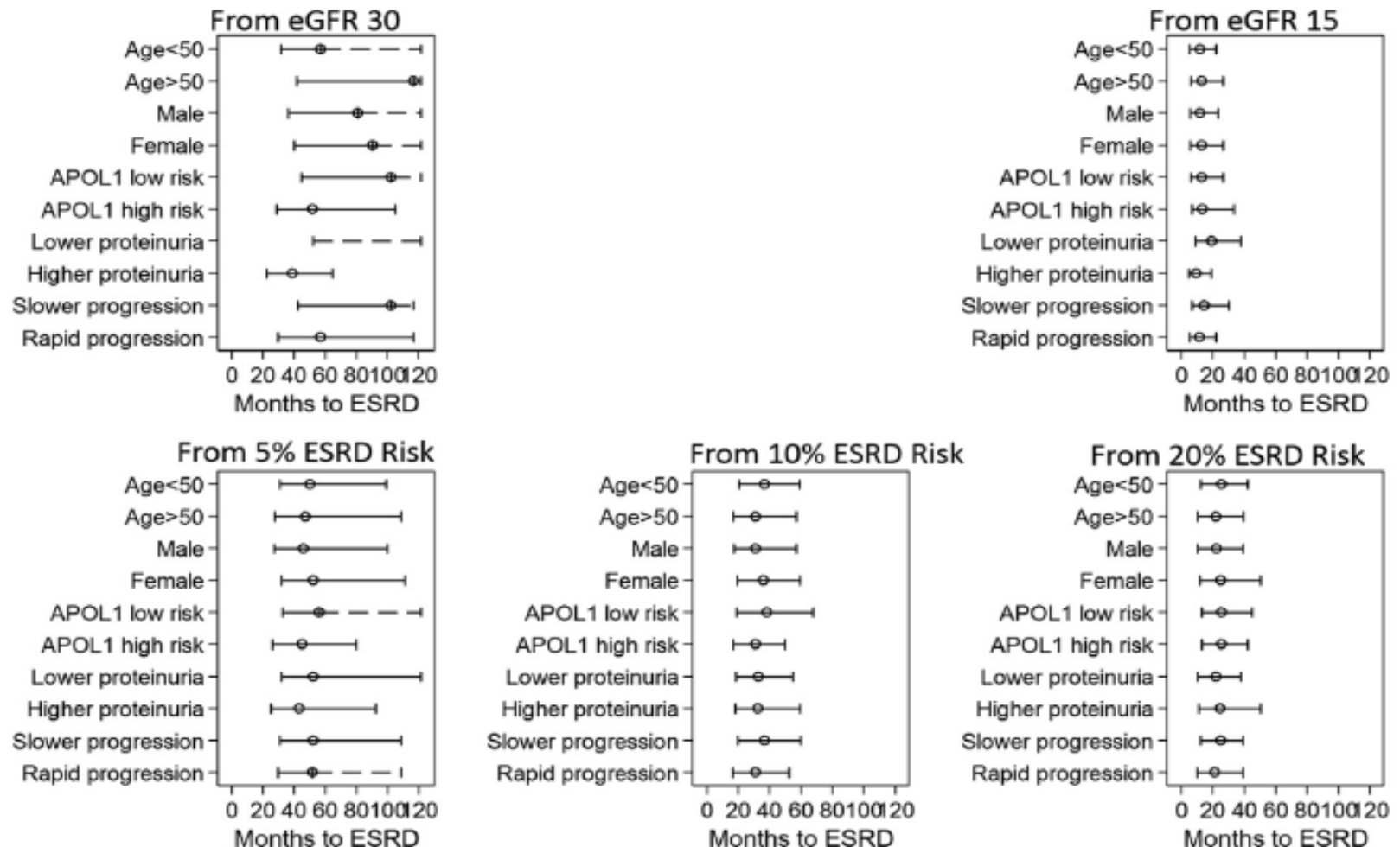
Figure 3. Median (25th-75th percentile) times to end-stage renal disease (ESRD), by patient characteristic, from 5 starting points: estimated glomerular filtration rate (eGFR) of 30 mL/min/1.73 m^2, eGFR of 15 mL/min/1.73 m^2, and 1-year risk of ESRD of 5%, 10%, and 20%. Times to ESRD estimated accounting for the competing risk of death and adjusting to eGFR of 30 or 15 mL/min/1.73 m^2 in analyses from eGFR thresholds and 1-year ESRD risk of 5%, 10%, and 20% in analyses from ESRD risk thresholds. Dashed lines represent an imputed interquartile range and are truncated at the last observed follow-up time.

Grams et al, AJKD 2015

Q2: What is the most reliable score to predict progresion of chronic kidney disease in older patients with CKD stage 3b or higher

2.1 We recommend the Kidney Failure Risk Equation (KFRE) predicts sufficiently well the risk for progression of chronic kidney disease in older patients with CKD stage 3b or higher (1B)

Development and Validation of a Model to Predict 5-Year Risk of Death without ESRD among Older Adults with CKD

Nisha Bansal,* Ronit Katz,* Ian H. De Boer,* Carmen A. Peralta,[†] Linda F. Fried,[‡] David S. Siscovick,[§] Dena E. Rifkin,[‖] Calvin Hirsch,[¶] Steven R. Cummings,** Tamara B. Harris,[††] Stephen B. Kritchevsky,[‡‡] Mark J. Sarnak,[§§] Michael G. Shlipak,[†] and Joachim H. Ix[‖]

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Michael G. Shlipak,

Table 4. Points associated with each risk factor in the CKD mortality equation derived in the Cardiovascular Health Study

Risk Factor Categories	Points
Age (yr)	
70–74	0
75–79	1
80–84	2
≥85	4
Sex	
Women	0
Men	1
Race	
Black	0
White	1
eGFR creatinine (ml/min per 1.73 m²)	
50–59	0
40–49	1
30–39	2
<30	4
Urine albumin-to-creatinine ratio≥30 mg/g	
No	0
Yes	1
Diabetes	
No	0
Yes	1
Smoking	
Never	0
Former	1
Current	2
Prevalent heart failure	
No	0
Yes	2
Prevalent stroke	
No	0
Yes	1

Development and Validation of a Model to Predict 5-Year Risk of Death without ESRD among Older Adults with CKD

Table 4. Points associated with each risk factor in the CKD mortality equation derived in the Cardiovascular Health Study

Table 5. Risk associated with the point totals using the risk score for 5-year mortality in the development and validation cohorts

Point Total	Estimate of Risk (%)	Cardiovascular Health Study		Health, Aging, and Body Composition Study	
		N (%)	No. of Deaths (%)	N (%)	No. of Deaths (%)
0	3.87	2 (0.2)	0 (0)	26 (3.3)	1 (3.8)
1	5.85	23 (2.8)	2 (8.7)	91 (11.5)	7 (7.7)
2	8.82	67 (8.1)	8 (11.9)	106 (13.4)	11 (10.4)
3	13.16	127 (15.3)	20 (15.7)	150 (19.0)	12 (8.0)
4	19.42	146 (17.6)	30 (20.5)	138 (17.5)	25 (18.1)
5	28.13	138 (16.7)	47 (34.1)	129 (16.3)	17 (13.2)
6	39.66	105 (12.7)	42 (40.0)	76 (9.6)	22 (28.9)
7	53.82	87 (10.5)	43 (49.4)	29 (3.7)	9 (31.0)
8	69.33	46 (5.6)	23 (50.0)	24 (3.0)	11 (45.8)
9	83.60	39 (4.7)	29 (74.4)	14 (1.8)	6 (42.9)
≥10	93.70	48 (5.8)	39 (81.3)	6 (0.7)	4 (80.0)

Former	1
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Development and Validation of a Model to Predict 5-Year Risk of Death without ESRD among Older Adults with CKD

Table 5. Risk associated wit...

Point Total	Estimate Risk (%)	...Body Composition Study No. of Deaths (%)
0	3.87	1 (3.8)
1	5.85	7 (7.7)
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Non-Frail elderly

Frailty in patients on haemodialysis in US

Bar chart showing Frailty % across three groups:
- general elderly >65: ~7%
- Haemodialysis <65: ~35%
- Haemodialysis >65: ~50%

Frailty in patients on haemodialysis in US

Frailty %

Chart showing Frailty % by group:
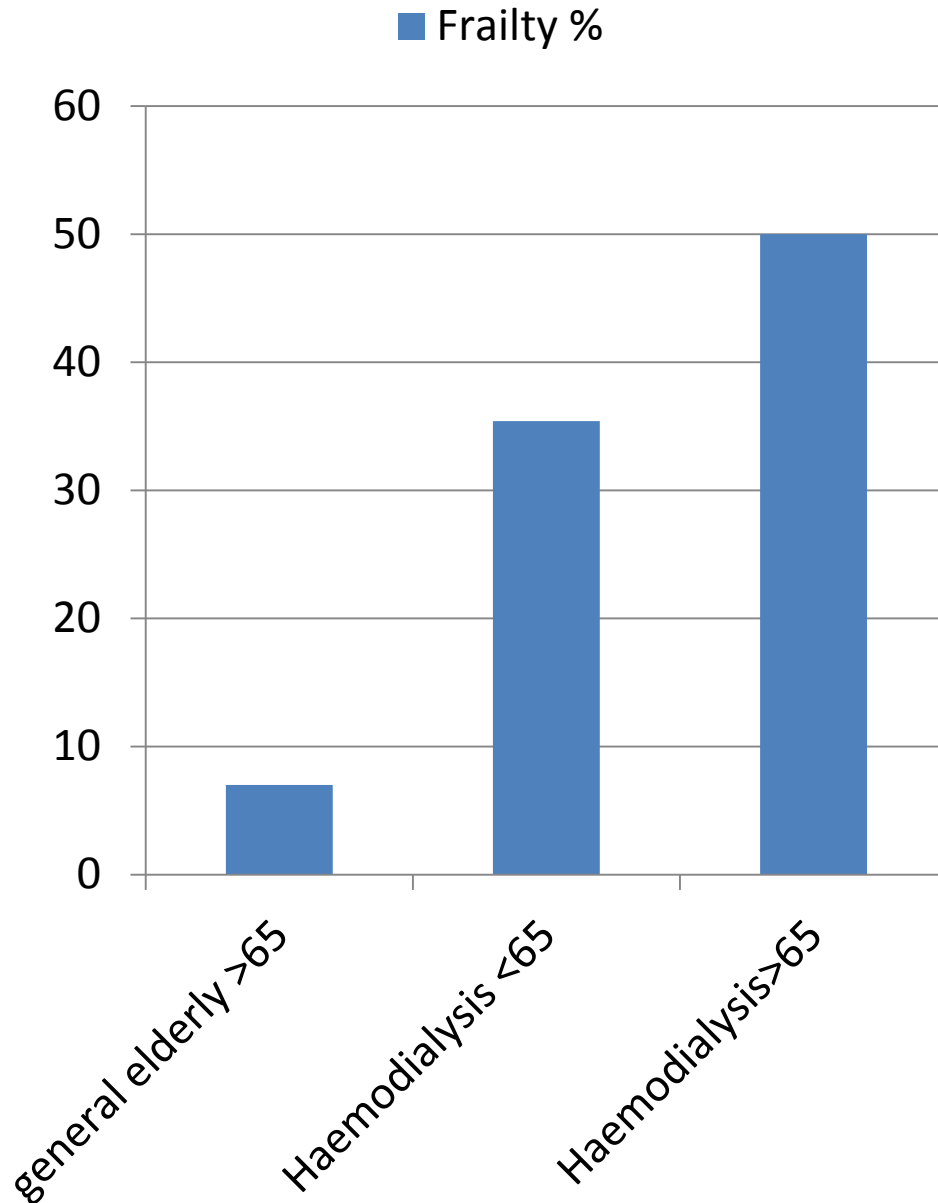- general elderly >65: ~7
- Haemodialysis <65: ~35
- Haemodialysis >65: ~50
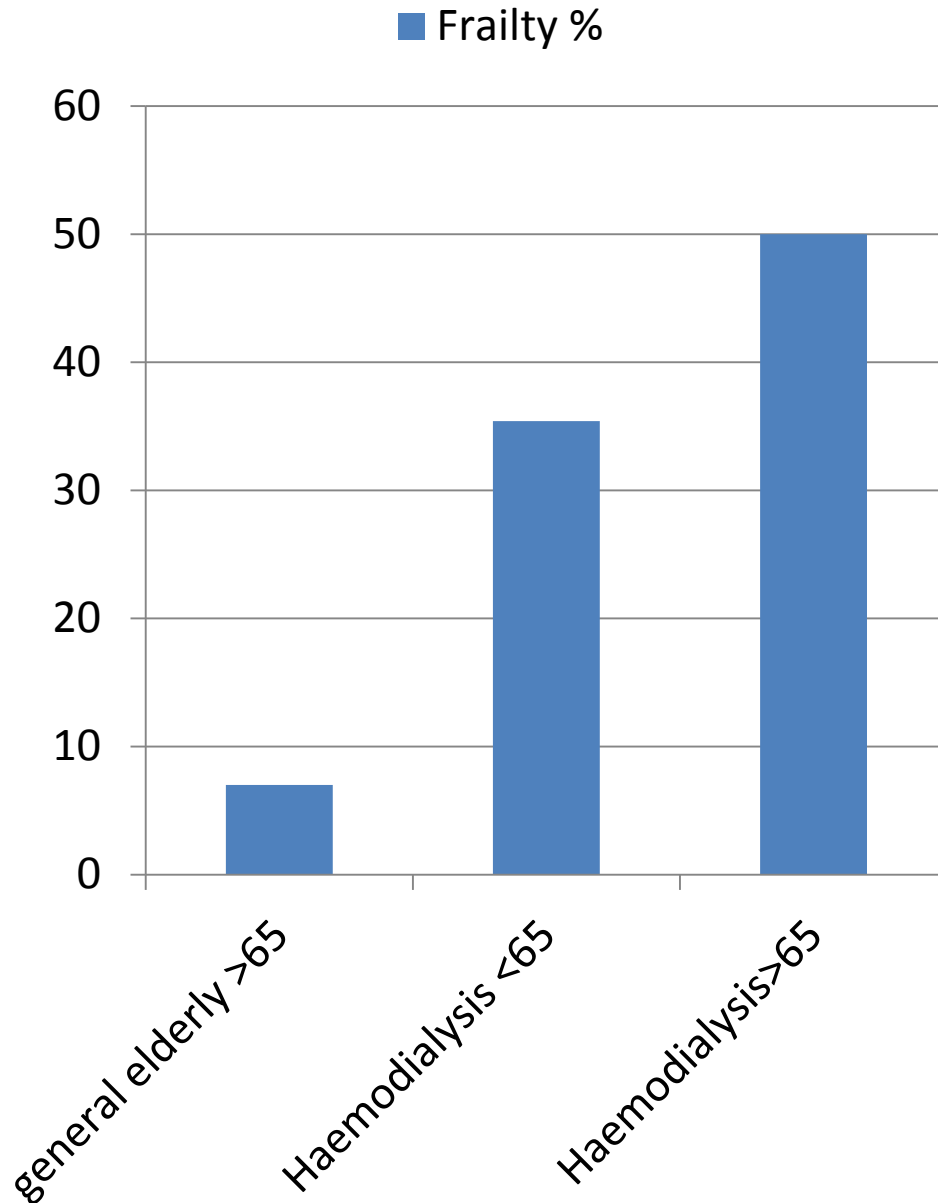
Table 2. Mortality and Hospitalization According to Frailty Status (Reference Nonfrail)

Mortality and Hospitalization	Intermediately Frail	Frail
Hazard ratio of mortality (95% CI)		
Unadjusted	2.67 (1.06–6.78)	2.90 (1.18–7.11)
Adjusted for age, sex, comorbidity, and disability	2.68 (1.02–7.07)	2.60 (1.04–6.49)
Incident rate ratio of hospitalization (95% CI)		
Unadjusted	0.74 (0.49–1.12)	1.48 (1.05–2.07)
Adjusted for age, sex, comorbidity, and disability	0.76 (0.49–1.16)	1.43 (1.00–2.03)

CI = confidence interval.

No age effect

Mac Adams-deMarco, J Am Soc Geriatry, 2013

What is frailty?

- Decreased physiologic reserves or dysregulation of multiple physiologic systems – associated with age and/or chronic illness
- Presents as composite of poor physical function, exhaustion, low physical activity and weight loss
- Associated with higher risk of falls, cognitive impairment, hospitalization and death
- More common in CKD than general population

Common clinical presentations of frailty

- **Non-specific:** extreme fatigue, unexplained weight loss and frequent infections
- **Falls:** balance and gait impairment important risk factors and are major features of frailty
- **Delirium:** rapid onset of fluctuating confusion when admitted to hospital. Associated with adverse outcomes
- **Fluctuating disability:** day to day instability resulting in good and bad days

Box 1: The CSHA Clinical Frailty Scale

1 *Very fit* — robust, active, energetic, well motivated and fit; these people commonly exercise regularly and are in the most fit group for their age

2 *Well* — without active disease, but less fit than people in category 1

3 *Well, with treated comorbid disease* — disease symptoms are well controlled compared with those in category 4

4 *Apparently vulnerable* — although not frankly dependent, these people commonly complain of being "slowed up" or have disease symptoms

5 *Mildly frail* — with limited dependence on others for instrumental activities of daily living

6 *Moderately frail* — help is needed with both instrumental and non-instrumental activities of daily living

7 *Severely frail* — completely dependent on others for the activities of daily living, or terminally ill

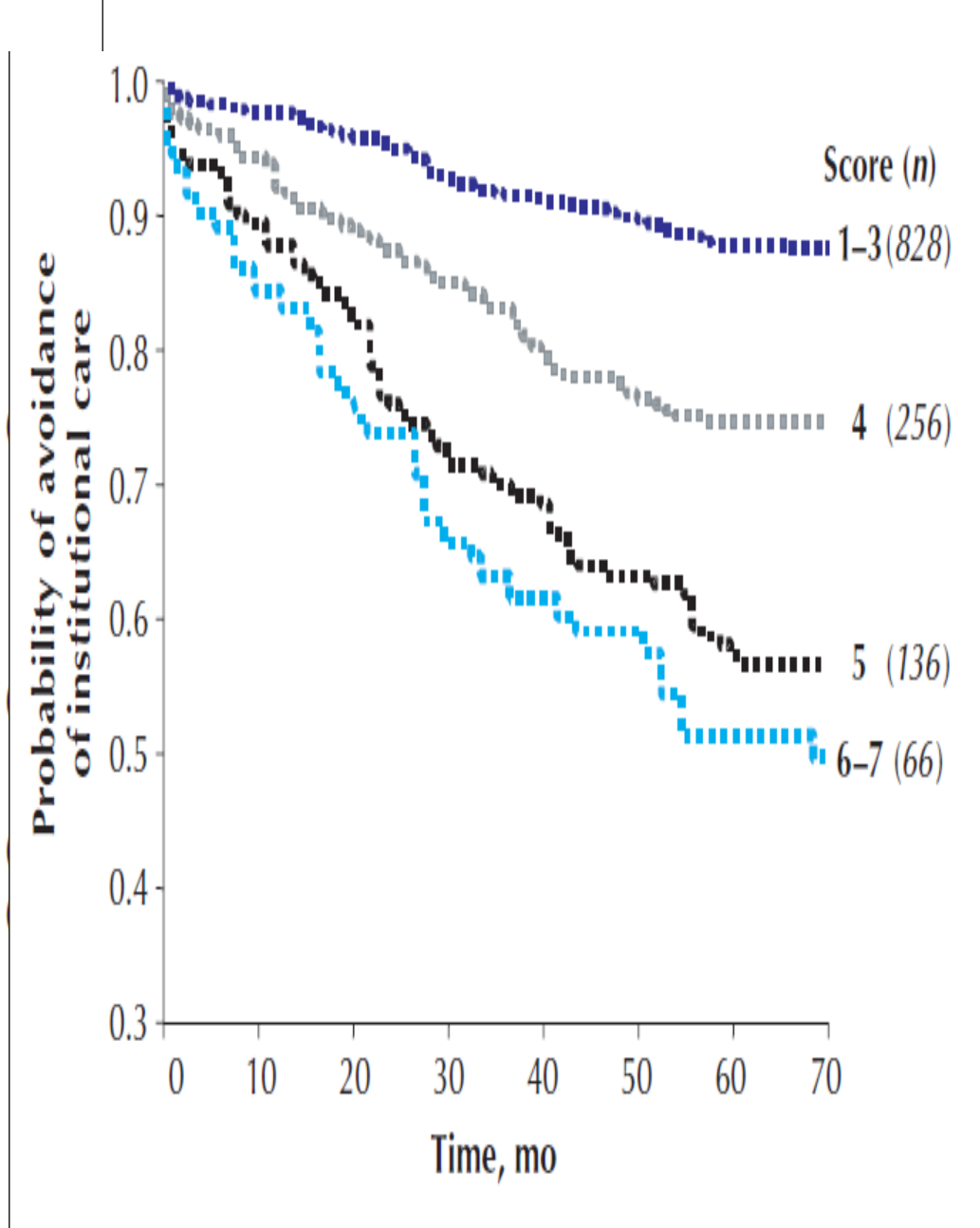Note: CSHA = Canadian Study of Health and Aging.
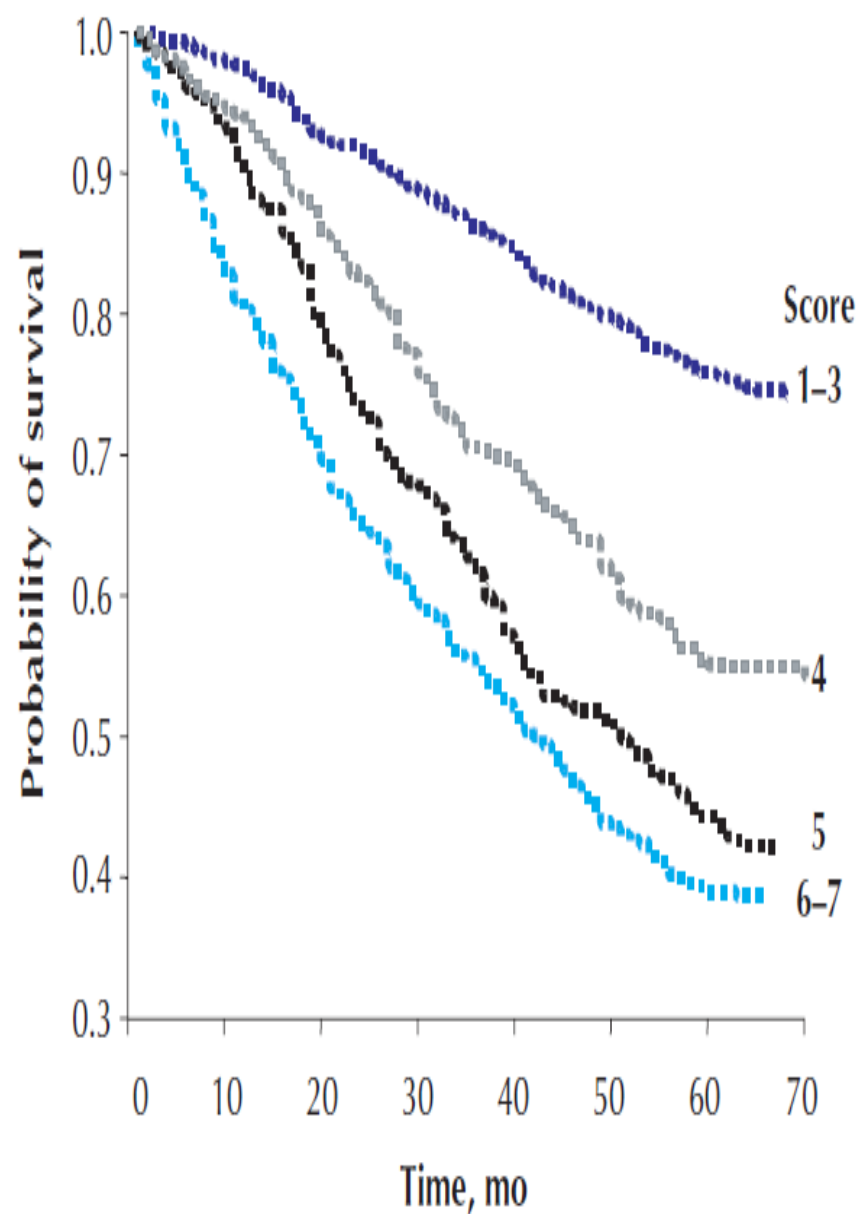
Rockwood et al, CMAJ 2005

Fig. 1: Kaplan–Meier curves, adjusted for age and sex, for study participants (n) over the medium term (5–6 years), according to their scores on the CSHA Clinical

Q3: What is the the most reliable model to predict mortality in older patients with CKD stage 3b or higher

3.1 We recommend the Bansal score predicts sufficiently well the risk for mortality in older patients with CKD stage 3b or higher not on dialysis

3.2 We recommend that in patient at low risk in the Bansal score, a score including assessment of frailty should be performed

To start or not to start dialysis
is that the question?

Development of a risk stratification algorithm to improve patient-centered care and decision making for incident elderly patients with end-stage renal disease

Cécile G. Couchoud[1], Jean-Baptiste R. Beuscart[2,3], Jean-Claude Aldigier[4], Philippe J. Brunet[5] and Olivier P. Moranne[6,7] on behalf of the REIN registry

[1]REIN Registry, Agence de la biomédecine, Saint Denis la Plaine, France; [2]Department of Biostatistics, EA2694, Lille School of Medicine

Clinical score to predict 6 month prognosis in patients >75 yrs; French Rein Registry

- Body mass index <18.5 kg/m^2 (1 point)
- Congestive heart failure stages III-IV (2 points)
- Peripheral vascular disease stages III-IV (2 points)
- Dysrhythmia (1 point)
- Active malignancy (1 point)
- Severe behavioural disorder (2 points)
- Total dependency for transfers (3 points)
- Unplanned dialysis (2 points)

Couchoud et al. NDT 2009

Death and withdrawal from dialysis after 6 months by point score

Couchoud et al, NDT 2009

- Dataset 2001-2003
- Baseline information at dialysis initiation included
    - age, gender,
    - eGFR based on creatinine and the MDRD formula
    - body mass index (BMI)
    - serum albumin the month preceding dialysis start
    - diabetes (type 1 or 2)
    - congestive heart failure (New York Heart Association stages I to IV), ischaemic heart disease (including history of myocardial infarction, coronary vascular disease, coronary artery bypass surgery, angioplasty or abnormal angiography)
    - peripheral vascular disease (Leriche classification stages I to IV)
    - cerebrovascular disease
    - arrhythmia
    - chronic obstructive pulmonary disease (COPD)
    - malignancy, liver cirrhosis,
    - mental disorders (defined to include dementia and psychosis)
    - initial dialysis modality
    - late referral (defined as starting dialysis less than 3 months after first contact with the nephrology department .
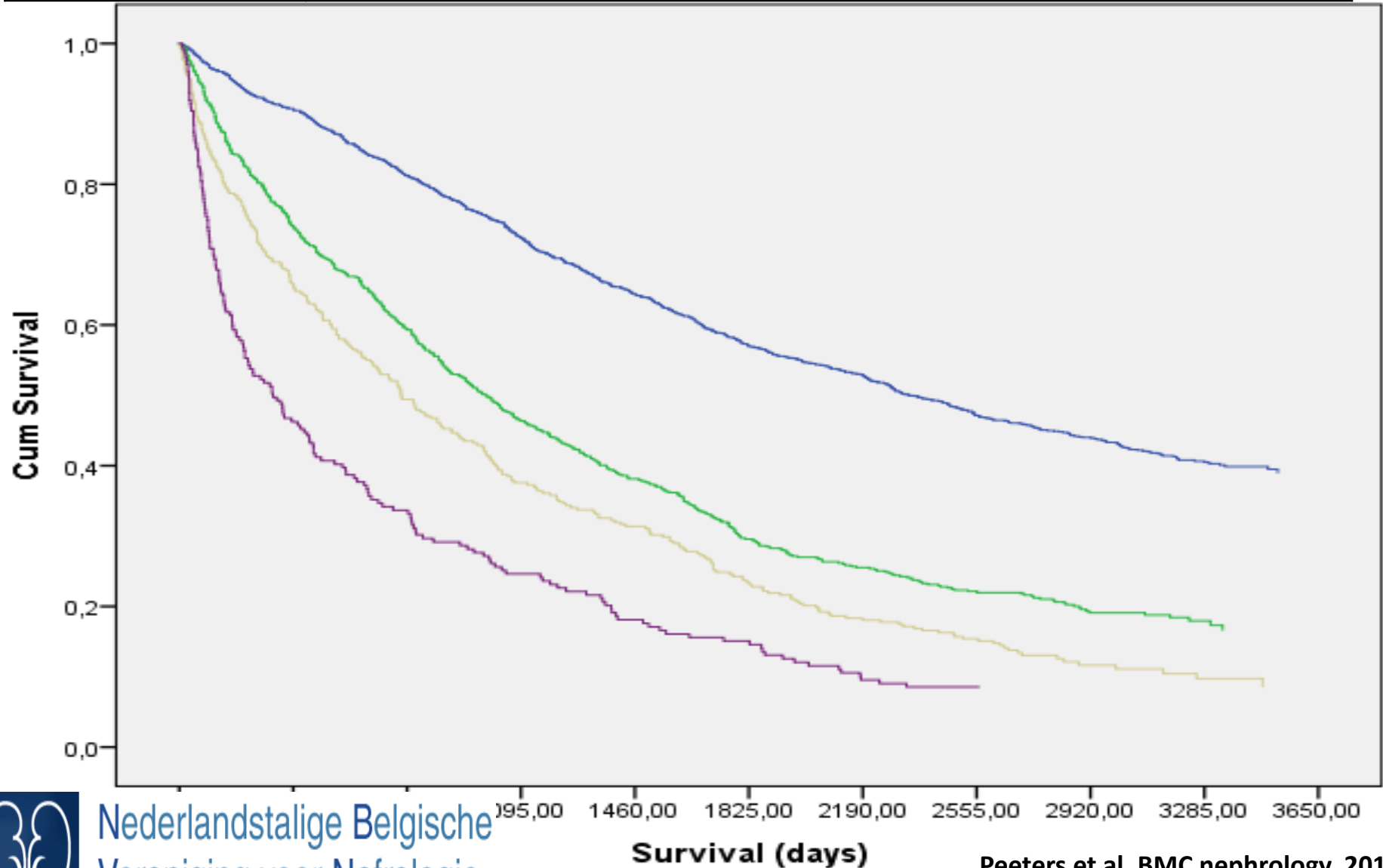
Peeters et al, BMC nephrology, 2016

- During the observation period, 3472 patients started renal replacement therapy.

- For 793 patients (22.8%) information on one parameter of the REIN score was missing, making aREIN score calculation impossible, leaving 2679 patients available for analysis. There was no difference between those with versus without missing data.

- More than half (56.4%) and almost three quarters (70.3%) of those older than 85 and 90 years of age respectively at start of dialysis had an aREIN stage of 3 or 4.

- We registered 276 (8.6%), 453 (14.1%) and 681 (19.6%) deaths at 3, 6 and 12 months respectively.
- Patients who died during the first 3 months were
    - older (74.3 ±9.9 vs 67.0±14.5 years, p<0.001),
    - had a higher aREIN score at start (6.4±2.7 vs 3.9 ±2.7, p<0.001)
    - a lower serum creatinine (6.1±3.8 vs 6.7±3.1mg/dl, p<0.01)
    - a lower body weight (69.4±15.5 vs 71.7±15.7kg, p=0.03)

Risk factors		Points
Gender		
	Male	1
	Female	0
Age (years)		
	[75-80[	0
	[80-85[	0
	[85-90[	2
	>=90	3
Congestive heart failure		
	No	0
	Stage I-II	2
	Stage III-IV	4
Peripheral vascular disease		
	No or stage I-II	0
	Stage III-IV	1
Arrhythmia		
	No	0
	Yes	1
Cancer		
	No	0
	Yes	2
Severe behavioural disorder		
	No	0
	Yes	2
Serum Albumin (g/l)		
	<25	5
	[25-30[	3
	[30-35[	2
	≥35	0
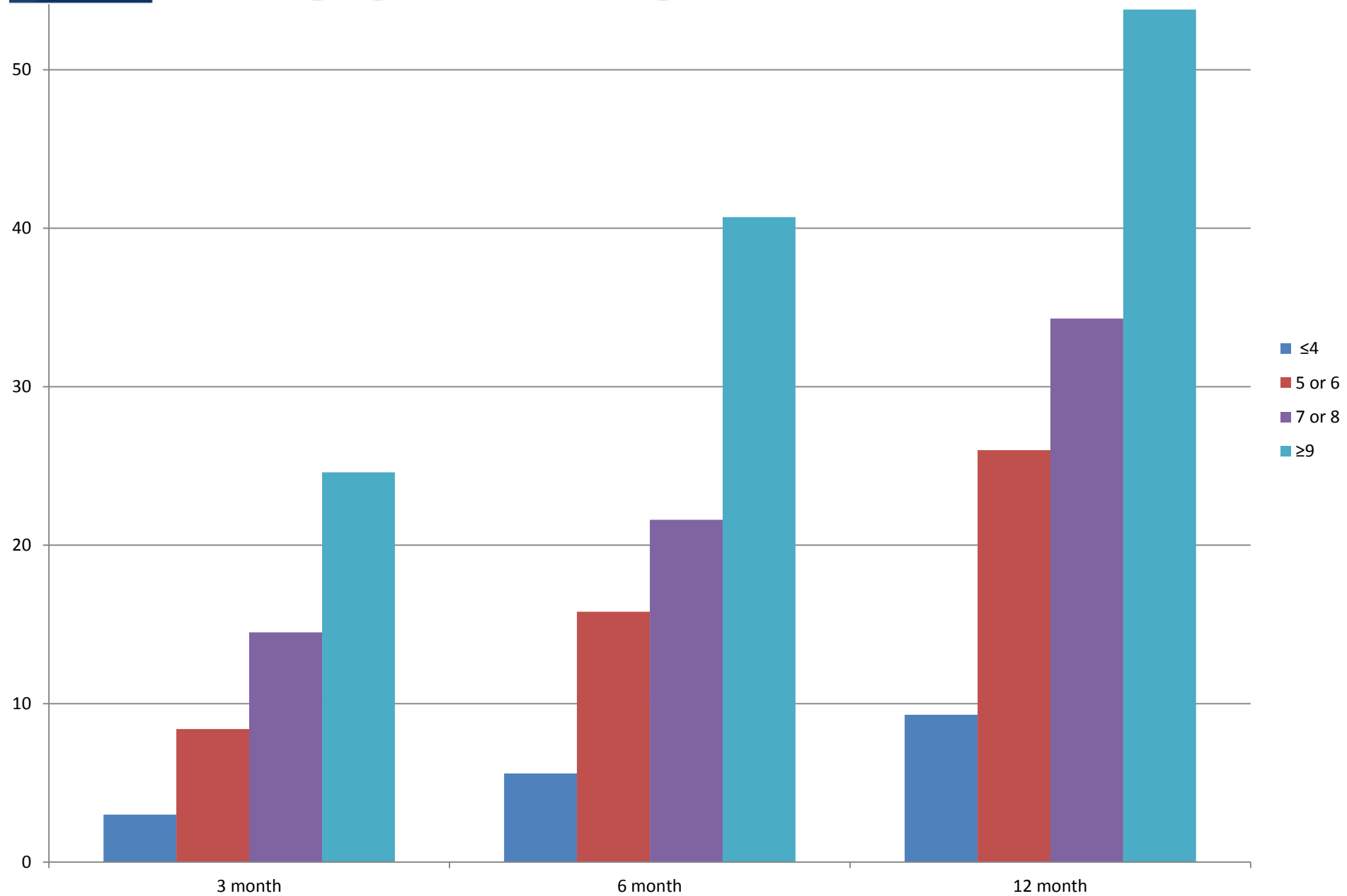
risk stratification for survival

aREINscore	N								
≤4	1381	1236	1102	979	865	805	720	454	229
5-6	458	367	287	235	183	158	134	81	40
7-8	222	166	127	105	78	61	50	24	14
≥9	92	66	49	35	27	19	14	7	5

Nederlandstalige Belgische Vereniging voor Nefrologie

Peeters et al, BMC nephrology, 2016
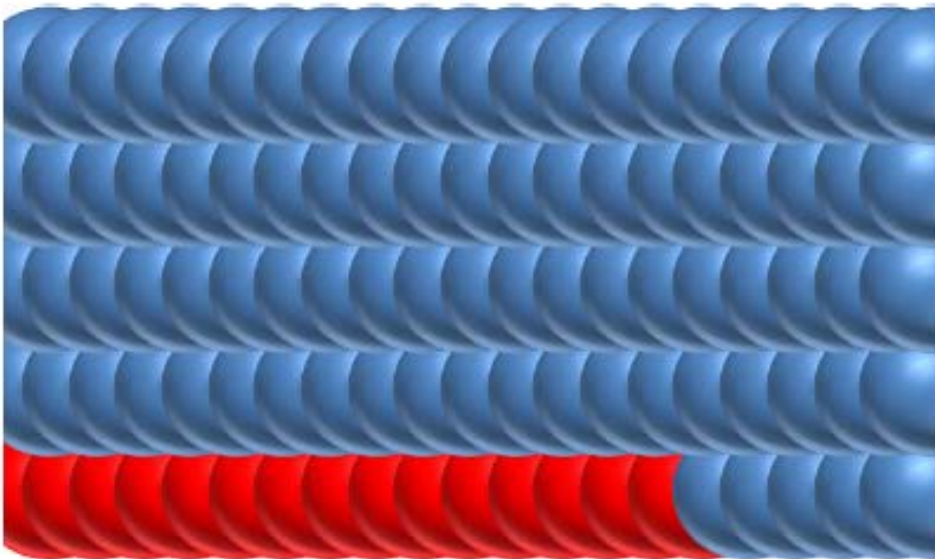
3 month survival risk stratification
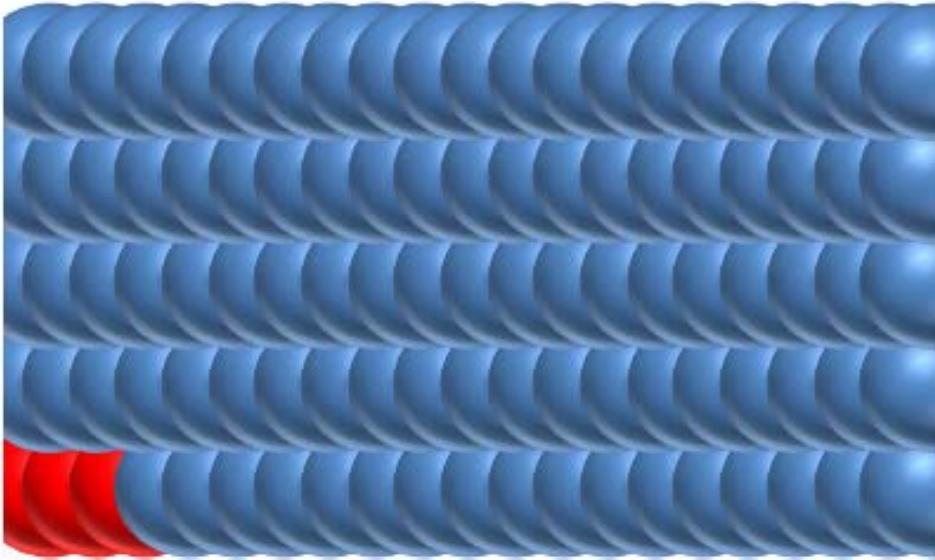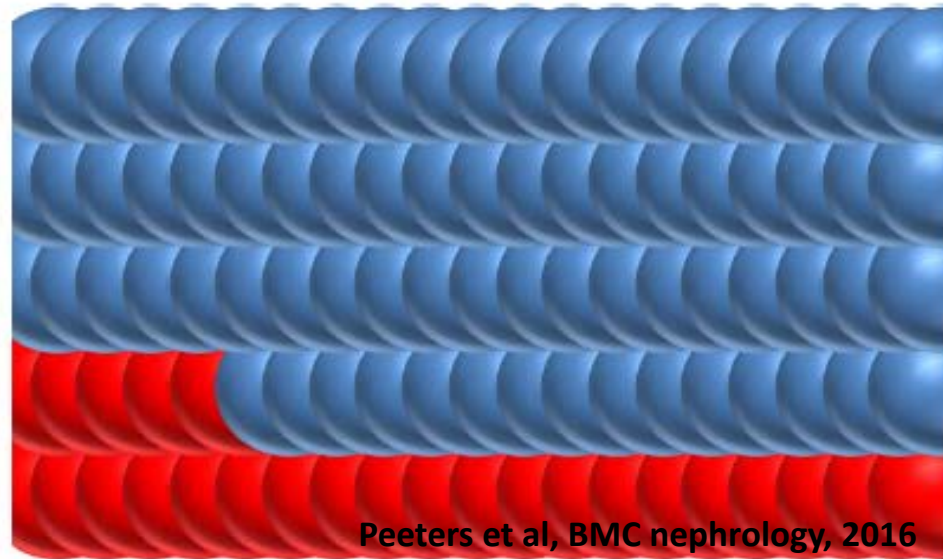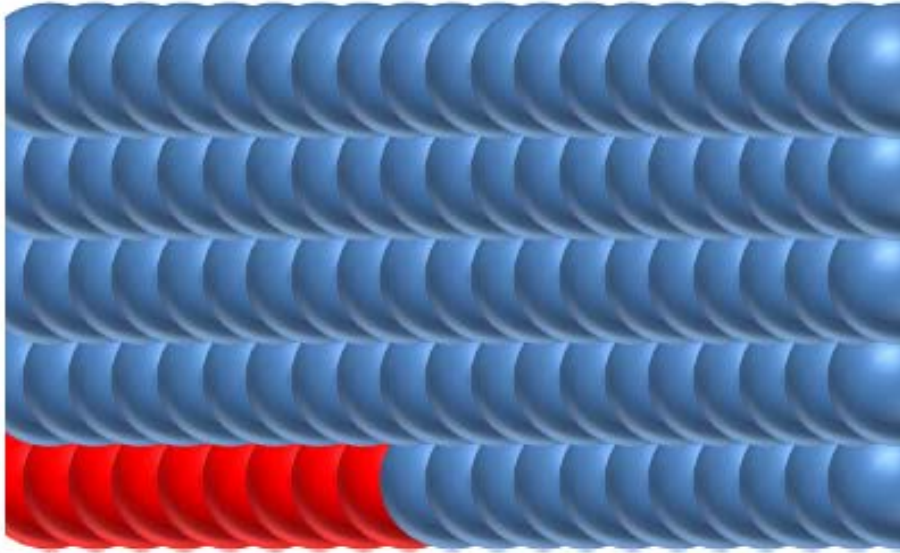
aREIN score ≤4
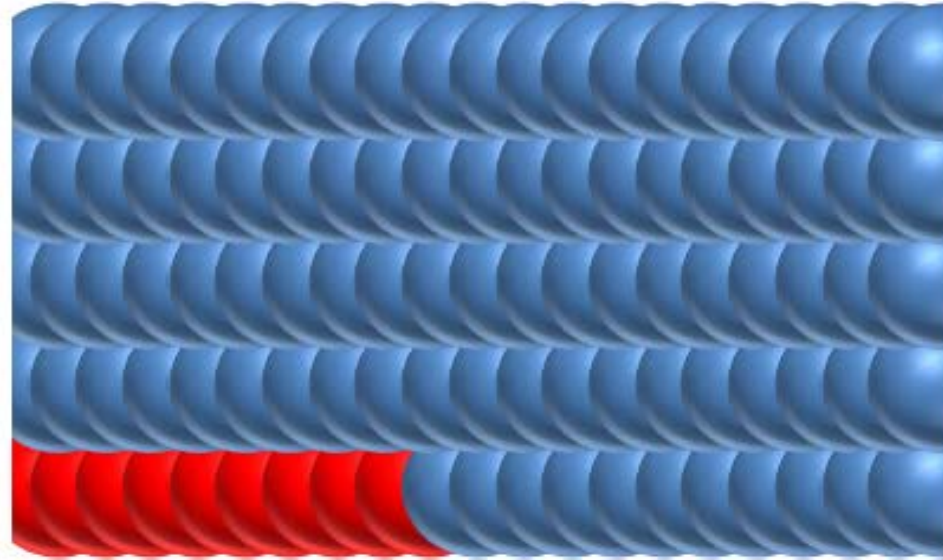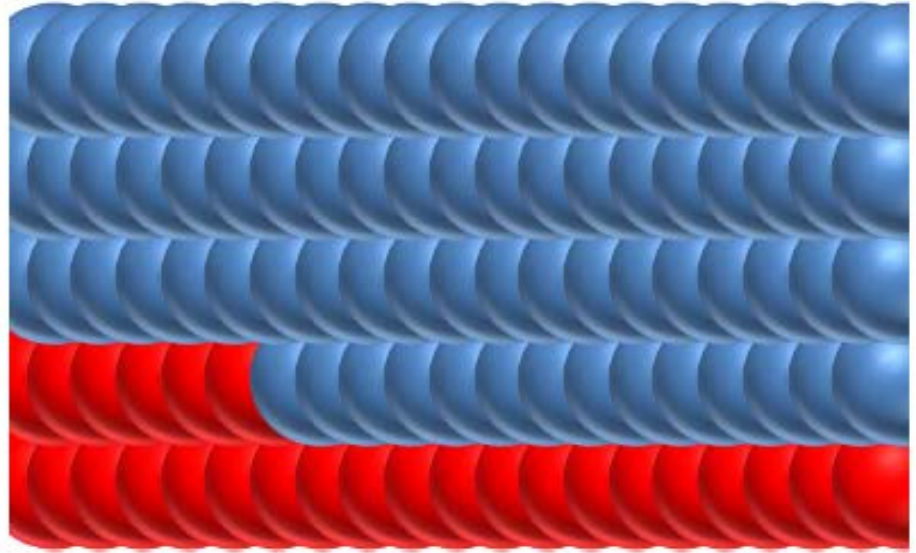
aREIN score 5-6

aREIN score 7-8

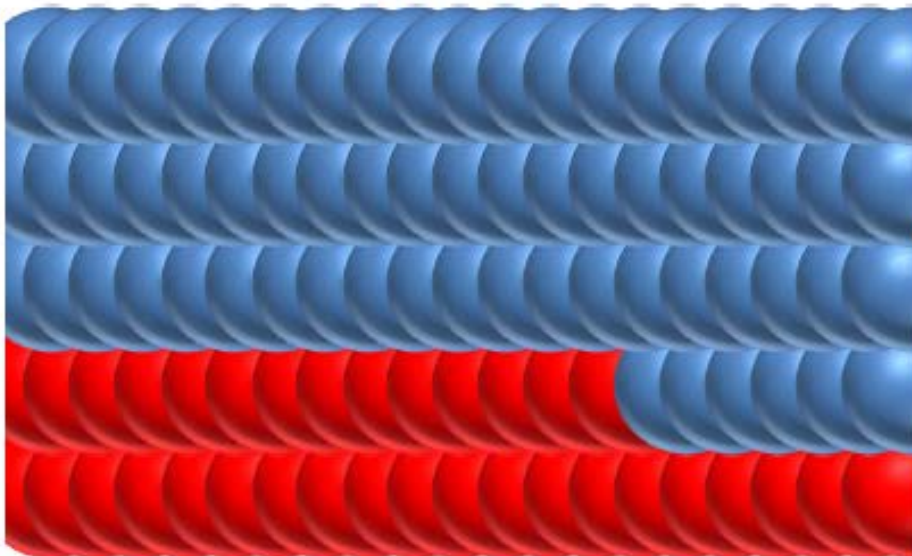aREIN score≥9

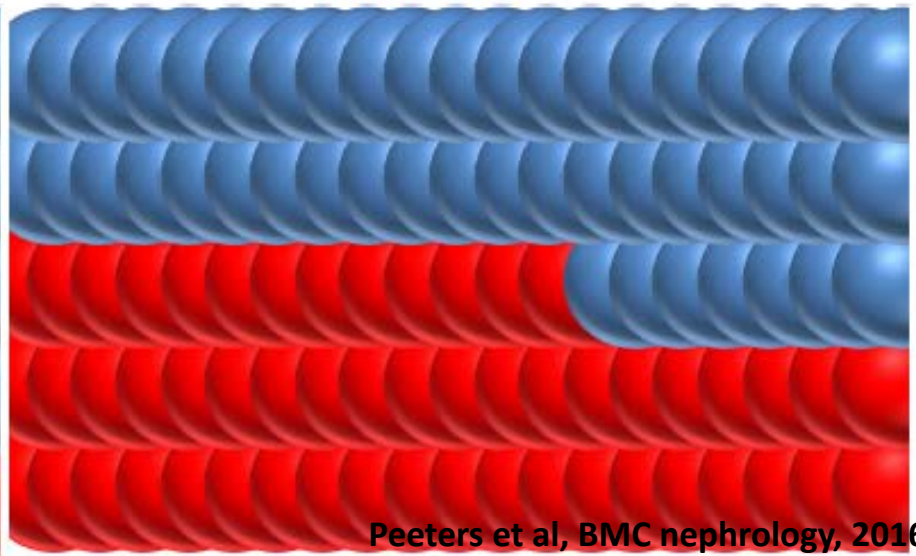# 12 month survival risk stratification
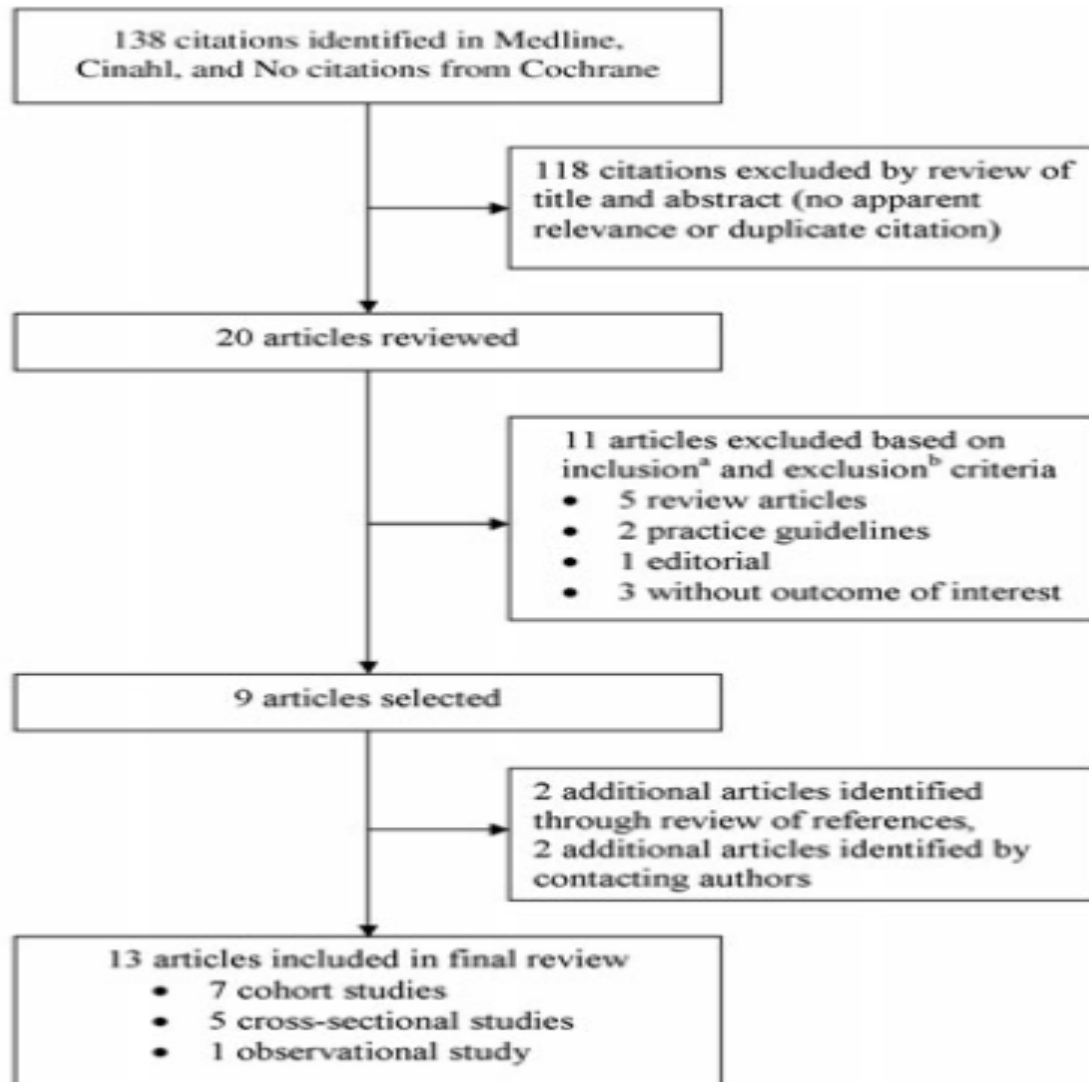
aREIN score ≤4

aREIN score 5-6

aREIN score 7-8

aREIN score≥9

Q3: What is the the most reliable model to predict mortality in older patients with CKD stage 3b or higher

3.1 We recommend the Bansal score predicts sufficiently well the risk for mortality in older patients with CKD stage 3b or higher not on dialysis

3.2 We recommend that in patient at low risk in the Bansal score, a score including assessment of frailty should be performed

3.3 We recommend the REIN score predicts sufficiently well the risk for mortality in patients starting renal replacement therapies

A systematic review on conservative care

138 citations identified in Medline, Cinahl, and No citations from Cochrane

118 citations excluded by review of title and abstract (no apparent relevance or duplicate citation)

20 articles reviewed

11 articles excluded based on inclusion[a] and exclusion[b] criteria
- 5 review articles
- 2 practice guidelines
- 1 editorial
- 3 without outcome of interest

9 articles selected

2 additional articles identified through review of references, 2 additional articles identified by contacting authors

13 articles included in final review
- 7 cohort studies
- 5 cross-sectional studies
- 1 observational study

[a]Inclusion criteria: 1) study of chronic kidney disease, 2) patients have stage 5 or "end-stage" disease, 3) at least some patients in the study are managed without dialysis, 4) outcomes include prognosis, symptoms, and/or quality of life, 5) original research.
[b]Exclusion criteria: 1) study of acute renal failure, 2) review article, practice guideline, editorial,

Ageism vs the technical imperative, applying the GRADE framework to the evidence on hemodialysis in very elderly patients

Bjorg Thorsteinsdottir[1]
Victor M Montori[2]
Larry J Prokop[3]
Mohammad Hassan Murad[2]

[1]Division of Primary Care Internal Medicine, [2]Division of General Internal Medicine, Knowledge and Evaluation Research Unit, [3]Library Services, Mayo Clinic, Rochester, MN, USA

Conclusion: Following the GRADE framework, recommendation for HD in this population would be weak. This means it should not be considered standard of care and should only be started based on the well-informed patient's values and preferences. More studies are needed to delineate the true treatment effect and to guide future practice and policy.

Role of supportive care in advanced CKD management

Time

Dialysis Transplant   Access   Surgery   Antibiotics

Aggressive treatment

Supportive care

Bereave-ment
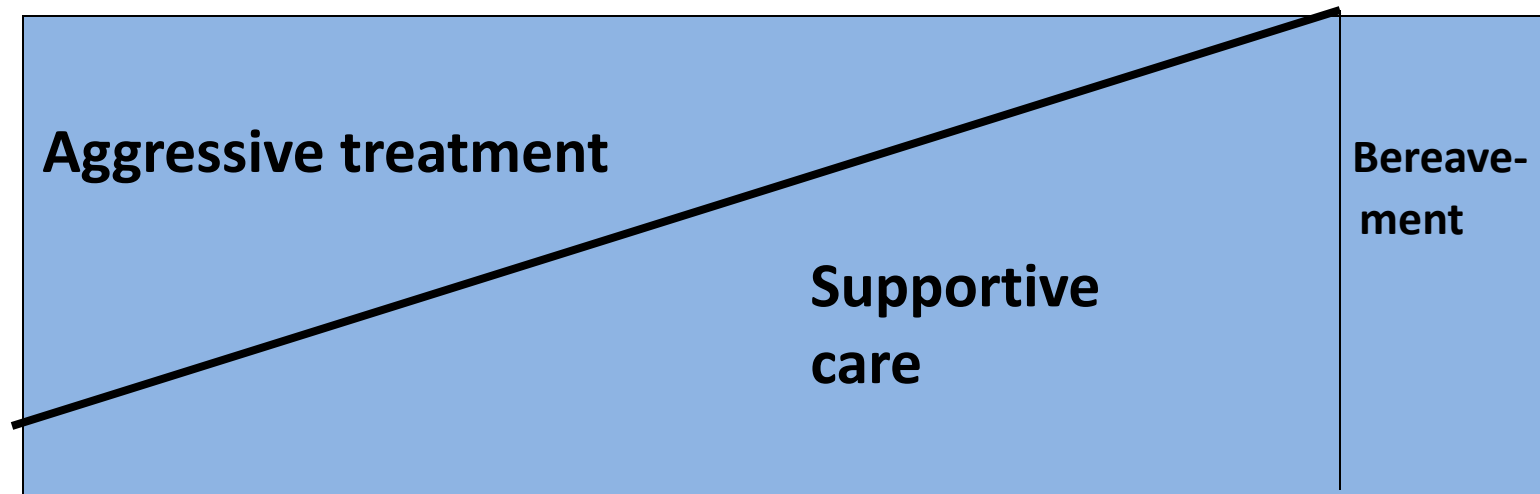
Pain control   Symptom control   Psycho-social support
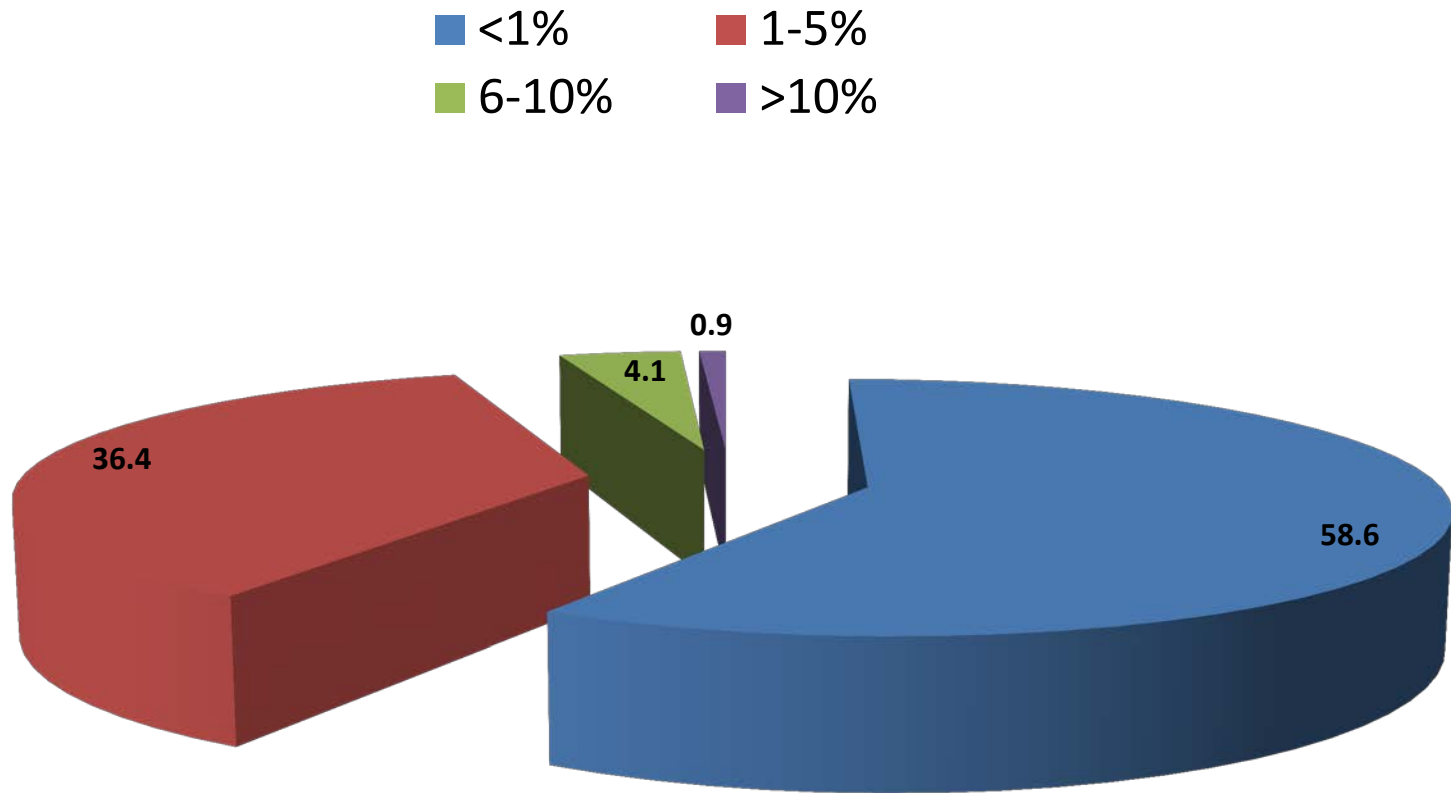**Awareness of patient goals and concerns**

Withdrawal of dialysis:
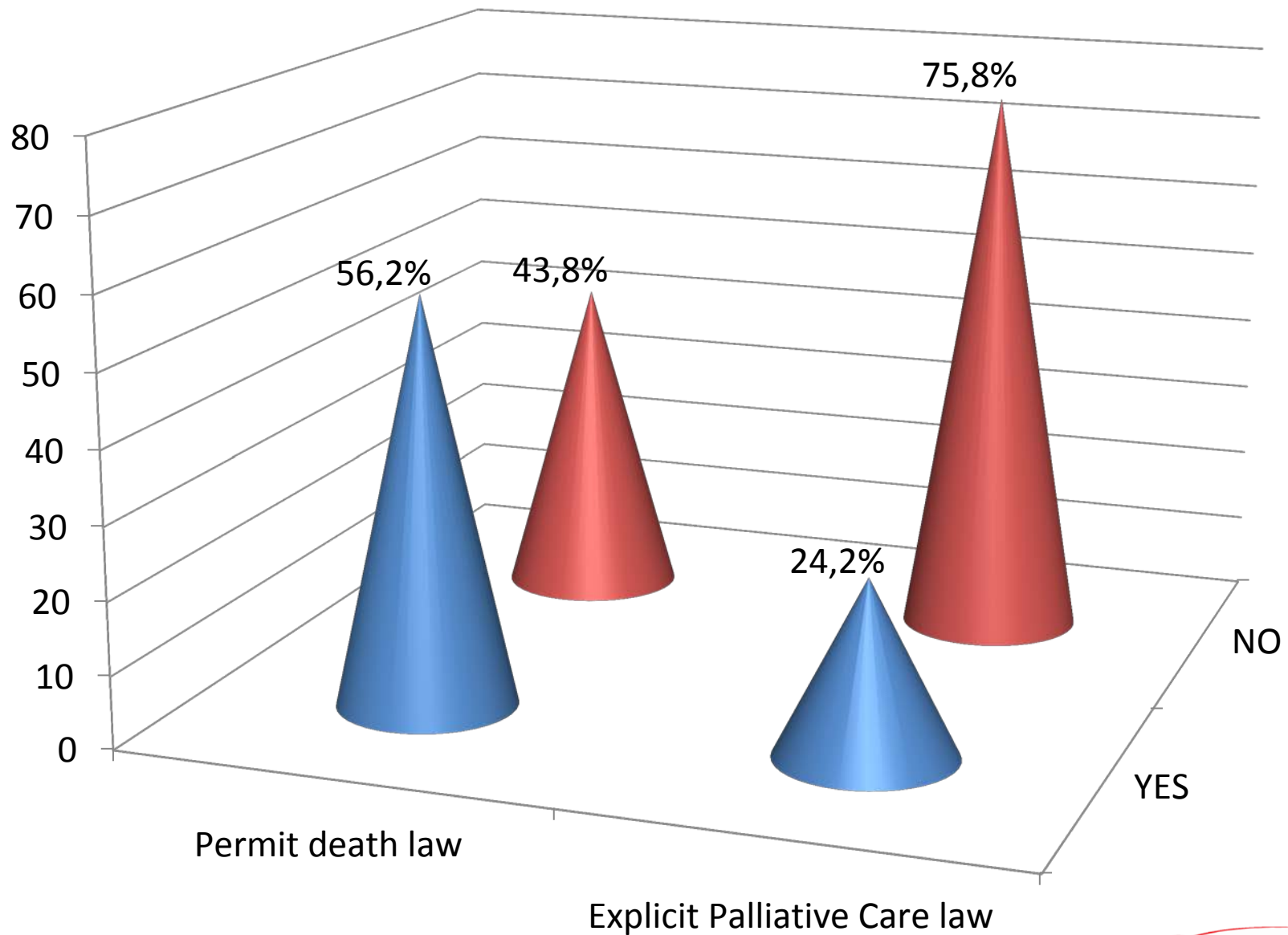# European Nephrologists perceptions

Percentage of patients withdrawn from dialysis over the last 12 months

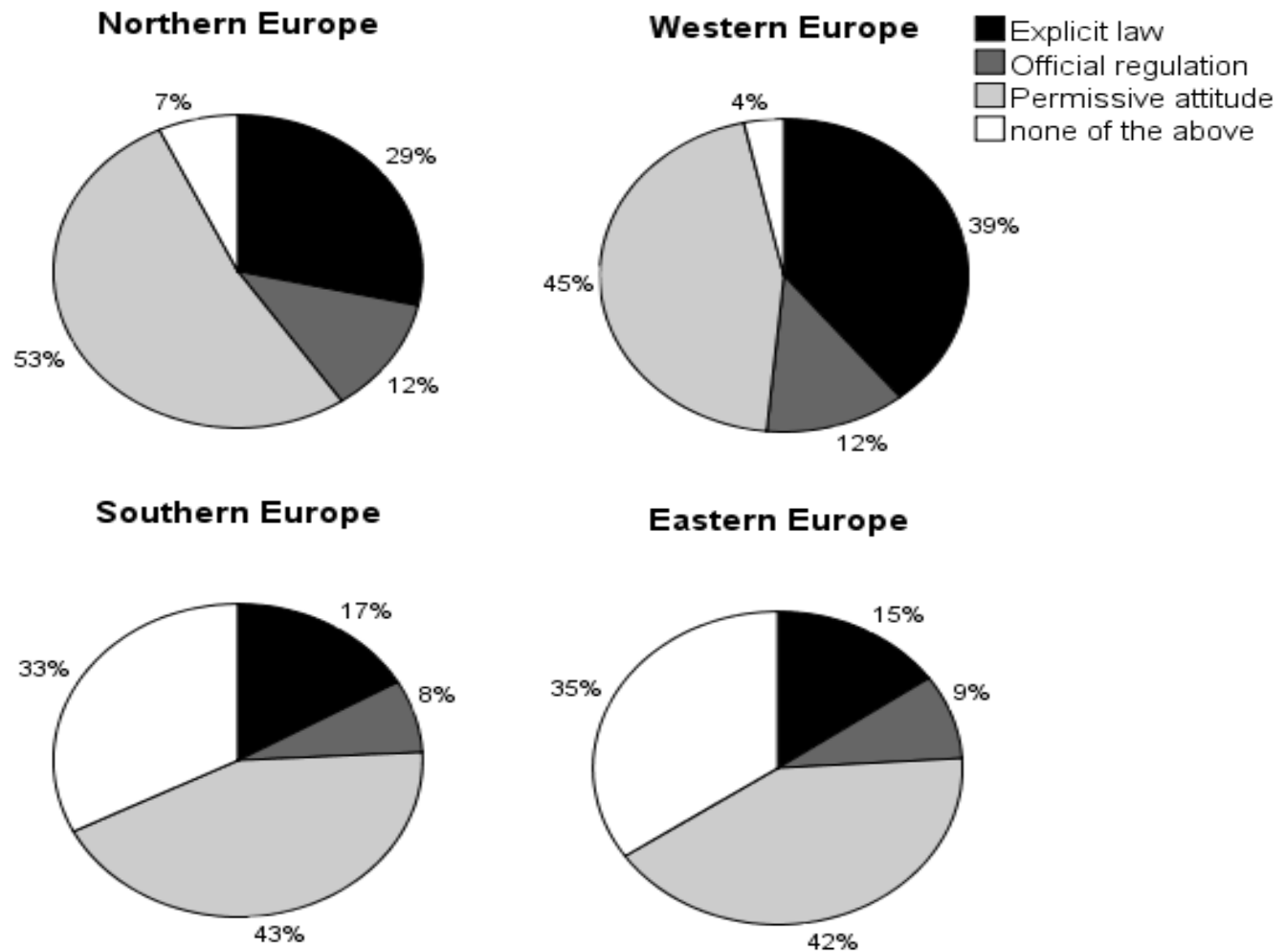**Poll the audience**

Percentage of patients withdrawn from dialysis over the last 12 months

- ■ <1%
- ■ 1-5%
- ■ 6-10%
- ■ >10%

ERBP

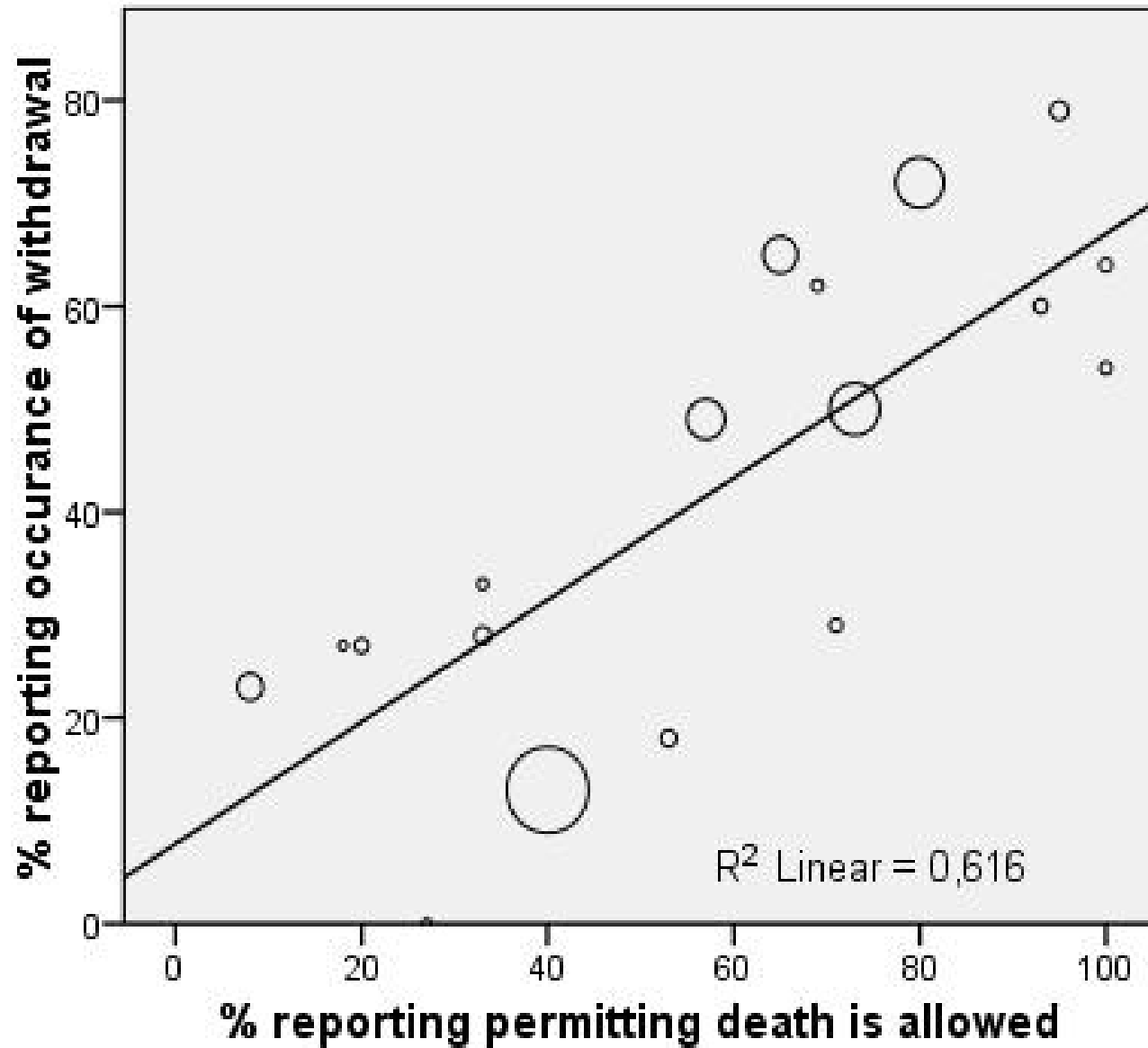# Physician perception of legal background of dialysis withdrawal

Physician perception of legal background of dialysis withdrawal

Panel B

Physician perception of legal background of dialysis withdrawal

EDITORIALS

Why is talking about dying such a challenge?

Much more needs to be done to encourage the conversation

Kirsty Boyd *consultant in palliative medicine*[1], Scott A Murray *St Columba's Hospice chair of primary palliative care*[2]

[1]Royal Infirmary of Edinburgh, Edinburgh, UK; [2]Primary Palliative Care Research Group, Medical School, University of Edinburgh, Edinburgh EH8 9AG, UK

I believe that patients who actually withdrew did this because

other reasons

life expectancy does not outweigh suffering

lack of suitable transport

relieve burden of family

Poll the audience

I believe that patients who considered withdrawal but continued dialysis

afraid of stop medical supervision

lack of social support at home

lack of suitable facilities for PC

lack of knowledge of nephrologist on PC

lack of commitment nephrologist

dont know

Poll the audience

I believe that patients who actually withdrew did this because

Categories (top to bottom): other reasons, life expectancy does not outweigh suffering, lack of suitable transport, relieve burden of family

Axis: 0 10 20 30 40 50 60 70 80

I believe that patients who considered withdrawal but continued dialysis

Categories (top to bottom): afraid of stop medical supervision, lack of social support at home, lack of suitable facilities for PC, lack of knowledge of nephrologist on PC, lack of commitment nephrologist, dont know
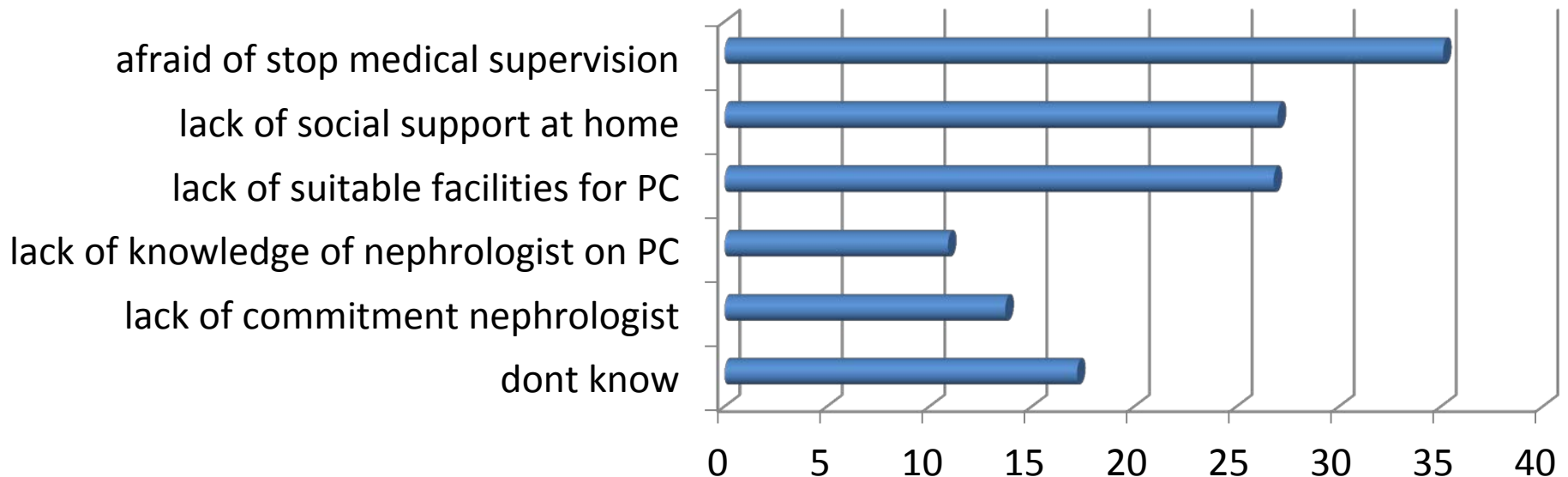
Axis: 0 5 10 15 20 25 30 35 40
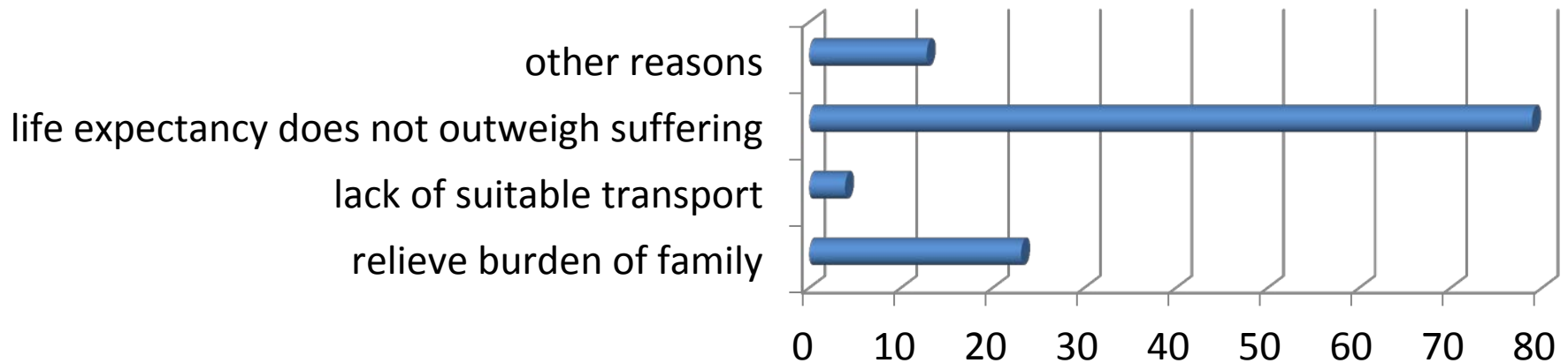
I believe more patients would opt for withdrawal if

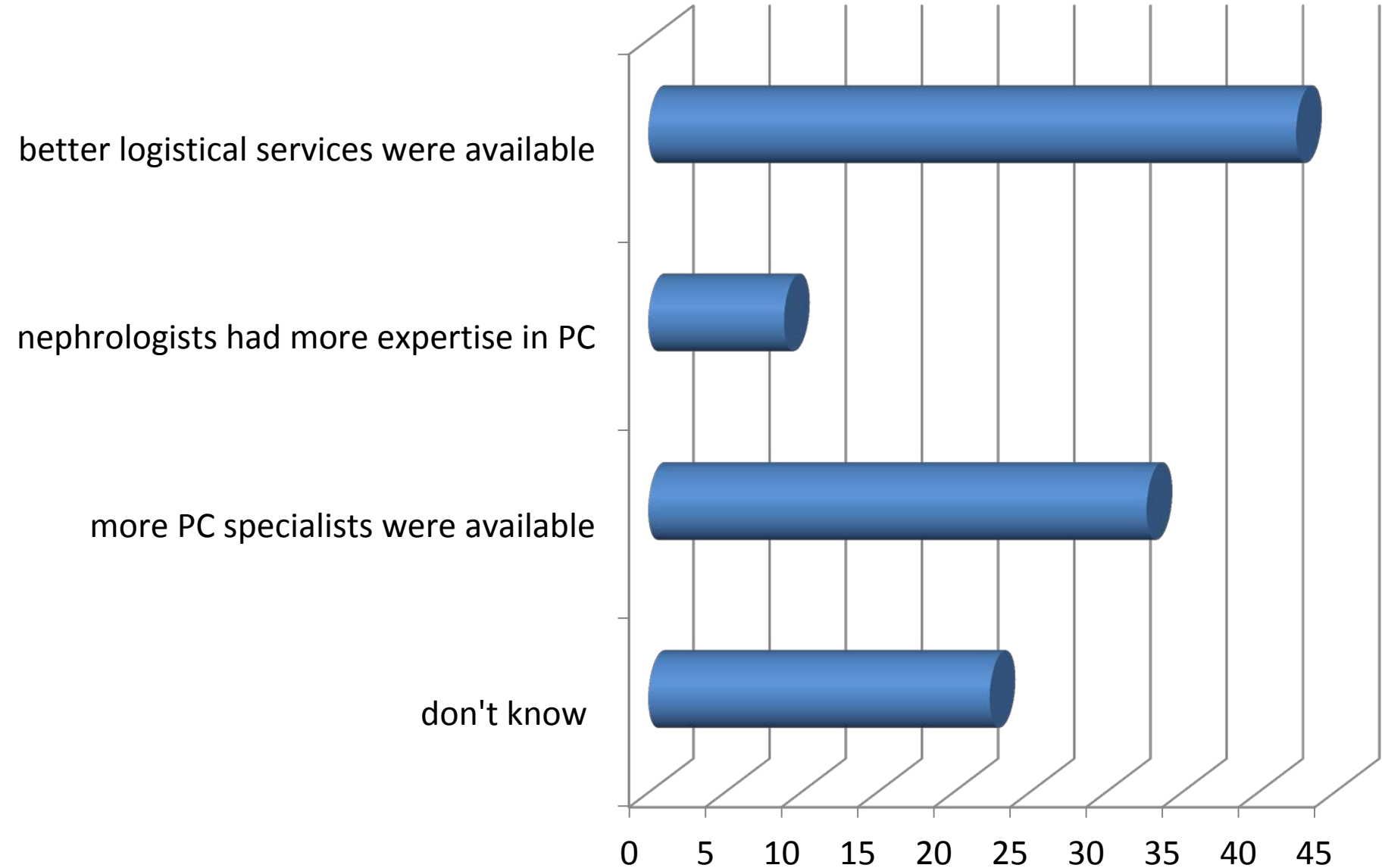better logistical services were available

nephrologists had more expertise in PC

more PC specialists were available

don't know

Poll the audience

I believe more patients would opt for withdrawal if

Establishing a Shared Decision-Making Relationship.

- Recommendation 1:
  Develop a physician-patient relationship for shared decision making.

- Recommendation 2:
  Fully inform AKI, stage 4 and 5 CKD, and ESRD patients about their diagnosis.

- Recommendation 3:
  Give all patients with AKI, stage 5 kindey disease, or ESRD an estimate of prognosis specific to their overall condition

Moss A H CJASN 2010;5:2380-2383 Summary of adult patient recommendations by RPA/ASN.

Making a Decision to not initiate or to Discontinue Dialysis.

- **Recommendation 4:**

  Institute advance care planning.

- **Recommendation 5:**

  If appropriate don't start or stop dialysis for patients with AKI or ESRD in certain well-defined situations (always include conservative management):
  - Patients with decision-making capacity who fully informed voluntary refuse dialysis or request that dialysis be stopped
  - Patients who no longer possess decision-making capacity who have previously indicated refusal of dialysis in an advance directive or whose legal representative refuses dialysis
  - Patients with irreversible and profound neurological impairment

- **Recommendation 6:**

  Consider forgoing dialysis for AKI or ESRD patienst who have a very poor prognosis or for whom dialysis cannot be provided safely
  - unable to cooperate eg demented pt who pulls out dialysis needles or too unstable eg severe hypotension
  - terminal illness from a non-renal cause
  - older than 75 y and very poor prognosis (surprise question, high comorbidity, Karnofsky <40 or severe chronic malnutrition alb<25 g/l)

Moss A H CJASN 2010;5:2380-2383 Summary of adult patient recommendations by RPA/ASN.

Resolving Conflicts about what decisions to make.

- **Recommendation 7:**
  Consider time-limited trial of dialysis when uncertain prognosis or no consensus.

- **Recommendation 8:**
  Establish a systematic due process approach for conflict resolution if there is disagreement about what decision to make regarding dialysis.

Providing effective palliative care.

- **Recommendation 9:**
  To improve patiënt-centered outcomes, offer palliative care services and interventions to all AKI, CKD and ESRD patienst who suffer from burden of their disease.

- **Recommendation 10:**
  Use a systematic approach to communicate about diagnosis, prognosis, treatment options, and goals of care.

Caring vs Curing

Caring: compassion, respect and concern for the other
vs
Curing: biomedical intervention

Question 1

- **A 85 year old women with long standing diabetes and amputations, dialysis dependence, bilateral diabetic retinopathy, is hospitalised because of diarrhea.**

- **A last Chest X ray before dismission shows an enlarged hilus, suspicious for a malignancy. What do you do?**
  - **A: you plan a CT thorax and a bronchoscopy to establish the diagnosis more certain.**
  - **B: you plan a CT thorax, a PET scan, a bone scintigraphy and a bronchoscopy for a complete staging.**
  - **C: you just dismiss the patient as planned**
  - **D: You ask the opinion of the patient and discuss the option of withdrawal of dialysis if things go worse**
  - **E: You ask the opinion of the family, but do not speak with the patient**

Question 2

- **Your 85 year old grandmother with long standing diabetes and amputations, dialysis dependence, bilateral diabetic retinopathy, is hospitalised because of diarrhea.**

- **A last Chest X ray before dismission shows an enlarged hilus, suspicious for a malignancy. What do you do?**
  - **A: you plan a CT thorax and a bronchoscopy to establish the diagnosis more certain.**
  - **B: you plan a CT thorax, a PET scan, a bone scintigraphy and a bronchoscopy for a complete staging.**
  - **C: you just dismiss the patient as planned**
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Question3

- **You suffer from an incurable disease. Whom would you prefer to have on your bedside**

Question3

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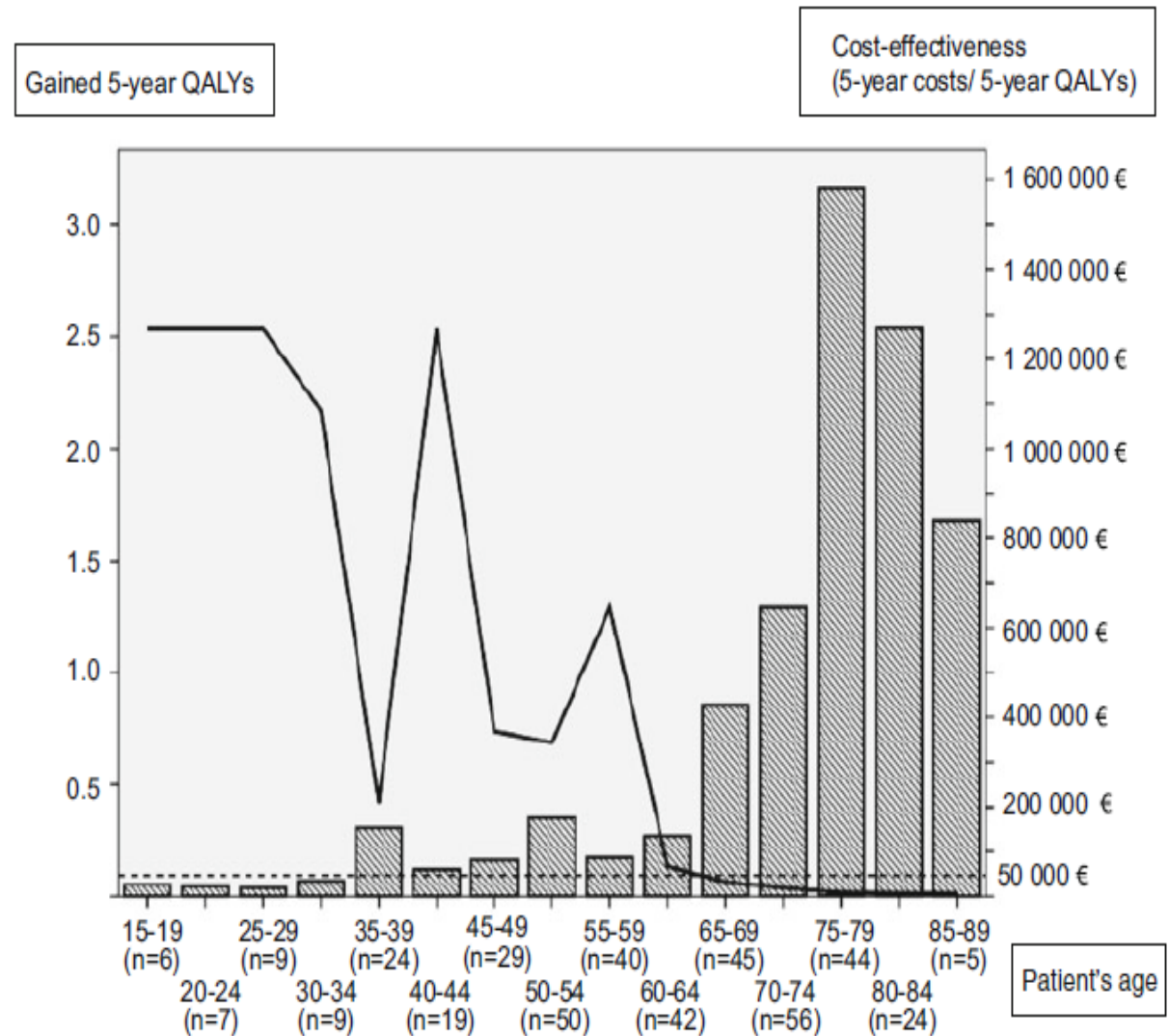 - **A: the world authority for that disease**

Question3

- **You suffer from an incurable disease. Whom would you prefer to have on your bedside**
  - **A: the world authority for that disease**
  - **B: your best friend**

Question3

- **You suffer from an incurable disease. Whom would you prefer to have on your bedside**
  - **A: the world authority for that disease**
  - **B: your best friend**
  - **C: a physician who takes care of your symptoms, and listens to you**

RRT at ICU: a cost utility analysis

Fig. 2 Five-year cost utility and gained 5-year quality-adjusted life years (QALYs) for acute renal replacement therapy stratified according to age. *Bars* mark cost utility and *solid line* gained QALYs in different age groups. *Dotted line* marks the limit for cost-effective treatment (50,000 €/QALY)

Gained 5-year QALYs

Cost-effectiveness (5-year costs/ 5-year QALYs)

Patient's age

Laukkanen et al, Intensive Care Medicine, 2012

Where do we want to go...

- **Limit (restrict) access to cure**
  -

Where do we want to go...

- **Limit (restrict) access to cure**
  - **on which grounds?**
    - **comorbidity**
  -

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  - **on which grounds?**
    - **comorbidity,**
    -

Where do we want to go…

- **Limit (restrict) access to cure**
  - **on which grounds?**
    - **comorbidity, age,**
  -

Where do we want to go…

- Limit (restrict) access to cure
  - on which grounds?
   - comorbidity, age, diabetes,…color…
  -

Where do we want to go...

- **Limit (restrict) access to cure**
  - **on which grounds?**
    - **comorbidity, age, diabetes,...color...sexual orientation...**

Where do we want to go...

- **Limit (restrict) access to cure**
  - **on which grounds?**
    - **comorbidity, age, diabetes,...color...sexual orientation...**

Thesis

We invest too much medical-technical (CURE) attention to very frail patients at the expense of the CARE for them

ànd at the expense of these who would REALY benefit.
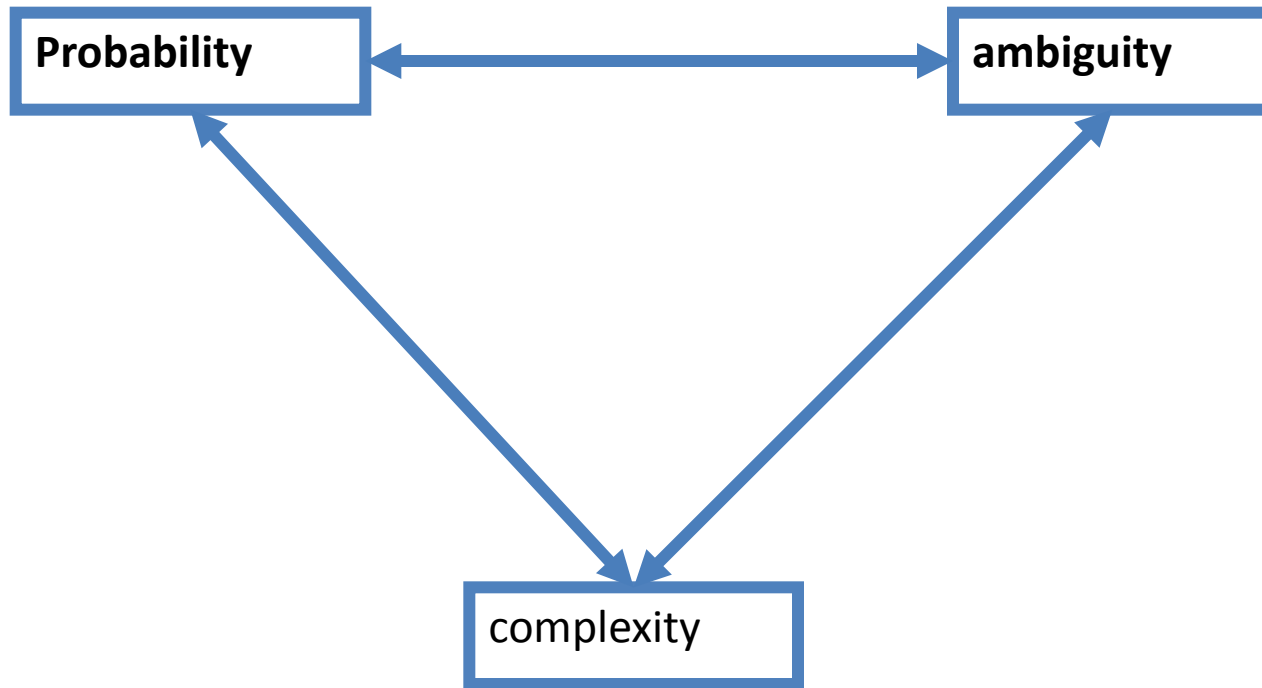
Dialyse to live
Not
Live to dialyse

Mindfull practice:

To cure sometimes, to relieve often, to care always