Palliative Care in Chronic Kidney Disease: Past Successes, Remaining Challenges

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BC Nephrology Days, Vancouver, BC

Nov 6, 2009

Objectives

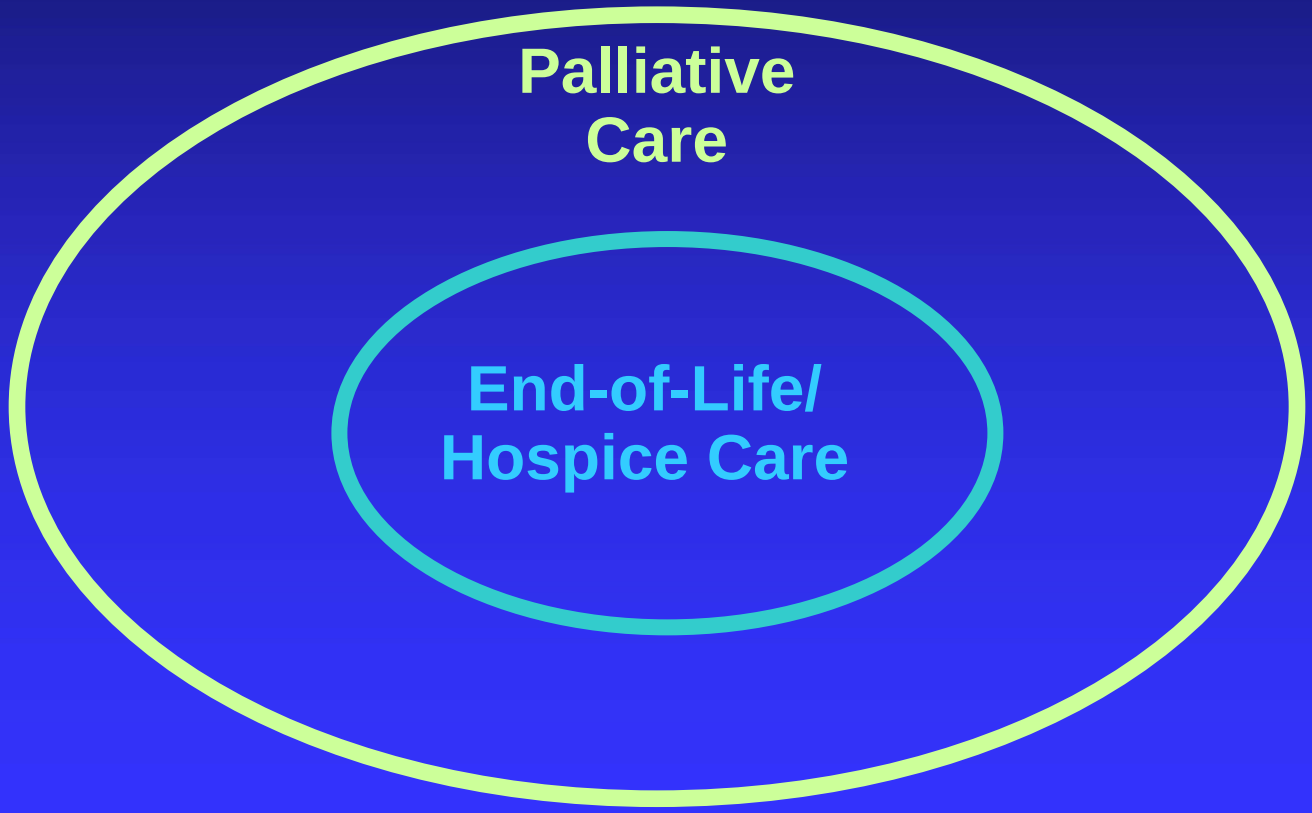
- Highlight the relevance of palliative/supportive care to ESRD.
- Describe successes in renal palliative care
  - Identification of the problem
  - Ethical guideline development
  - Framework to integrate renal palliative care
  - Advances in prognosis estimation and advance care planning
  - Pain and symptom assessment and management
- Present remaining challenges
  - Systematic integration of ACP
  - Symptom management (non- pain, spirituality)
  - Palliative care education for renal staff
  - Understanding of barriers to hospice for dialysis patients
  - Determining who will benefit from conservative management

Palliative Care

Palliative care is an approach that improves the quality of life of patients and their families facing the problem associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual.

World Health Organization

Relationship between Palliative Care and End-of-Life Care



The ESRD Population

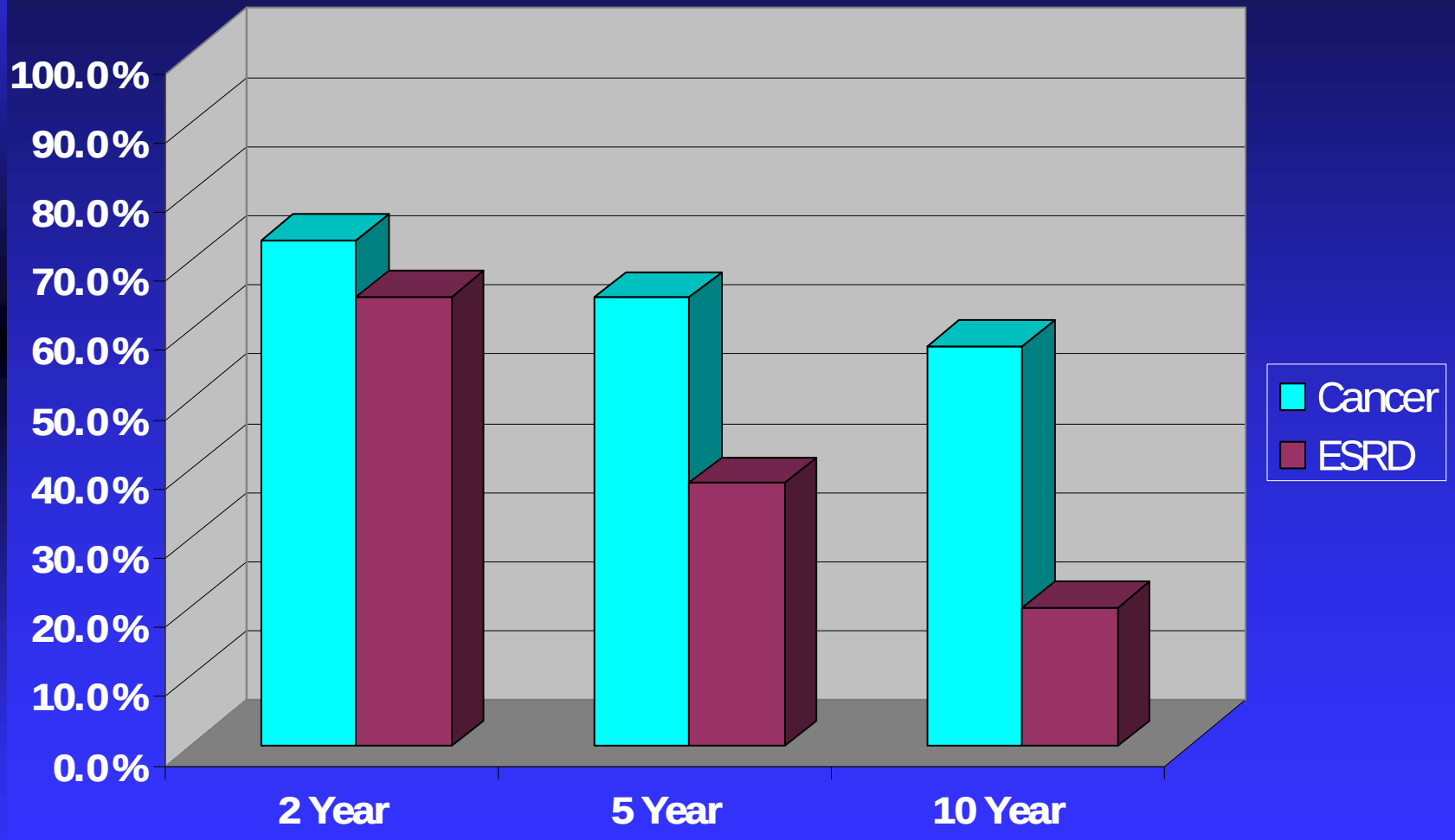
- Significant co-morbidity
- 50% patients starting dialysis > 65 yrs
- Patients ⩾ 75 yrs: fastest-growing group of dialysis patients.

Unadjusted Survival Probabilities (%) for Incident ESRD Patients

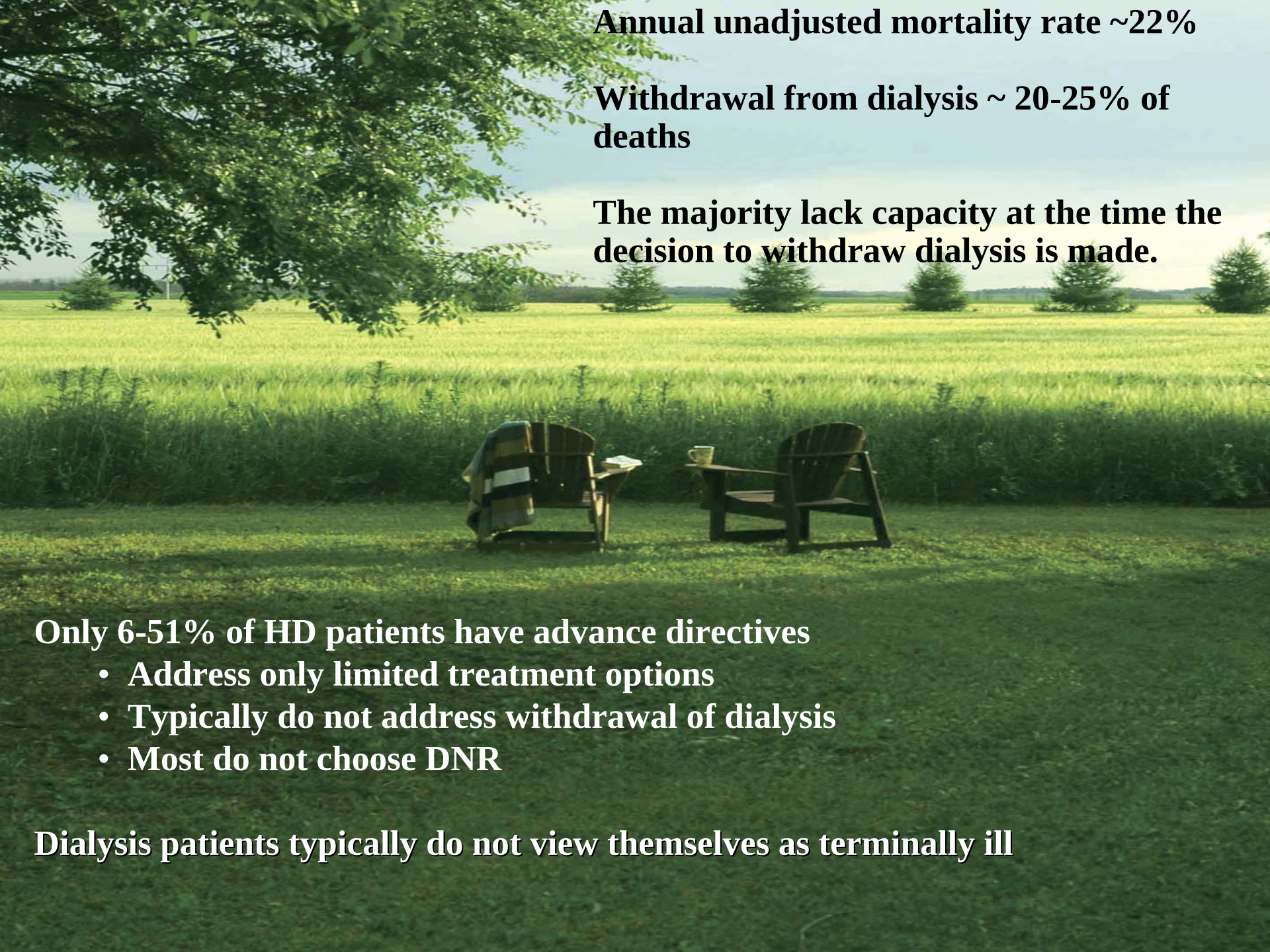
Age	1 year	2 years	3 years	5 years	10 years
40 - 49	89.6	81.6	73.5	61.9	37.7
50 - 59	86.2	75.9	65.4	49.5	21.8
60 - 64	83.0	69.6	58.3	38.1	12.3
65 - 69	79.1	63.1	50.8	30.7	6.4
70 - 79	71.2	53.5	39.0	20.2	2.7
80+	60.5	40.8	25.7	9.6	0.9

USRDS, 2008

Survival Rates for Cancer and ESRD Patients



Data from USRDS and NCI



Annual unadjusted mortality rate ~22%

Withdrawal from dialysis ~ 20-25% of deaths

The majority lack capacity at the time the decision to withdraw dialysis is made.

Only 6-51% of HD patients have advance directives

- **Address only limited treatment options**
- **Typically do not address withdrawal of dialysis**
- **Most do not choose DNR**

Dialysis patients typically do not view themselves as terminally ill

How EOL Decisions Are Being Made

- By family and health care providers
- Surrogates lack the knowledge of patients' preferences
  - Includes wishes for ongoing dialysis
  - Family consistently overestimates patients' desires to continue dialysis across hypothetical health conditions

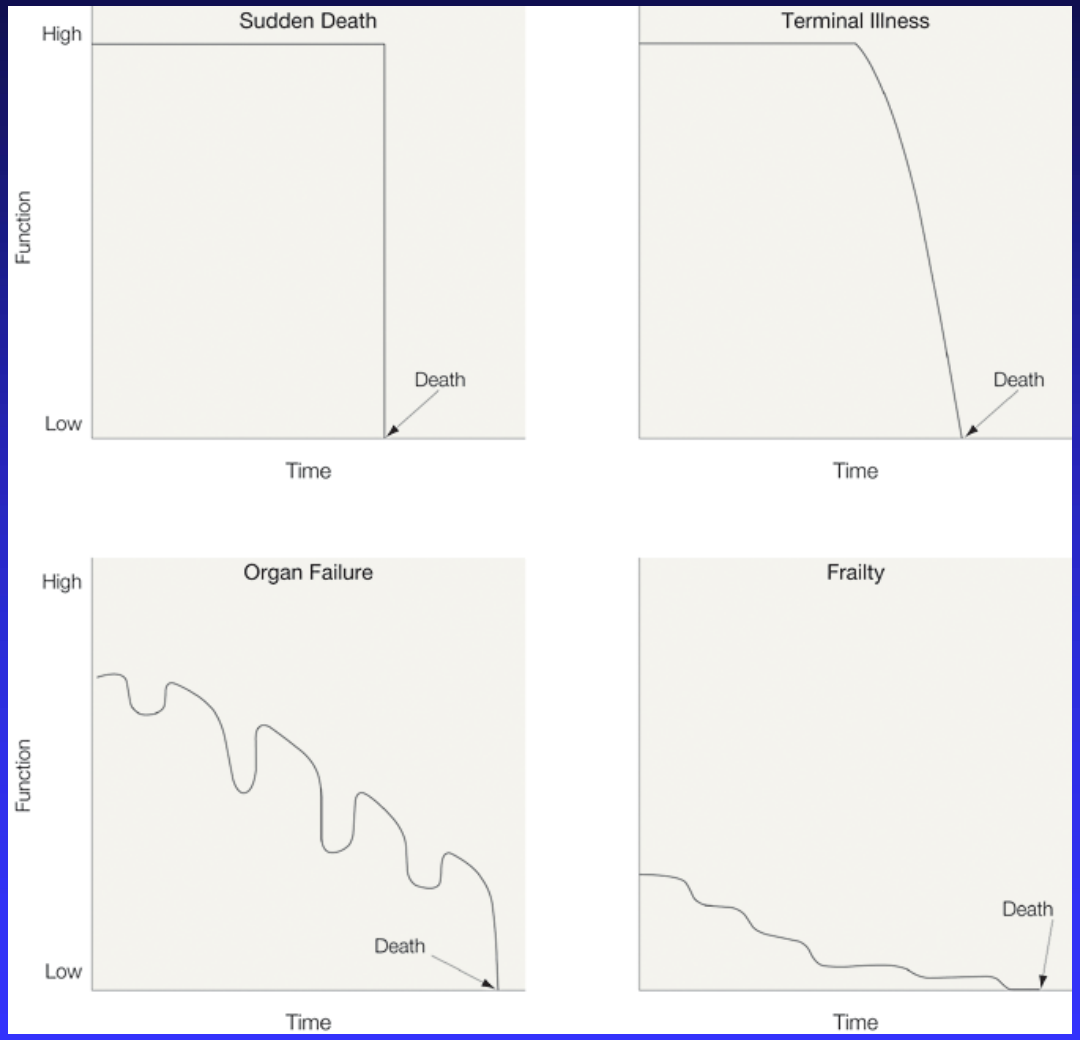
	Current preferences for CPR	Wish for dialysis in a severely demented state	Wish for dialysis if they had terminal cancer
Family	**50%**	**44%**	**47%**
Physician	**44%**	**47%**	**43%**

Miura y et al. AJKD 2006

CPR Outcomes

- Moss 1992: 74 patients had CPR
  - 8% survived to hospital discharge
  - 3% alive at 6 months
  - ~ 80% died a mean of 4 days later, intubated in ICU
- Lai 1999: intradialytic CPR in 24 patients over 3 years
  - 75% were initially resuscitated successfully
  - 45% survived > 24 hrs
  - 8% survived > 1 month
  - None survived until discharge
- Lafrance 2006: intradialytic CPR in 24 patients over 7 years
  - 17% died within 48 hr
  - 75% were alive at 30 days and discharged from hospital

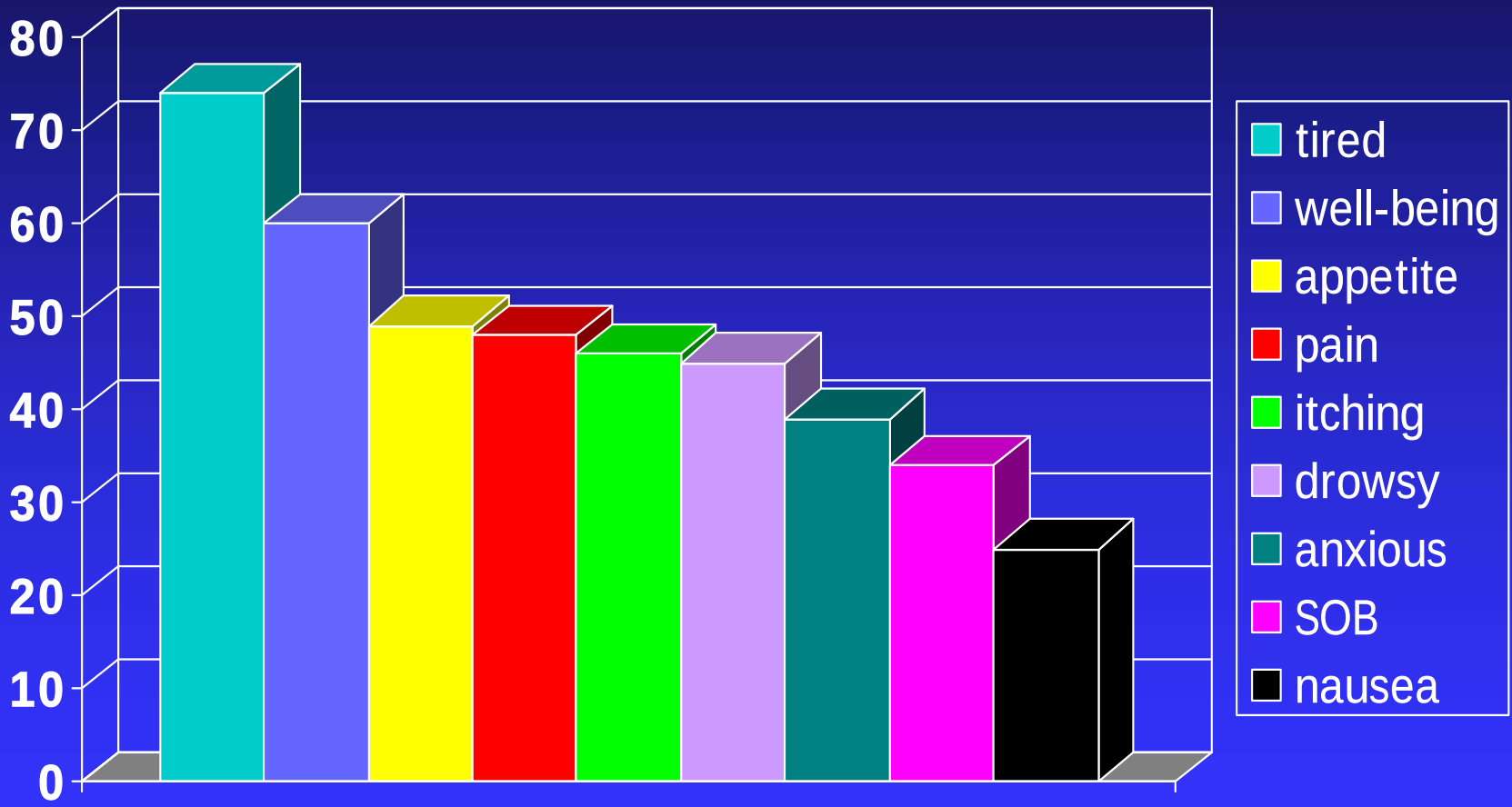
Theoretical Trajectories of Dying



Lunney, J. R. et al. JAMA 2003;289:2387-2392.

JAMA

Symptom Burden in Dialysis Patients
n = 507



Davison, et al KI 2006;69:1621

Severity of Pain: Brief Pain Inventory Scores

Severity (n=103)	Mild (0-3)	Moderate (4-5)	Severe (6-10)	Mean BPI Score
Worst	17.5%	82.5%		7.03
Least	74.8%	16.5%	8.7%	3.07
Average	41.7%	58.3%		5.61
Now	44.7%	28.2%	27.2%	4.99

Cause of pain is NOT predictive for severity of pain

Davison, AJKD 2003

The Impact of Pain and Overall Symptom Burden for ESRD Patients

	No – Mild pain	Mod – Severe pain	Odds Ratio	P
Depression	18%	34%	2.31	0.01
Insomnia	53%	75%	2.32	0.02

Davison JPSM 2005

Symptom burden accounted for 29% of the impairment in physical HRQL and 39% of the impairment in mental HRQL

Davison JPSM 2005

Change in symptom burden accounted for 34% of the change in physical HRQL and 46% of the change in mental HRQL.

Davison JPSM 2005

Point Prevalence of Analgesic Use: DOPPS

Analgesic	Number of Patients	
	1997 N = 2988	2000 N = 2476
Any analgesic	30.2%	24.3%
Any narcotic	18.0%	14.9%
Any NSAID	6.4%	2.3%
Any acetaminophen	11.1%	6.3%

¾ of patients reporting moderate to severe pain were not prescribed analgesics

Successes

- Identification of the problem
- Ethical guideline development
- Formation of frameworks to integrate renal palliative care
- Advances in prognosis estimation
- Advance care planning
- Pain and symptom assessment and management

Shared Decision-Making in the Appropriate Initiation of and Withdrawal from Dialysis

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RPA Guideline Recommendations

1: Shared Decision-Making
2: Informed Consent or Refusal
3: Estimating Prognosis
4: Conflict Resolution
5: Advance Directives
6: Withholding or Withdrawing Dialysis
7: Special Patient Groups
8: Time-Limited Trials
9: Palliative Care

RPA
Renal Physicians Association

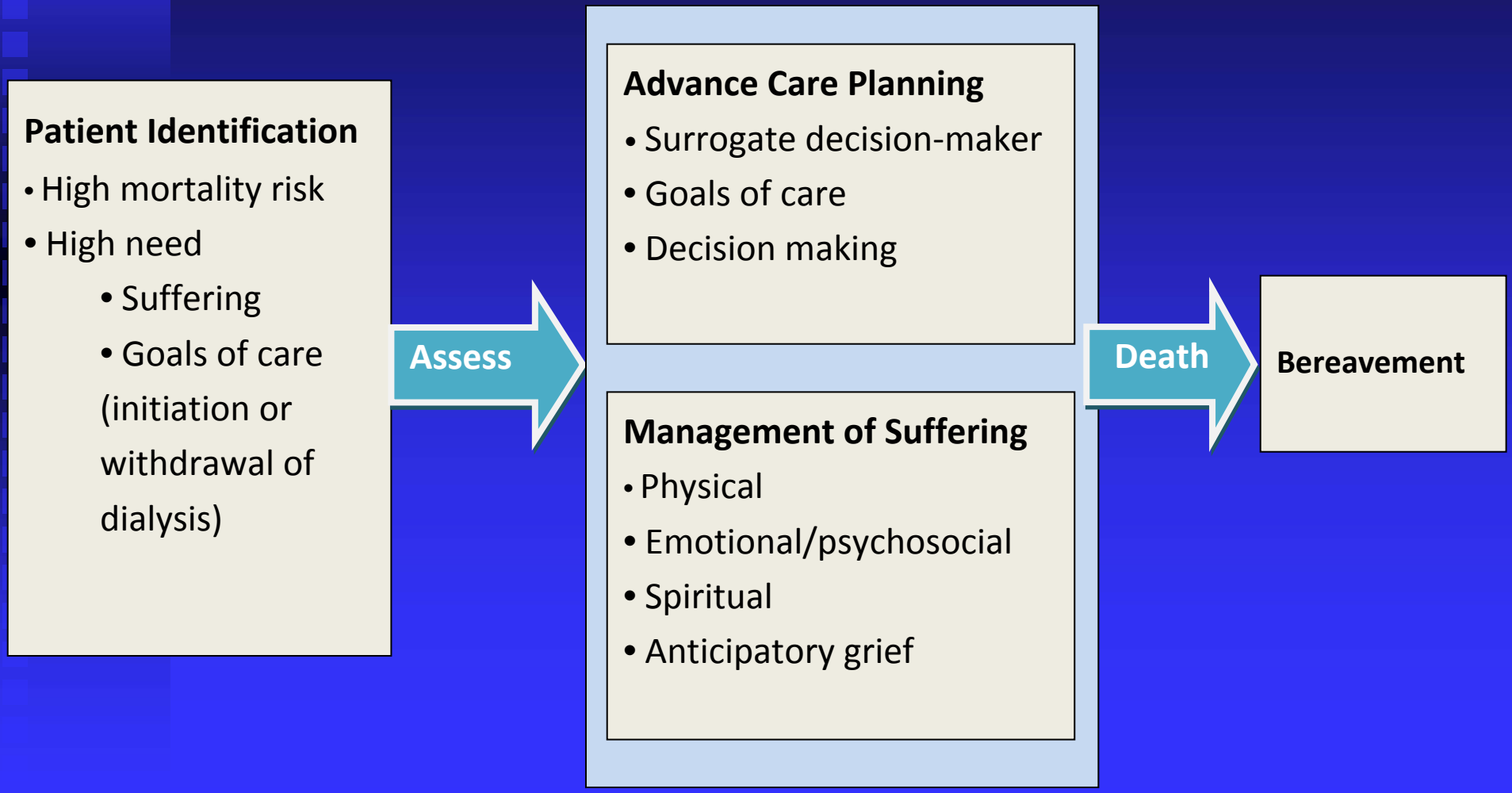
Table 2. Comparisons of characteristics of nephrologists according to level of preparedness

Characteristic of Nephrologists	Within Nephrologists Level of Preparedness (Mean ± SD or %)		*P*
	Very Well Prepared (n = 143)	Less than Very Well Prepared (n = 211)	
Year fellowship completed	1985 ± 11	1992 ± 12	<0.001
Age (yr)			<0.001
20 to 45	27	55	
46 to 65	64	39	
66+	8	6	
No. of patients cared for	114 ± 83	109 ± 122	0.033
No. of patients who stopped dialysis in past year	5.6 ± 5.1	3.8 ± 3.9	<0.001
Use time-limited trials of dialysis	87	74	0.003
No. of patients referred to hospice in past year	3.9 ± 4.1	3.3 ± 3.9	0.039
Practice in units that refer patients to hospice	87	76	0.013
Medical school affiliation	52	54	0.644
Country of practice, United States	87	80	0.075
Unit policy on withdrawal of dialysis	31	22	0.062
Unit policy on CPR	80	79	0.812
Practice in units in which CPR is discussed routinely	93	85	0.029
Likely to consult an ESRD Network Ethics Committee for difficult patient treatment decisions	40	57	0.002
Aware of RPA/ASN guidelines	70	52	<0.001
Use RPA/ASN guidelines[a]	58	48	0.155
Aware of RPA/ASN statement	62	48	0.007
Use RPA/ASN statement[a]	59	55	0.613

[a]Numbers and percentages are based on nephrologists who are aware of guidelines/statement.

Davison et al. Nephrologists' Reported Preparedness for End-of-Life Decision-Making. *Clin J Am Soc Nephrol*. 2006;1:1256-1262.

Establishing a Palliative Care Framework for Advanced CKD



Predictors of Poor Prognosis for ESRD Patients

- Age
- Nutritional status
  - Serum albumin < 35g/L
    - ~ 50% mortality at 1 year
    - 17% at 2 years
- Comorbid Illnesses – Charlson Comorbidity Index
  - CCI ≥ 8 ~ 50% 1 year mortality
  - **http://www.medalreg.com/qhc/medal/ch1/1_13/01-13-01-ver9.php3** Beddhu S AJKD 2000
- Surprise Question
- Functional Status

RPA/ASN. *Shared Decision-Making in the Appropriate Initiation of and Withdrawal from Dialysis*. 2000.

INSTITUTE FOR ALGORITHMIC MEDICINE

Comorbidity Index and Score of Charlson et al

Purpose: To use the comorbidity score developed by Charlson et al to give an estimate of 10 year survival for a patient.

Age of the patient		years
Does the patient have?		
AIDS?	Yes	No
Cerebrovascular disease?	Yes	No
Chronic pulmonary disease?	Yes	No
Congestive heart failure?	Yes	No
Connective tissue disease?	Yes	No
Dementia?	Yes	No
Hemiplegia?	Yes	No
Leukemia?	Yes	No
Malignant lymphoma?	Yes	No
Myocardial infarction?	Yes	No
Peripheral vascular disease?	Yes	No
Ulcer disease?	Yes	No

Click the appropriate column for each condition (give only 1 answer per row)

	none	without end organ damage	with end organ damage	
Diabetes mellitus				
	none	mild	moderate	severe
Liver disease				
Renal disease				
	none	non-metastatic	metastatic	
Malignant solid tumor				

Calculate Reset

Would you be surprised if the patient died in the next year?

The surprise question helps identify patients for whom palliative care is appropriate:

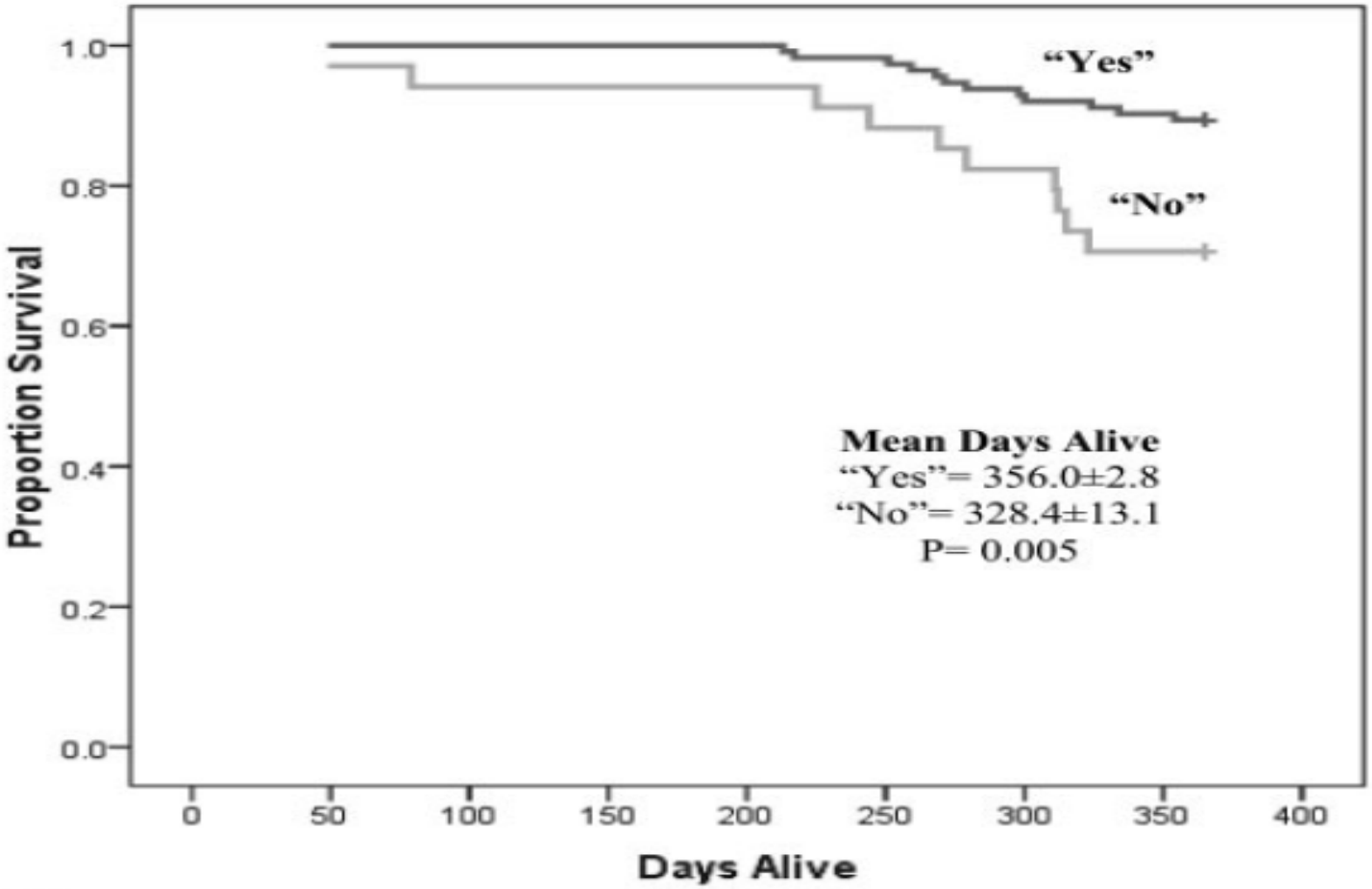
The odds of dying (within 1 year) for the patients in the "No, I would not be surprised" group were 3.5 times higher than for patients in the "Yes, I would be surprised" group

- Mortality at 1 year = 29.4% v. 10.6%; OR 3.5
- Higher pain levels
- Greater comorbidity – Charlson Comorbidity Index
- Greater functional impairment – Karnofsky
- Older age
- Lower serum albumin

Moss AH. Clin J Am Soc Nephrol 2008;3:1379-1384 .

A

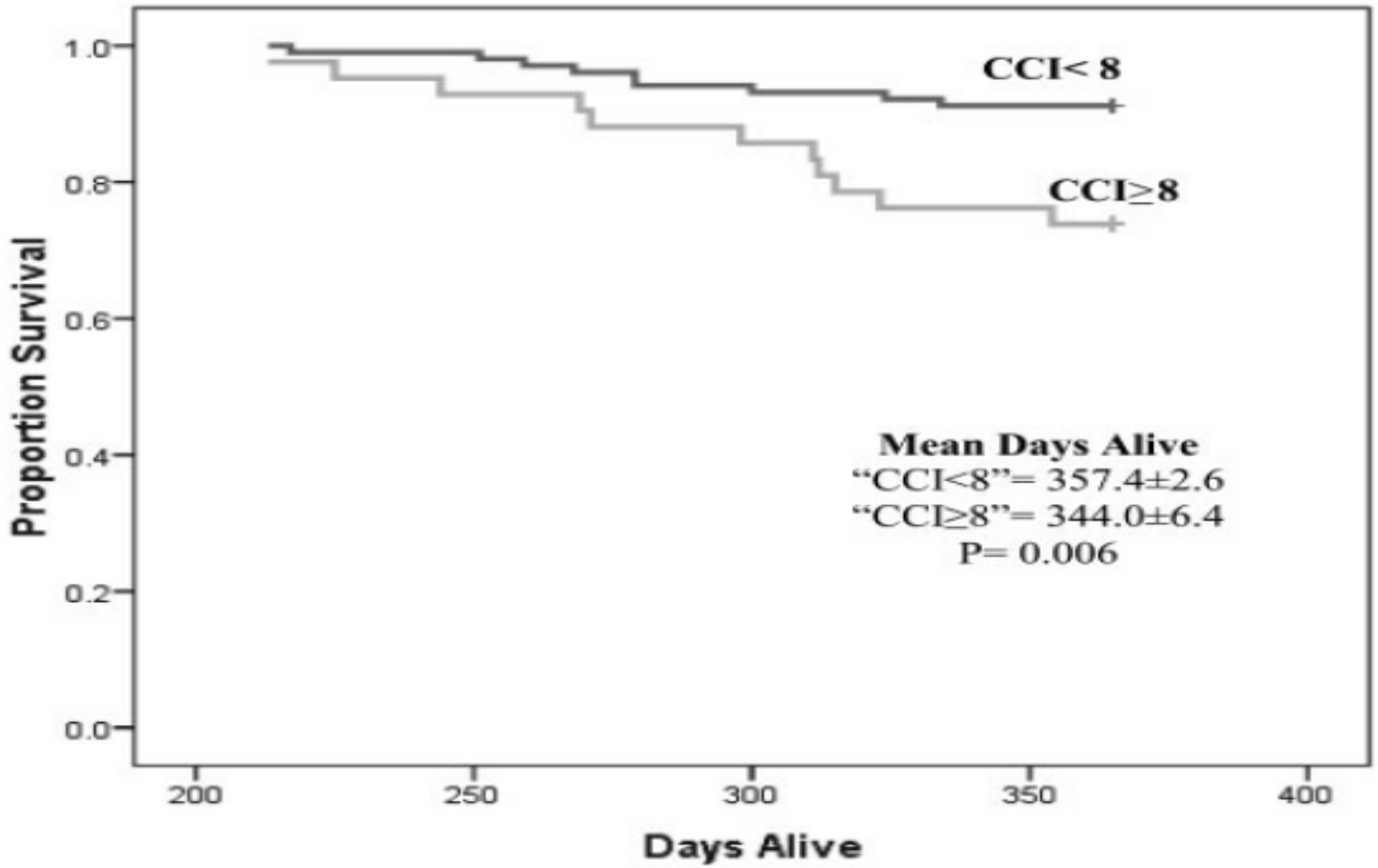
Survival by Surprise Question Response



No. at Risk									
"Yes"	113	113	113	113	113	111	104	102	101
"No"	34	33	32	32	32	30	28	24	24

B

Survival by Comorbidity Score



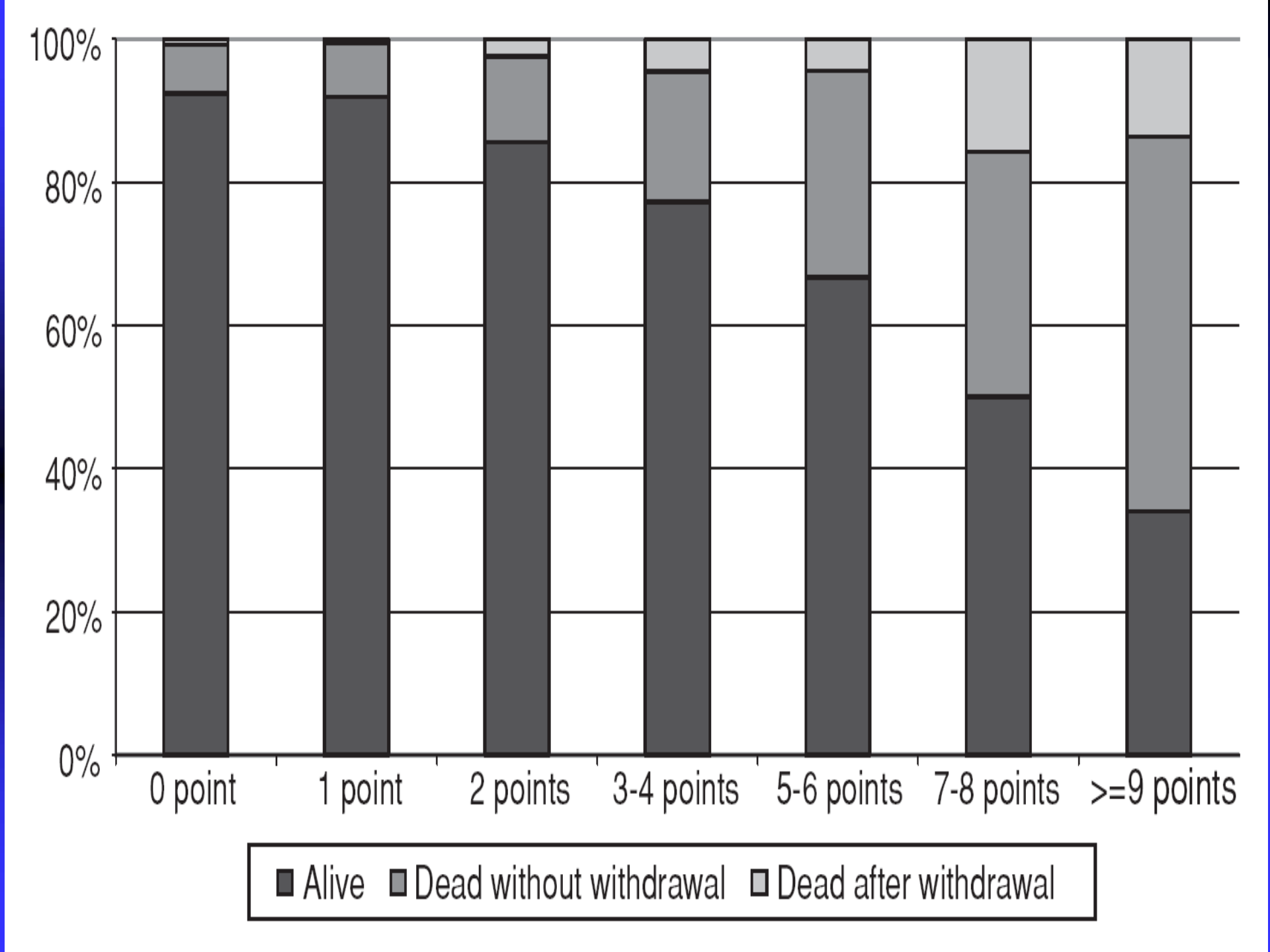
No. at Risk					
CCI<8	102	101	95	93	93
CCI≥8	42	39	36	32	31

A clinical score to predict 6-month prognosis in elderly patients starting dialysis for end-stage renal disease

Cécile Couchoud[1], Michel Labeeuw[2], Olivier Moranne[3,4,5], Vincent Allot[6], Vincent Esnault[5], Luc Frimat[7], Bénédicte Stengel[3,4], and for the French Renal Epidemiology and Information Network (REIN) registry

Incident pts > 75 yrs: predict early (< 6 month) mortality

- Demographics,
- Comorbidity
  - Diabetes, CHF (III/IV), PVD (III/IV), Dysrythmia
  - BMI < 18.5
  - Malignancy (active)
  - Severe behavioral disorder
- Mobility: totally dependent for transfers
- Unplanned dialysis start
- Point score
  - NDT 2008


100%
80%
60%
40%
20%
0%
0 point
1 point
2 points
3-4 points
5-6 points
7-8 points
>=9 points
Alive
Dead without withdrawal
Dead after withdrawal

A New Integrated Model

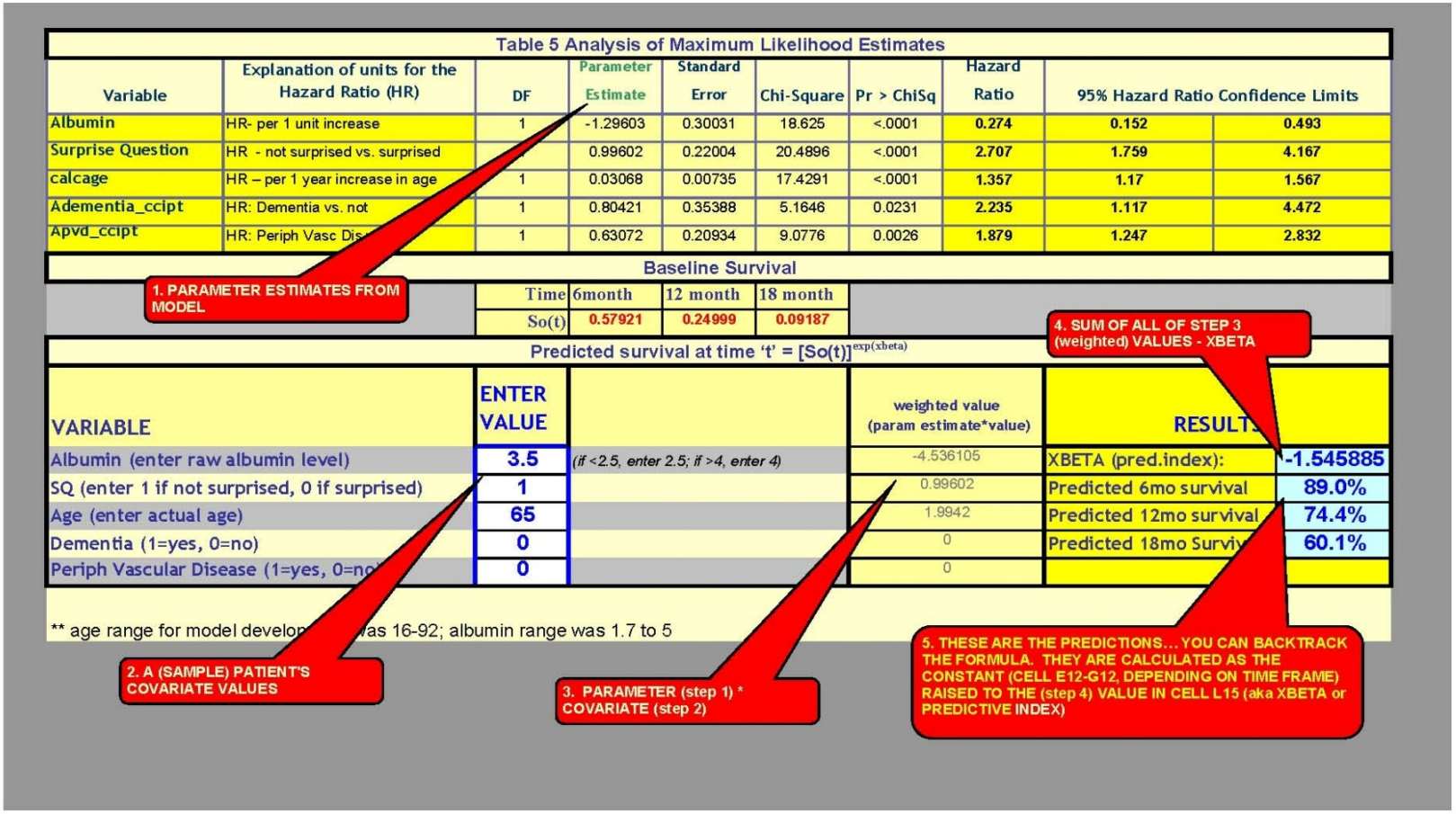


Table 5 Analysis of Maximum Likelihood Estimates

Variable	Explanation of units for the Hazard Ratio (HR)	DF	Parameter Estimate	Standard Error	Chi-Square	Pr > ChiSq	Hazard Ratio	95% Hazard Ratio Confidence Limits	
Albumin	HR- per 1 unit increase	1	-1.29603	0.30031	18.625	<.0001	0.274	0.152	0.493
Surprise Question	HR - not surprised vs. surprised	1	0.99602	0.22004	20.4896	<.0001	2.707	1.759	4.167
calcage	HR – per 1 year increase in age	1	0.03068	0.00735	17.4291	<.0001	1.357	1.17	1.567
Adementia_ccipt	HR: Dementia vs. not	1	0.80421	0.35388	5.1646	0.0231	2.235	1.117	4.472
Apvd_ccipt	HR: Periph Vasc Dis	1	0.63072	0.20934	9.0776	0.0026	1.879	1.247	2.832

Baseline Survival

Time	6month	12 month	18 month
So(t)	0.57921	0.24999	0.09187

Predicted survival at time 't' = $[So(t)]^{exp(xbeta)}$

VARIABLE	ENTER VALUE		weighted value (param estimate*value)	RESULT	
Albumin (enter raw albumin level)	3.5	(if <2.5, enter 2.5; if >4, enter 4)	-4.536105	XBETA (pred.index):	-1.545885
SQ (enter 1 if not surprised, 0 if surprised)	1		0.99602	Predicted 6mo survival	89.0%
Age (enter actual age)	65		1.9942	Predicted 12mo survival	74.4%
Dementia (1=yes, 0=no)	0		0	Predicted 18mo Surviv	60.1%
Periph Vascular Disease (1=yes, 0=no	0		0		

** age range for model develop as 16-92; albumin range was 1.7 to 5

1. PARAMETER ESTIMATES FROM MODEL

2. A (SAMPLE) PATIENT'S COVARIATE VALUES

3. PARAMETER (step 1) * COVARIATE (step 2)

4. SUM OF ALL OF STEP 3 (weighted) VALUES - XBETA

5. THESE ARE THE PREDICTIONS... YOU CAN BACKTRACK THE FORMULA. THEY ARE CALCULATED AS THE CONSTANT (CELL E12-G12, DEPENDING ON TIME FRAME) RAISED TO THE (step 4) VALUE IN CELL L15 (aka XBETA or PREDICTIVE INDEX)

Germain, Moss and Cohen. CJASN in press

Remaining Challenges: determining who will benefit from conservative management v. dialysis

Murtagh FE et al. Nephrol Dial Transplant 2007;22:1955-1962.

- Pts > 75 yrs, eGFR < 15 ml/min
- Conservatively managed patients: older (83.0 v. 79.6);

	Dialysis (n = 52)	Conservative (n = 77)	All patients
1 year survival	84%	68%	74%
2 year survival	76%	47%	58%

"…. survival advantage [for dialyzed patients] was lost in those patients with high comorbidity scores, especially when the comorbidity included ischaemic heart disease."

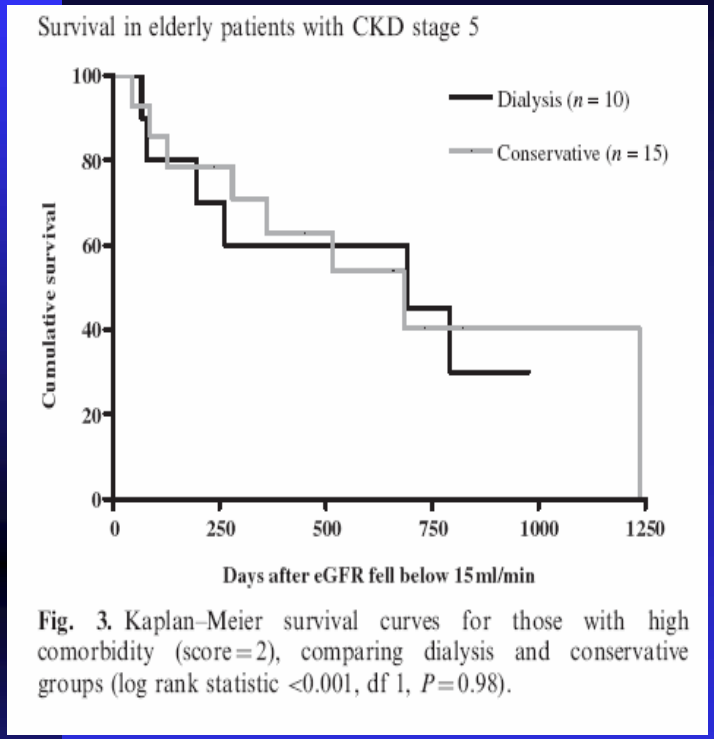


Fig. 3. Kaplan–Meier survival curves for those with high comorbidity (score = 2), comparing dialysis and conservative groups (log rank statistic <0.001, df 1, $P = 0.98$).

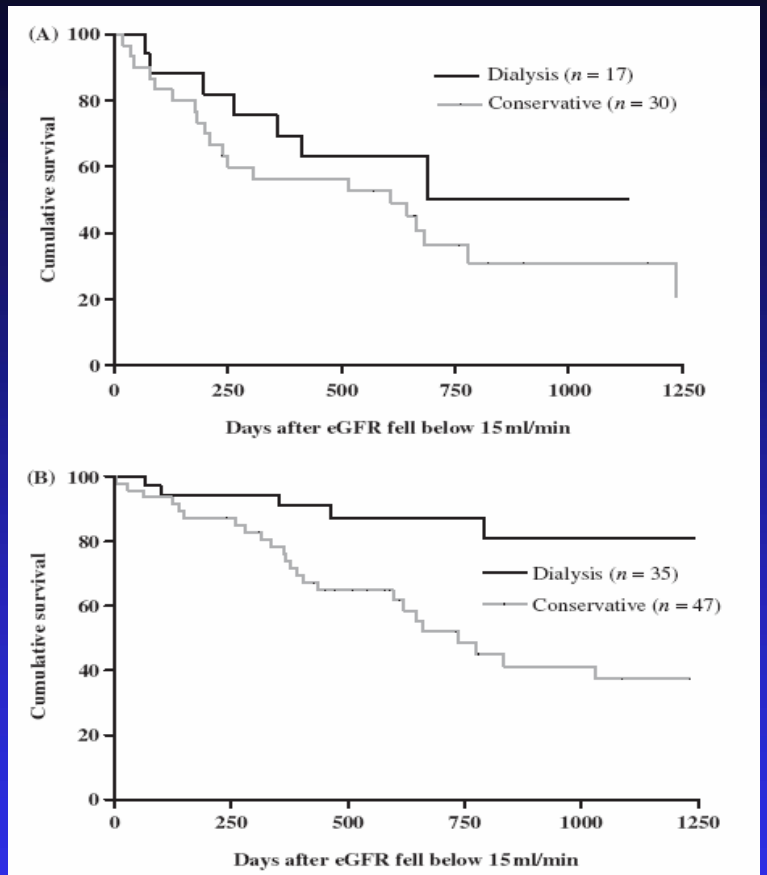


Fig. 4. **(A)** Kaplan–Meier survival curves for those with ischaemic heart disease, comparing the dialysis and conservative groups (log rank statistic 1.46, df 1, $P = 0.27$). **(B)** Kaplan–Meier survival curves for those without ischaemic heart disease, comparing the dialysis and conservative groups (log rank statistic 12.78, df 1, $P < 0.0001$).

ORIGINAL ARTICLE

Functional Status of Elderly Adults before and after Initiation of Dialysis

Manjula Kurella Tamura, M.D., M.P.H., Kenneth E. Covinsky, M.D., M.P.H., Glenn M. Chertow, M.D., M.P.H., Kristine Yaffe, M.D., C. Seth Landefeld, M.D., and Charles E. McCulloch, Ph.D.

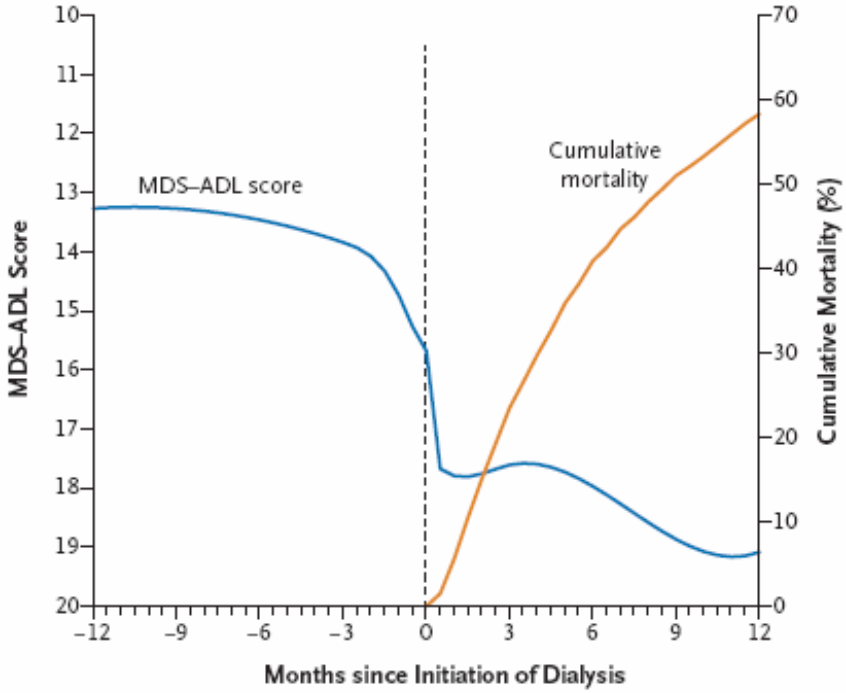
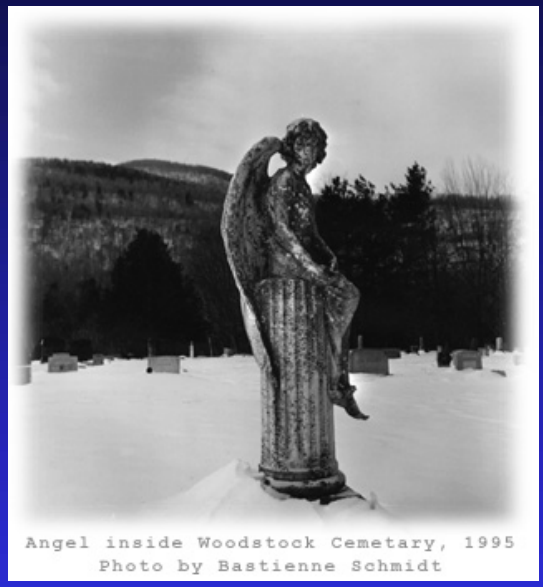


Figure 3. Smoothed Trajectory of Functional Status before and after the Initiation of Dialysis and Cumulative Mortality Rate.

The dashed vertical line indicates the initiation of dialysis in a hypothetical 75-year-old nursing home resident. MDS–ADL denotes Minimum Data Set–Activities of Daily Living. The numbers on the MDS–ADL axis run from highest to lowest.

Advance Care Planning

- A process that involves understanding, reflection, communication and discussion between a patient, the family/health care proxy, and staff for the purpose of prospectively identifying a surrogate, clarifying preferences, and developing individualized plans for care near the end of life.



The focus is not merely death and the right to refuse treatment but rather about living well and defining "good care" for each patient near the end of life.

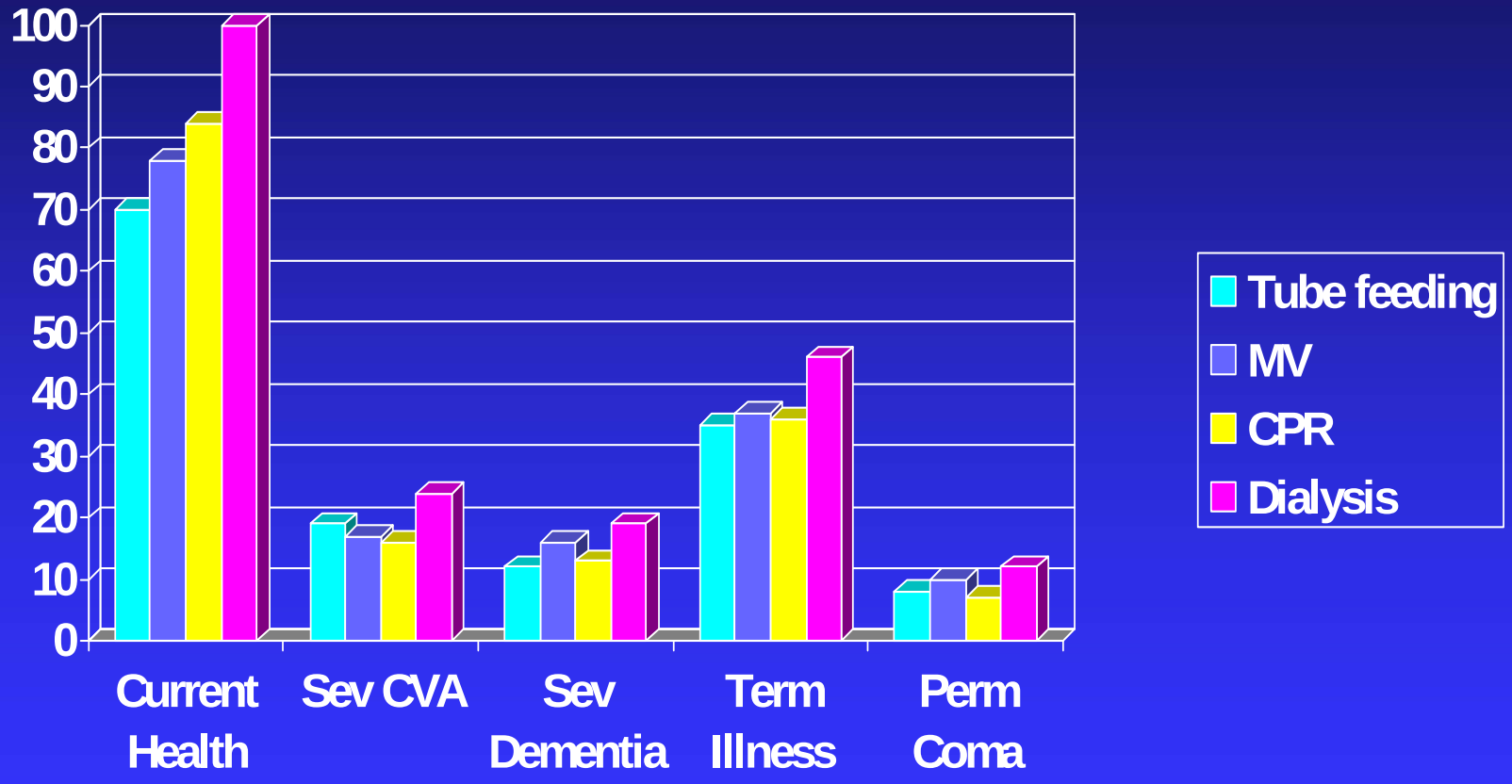
Goals of Care and ACP

"Goals of care are inextricably linked with patient and family **understanding of illness** and expectations. In the context of facilitated ACP, it is clear that goals must reflect expectations that are in balance with adequate knowledge."

This includes prognostic information

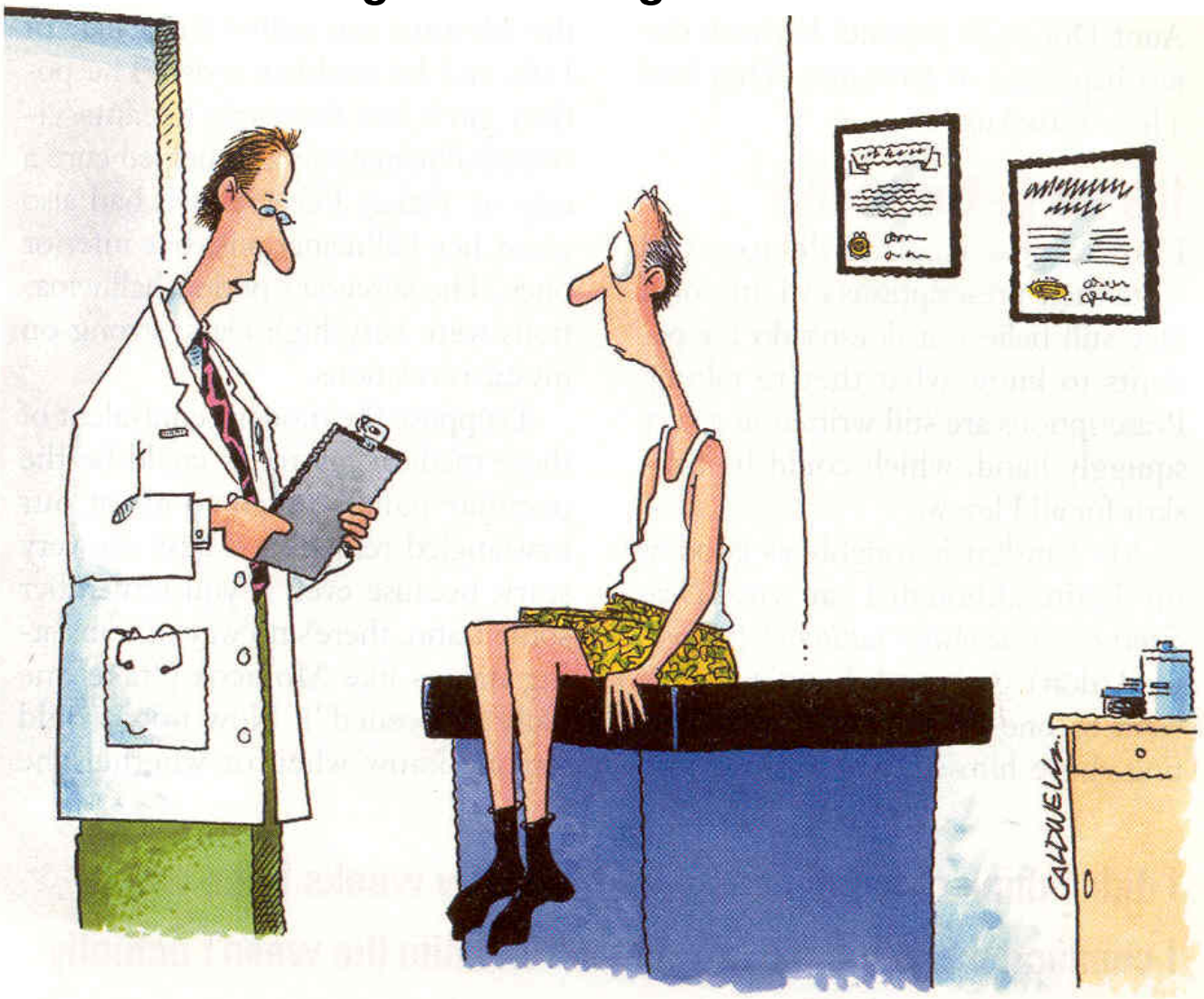
Davison, et. al. *Am J Kidney Dis* 2007;49: 27-36.

Patients' Desires for Treatments in Various Health States (%)



Singer, et al. *J Am Soc Nephrol* 1995;6:1410-1417

Talking About Prognosis & EOL Issues



"Yikes! Okay, I'm going to pretend I didn't see that."

Nephrologists should voluntarily divulge survival data to potential dialysis patients. Fine PDI 25 269 2005

- 100 non dialysis CKD pts during 1st nephrology visit
- 97% want prognostic info without the MD being asked (only 3% did not want to know life expectancy with and without dialysis)
- They want as much info both good and bad
- Only 11% said that that they did not need to know prognosis to make a decision on whether to start dialysis

Information-Giving within ACP Enhances Hope

Davison, BMJ 2006

- **Less fear**: early information, especially prior to RRT
- **Empowerment**
- **Enhanced relationships**
- **Type of information:**
  - **Impact on daily life**
  - **Helps patients see future possibilities consistent with their values – essential in maintaining hope**

- **Giving "bad prognostic" information does not result in harm and can have positive outcomes**

Annals of Internal Medicine | ARTICLE

Hope, Truth, and Preparing for Death: Perspectives of Surrogate Decision Makers

Latifat Apatira, BA; Elizabeth A. Boyd, PhD; Grace Malvar, BA; Leah R. Evans, MEd; John M. Luce, MD; Bernard Lo, MD; and Douglas B. White, MD, MAS

Ann Intern Med. 2008;149:861-868.

Conclusion: Most surrogates of critically ill patients do not view withholding prognostic information as an acceptable way to maintain hope, largely because timely discussions about prognosis help families begin to prepare emotionally, existentially, and practically for the possibility that a patient will die.

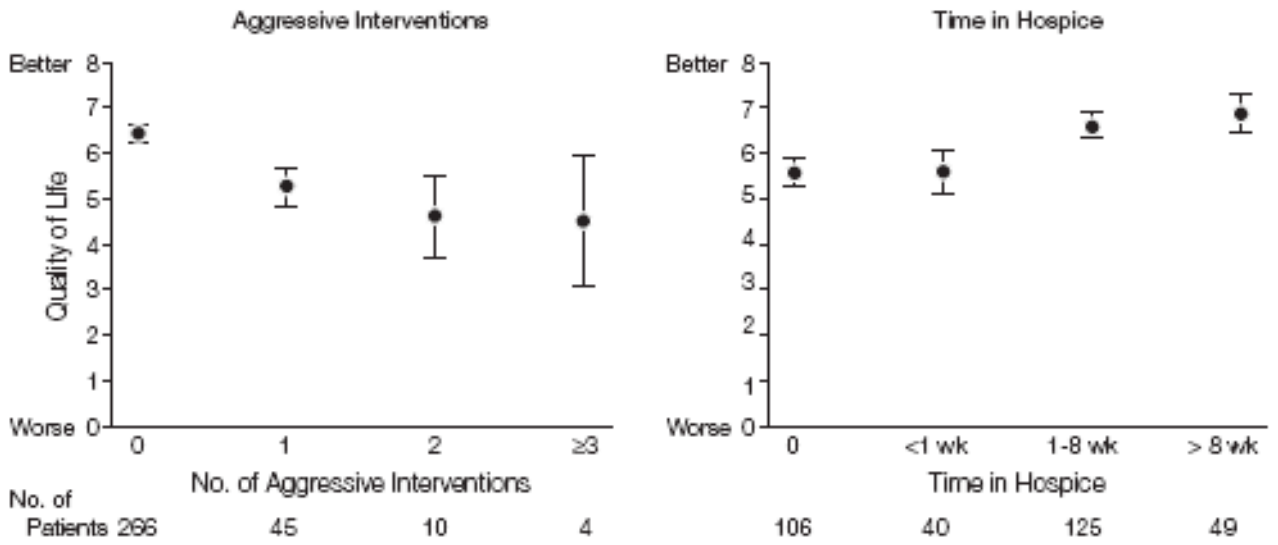
Associations Between End-of-Life Discussions, Patient Mental Health, Medical Care Near Death, and Caregiver Bereavement Adjustment

Alexi A. Wright; Baohui Zhang; Alaka Ray; et al.

JAMA. 2008;300(14):1665-1673 (doi:10.1001/jama.300.14.1665)

Conclusions End-of-life discussions are associated with less aggressive medical care near death and earlier hospice referrals. Aggressive care is associated with worse patient quality of life and worse bereavement adjustment.

Figure. Relationship Between Quality of Life and End-of-Life Care



Results are adjusted for illness severity, as measured by Karnofsky score and survival. Caregivers were asked, "In your opinion, how would you rate the overall quality of the patient's death or last week of life?" Response items were arranged on a Likert scale from 0 "worst possible" to 10 "best possible." The hospice statistical scores were $F=4.04_3$, $P<.001$. Interventions included ventilation, resuscitation, chemotherapy, or feeding tube ($F=3.61_3$; $P=.01$). Error bars represent 95% confidence intervals.

Key Elements to Facilitate Effective ACP

Davison CJASN 2007, AJKD 2007

Patient participation

1. Determine the patient's *ability* to be involved in ACP
2. Determine the patient's *interest* in participating in ACP
3. Determine the patient's *perception* of level of control and power
4. Determine the patient's *perception of potential benefits* of participation in ACP
5. Determine the patient's *resources* to participate in ACP
6. Identify *whom* the patient wishes to engage in ACP

Decision-making and defining priorities for goals of care

1. Measure *understanding* of illness
2. Determine *how* patients expect to make decisions
3. Determine *expectations* regarding outcomes of end-of-life care
4. Determine patient *values* that drive end-of-life preferences

Key Elements to Facilitate Effective ACP

Patient-physician relationship

1. Use of lay language to promote understanding
2. Empathetic listening
3. Affirm patients' self-worth
4. Maintain trust, honesty, promise keeping, confidentiality, and caring

Documentation

1. Easily identifiable
2. Travel with the patient across health care settings so it is available for all professional caregivers involved in the care of the patient.

Quality improvement

Suportive Care …..in press 2010

My Voice – Planning Ahead

http://www.fraserhealth.ca/your_care/planning_for_your_care/workbook

www.calgaryhealthregion.ca/programs/advancecareplanning/acpgcdpolicy

Additional Challenges to be Faced

- **Facilitation**
  - Consensus on when to start discussions, who to include
- **Systematic Integration**
  - Providing the necessary resources: including reimbursement for the time involved
- **Professional Training**
  - Respecting choices
- **Cultural differences that influence ACP**

  Davison Adv Chronic Kidney Dis 2008
  - Concept of autonomy
  - Decision-making models
  - Communication of bad news
  - Attitudes towards ACP and end-of-life care
- **Increase the uptake / effectiveness of ACP**

Interventions to Increase Uptake and Effectiveness of ACP

- Written material on ADs does not alter attitudes to ADs; only transiently improves understanding of end-of-life care issues.

  Holley AJKD 2003

- peer mentoring: RCT of 203 dialysis patients - increased completion of ADs, increased comfort discussing ADs, improved subjective wellbeing among the African American participants.

  Perry AJKD 2005

- Multi-component approaches "Respecting Choices"
  - AD completion increased from 15% to 85%
  - Median time between AD and death was 1.2 years.
  - Almost all ADs requested that treatment be forgone as death neared and treatment followed these instructions in 98% of cases

  Hammes. Archives of Int Med 1998

Behavioural Change

- Health Information Technology
  - Identify at risk patients
  - Provide automated reminders for ACP
  - ~ 8-fold increase in having an AD discussion with 45% of these discussions resulting in the completion of an AD.
  - Automated ACP reminder & mail out of educational material on ADs to patients prior to appointment……. more ACP discussions (64% v. 38%, $p<0.001$) and more documentation of these discussions (47% v. 24%, $p<0.001$).
  - Share information across providers with a uniform instrument.
  - Promote adherence to guide-line based care.
- Social Marketing
  - "Respecting Choices"
- Legislative & Policy Change
  - POLST (Physicians Orders for Life Sustaining Treatment)

Successes

- Identification of the problem
- Ethical guideline development
- Formation of frameworks to integrate renal palliative care
- Advances in prognosis estimation
- Advance care planning
- Pain and symptom assessment and management

Initial Symptom Screening - ESAS

Capital Health

Edmonton Symptom Assessment System:
Numerical Scale
Northern Alberta Renal Program

Please circle the number that best describes:

No pain	0	1	2	3	4	5	6	7	8	9	10	Worst possible pain
Not tired	0	1	2	3	4	5	6	7	8	9	10	Worst possible tiredness
Not nauseated	0	1	2	3	4	5	6	7	8	9	10	Worst possible nausea
Not depressed	0	1	2	3	4	5	6	7	8	9	10	Worst possible depression
Not anxious	0	1	2	3	4	5	6	7	8	9	10	Worst possible anxiety
Not drowsy	0	1	2	3	4	5	6	7	8	9	10	Worst possible drowsiness
Best appetite	0	1	2	3	4	5	6	7	8	9	10	Worst possible appetite
Best feeling of wellbeing	0	1	2	3	4	5	6	7	8	9	10	Worst possible feeling of wellbeing
No itching	0	1	2	3	4	5	6	7	8	9	10	Worst possible itching
No shortness of breath	0	1	2	3	4	5	6	7	8	9	10	Worst possible shortness of breath
Other problem	0	1	2	3	4	5	6	7	8	9	10	

Patient's Name _____

Date _____ Time _____

Complete by *(check one)*
- ☐ Patient
- ☐ Caregiver
- ☐ Caregiver assisted

BODY DIAGRAM ON REVERSE SIDE

April 12, 2002 C:\Data\Nephrology\Edmonton Symptom Assess Numerical Scale.doc

- Onset
- Location
- Character
- Duration
- Intensity
- Severity – impact on HRQL
- Temporal characteristics
- Triggering/relieving factors
- Type (nociceptive, neuropathic)
- Psychologic symptoms
- Treatment (duration, dosage, side-effects)
- Goals & expectations of treatment

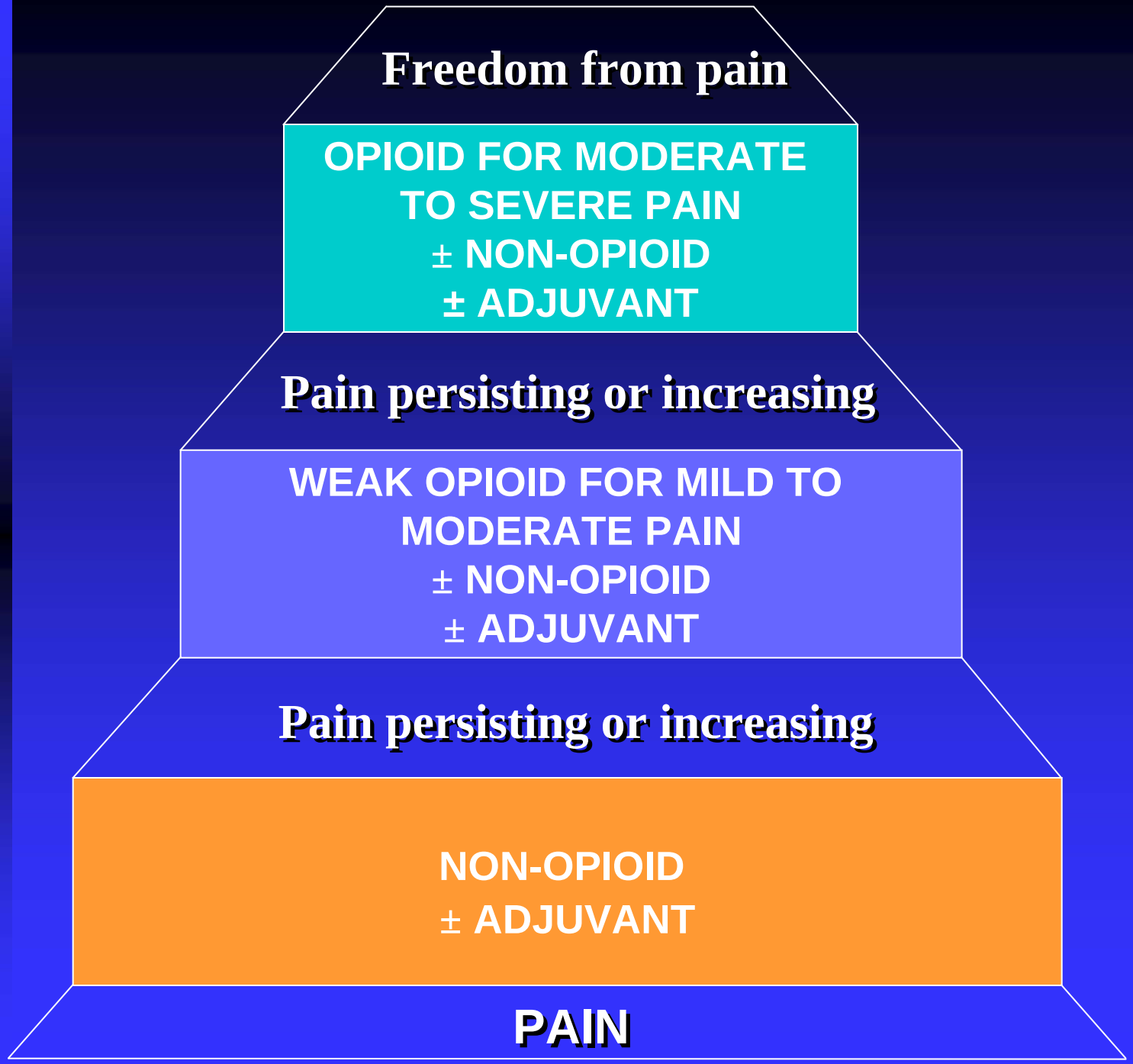
Date: __/__/__

Study No:

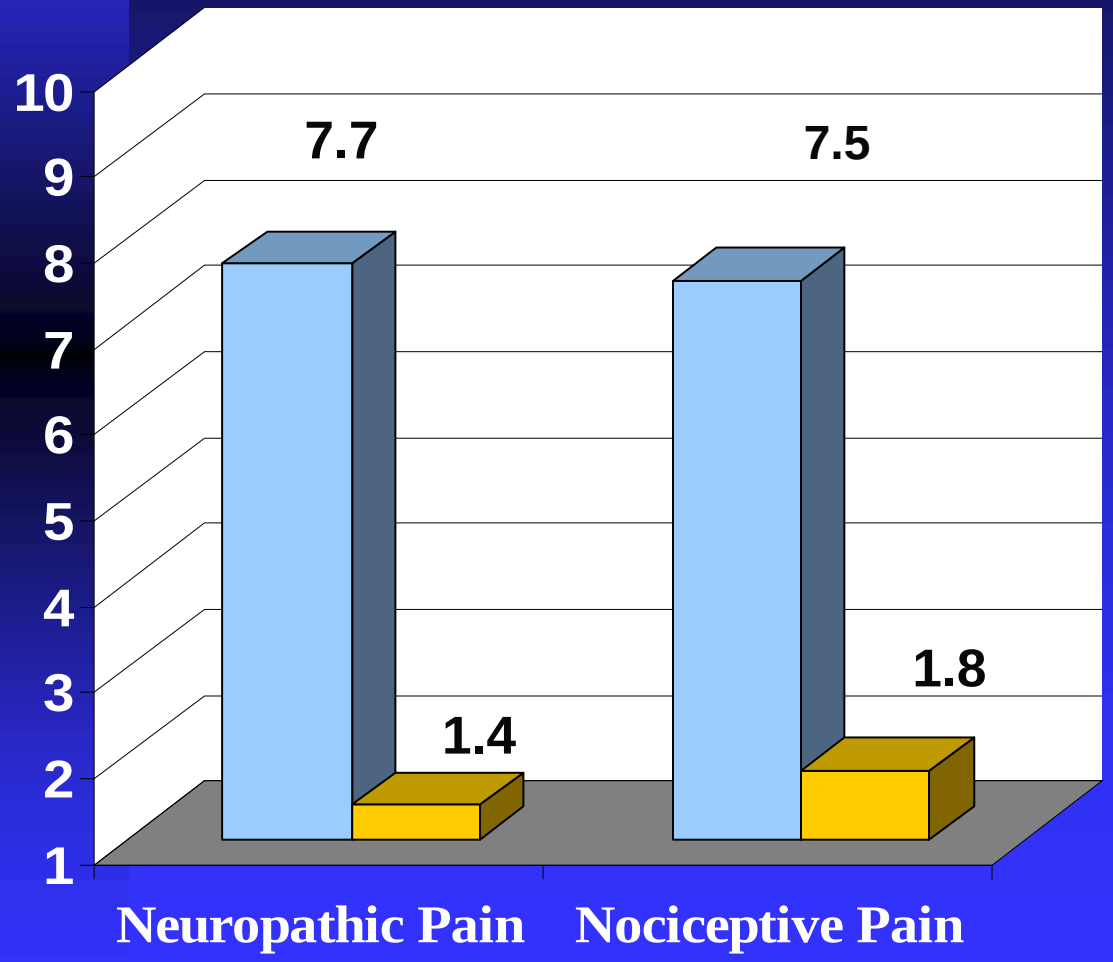
Questionnaire POS-S1 - patient

Below is a list of symptoms, which you may or may not have experienced. Please put a tick in the box to show how each of these symptoms has affected how you have been feeling **over the last 3 days.**

	Not at all, no effect	**Slightly** – but not bothered to be rid of it	**Moderately** – limits some activity or concentration	**Severely** – activities or concentration markedly affected	**Overwhelmingly** – unable to think of anything else
n	❑	❑	❑	❑	❑
rtness of breath	❑	❑	❑	❑	❑
akness or lack of rgy	❑	❑	❑	❑	❑
usea (feeling like you going to be sick)	❑	❑	❑	❑	❑
miting (being sick)	❑	❑	❑	❑	❑
r appetite	❑	❑	❑	❑	❑
nstipation	❑	❑	❑	❑	❑
uth problems	❑	❑	❑	❑	❑
wsiness	❑	❑	❑	❑	❑
r mobility	❑	❑	❑	❑	❑
ing	❑	❑	❑	❑	❑
iculty sleeping	❑	❑	❑	❑	❑
stless legs or difficulty ping legs still	❑	❑	❑	❑	❑
eling anxious	❑	❑	❑	❑	❑
eling depressed	❑	❑	❑	❑	❑
anges in skin	❑	❑	❑	❑	❑
rrhoea	❑	❑	❑	❑	❑


Freedom from pain
3
OPIOID FOR MODERATE TO SEVERE PAIN
± NON-OPIOID
± ADJUVANT
Pain persisting or increasing
2
WEAK OPIOID FOR MILD TO MODERATE PAIN
± NON-OPIOID
± ADJUVANT
Pain persisting or increasing
1
NON-OPIOID
± ADJUVANT
PAIN

Efficacy of the WHO Analgesic Ladder to Treat Pain in ESRD

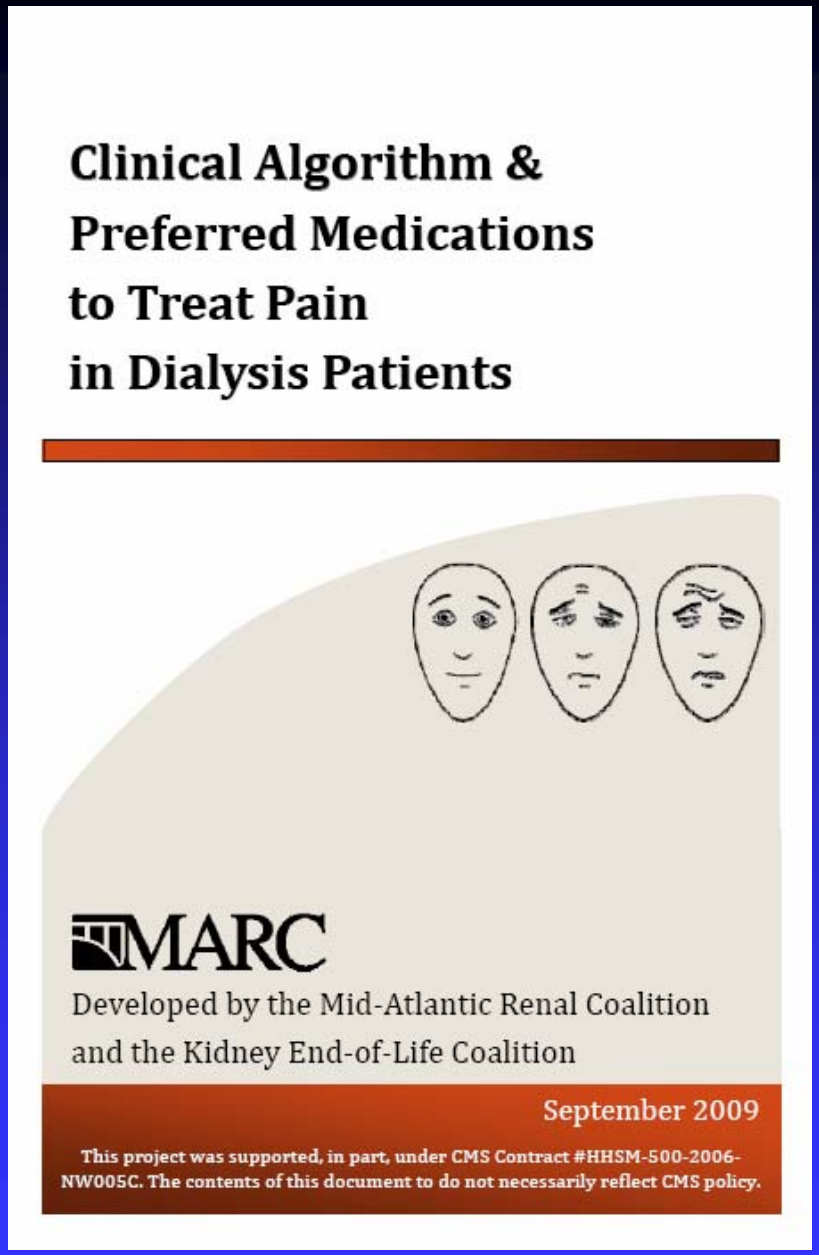


45 HD patients

Initial Pain Score (0-10)

Post Treatment Pain Score (0-10)

Barakzoy, JASN 2006



http://www.kidneyeol.org/painbrochure9.09.pdf.

Overview of Essentials of Pain Management

- Assess pain intensity on a 0 -10 scale in which 0 = no pain at all and 10 = the worst pain imaginable. Determine if the pain is mild (1-4), moderate (5-6), or severe (7-10).
- Prescribe pain medications and dosages according to the World Health Organization 3-Step Analgesic Ladder adapted for patients with chronic kidney disease (see page 2).
- Assess the character of the patient's pain and determine whether it is nociceptive, neuropathic, or both. Patients may have more than one type of pain; each pain syndrome should be diagnosed and treated.
- Nociceptive pain involves intact pain receptors and is described by patients as aching, dull, throbbing, cramping, or pressure. Neuropathic pain involves injury to pain receptors and is described by patients as tingling, burning, stabbing, or numb (see pages 3 & 4). Treatment of severe neuropathic pain usually requires opioid medications in addition to gabapentin or pregabalin, or other medications specific for neuropathic pain.
- Assess pain regularly for site, relieving and aggravating factors, and temporal relationships, and assess treatment regularly for effect on functioning and quality of life.
- Believe the patient's report of pain.
- Refer for non-pharmacological interventions as appropriate.
- Use adjuvant medications to reduce pain and side effects.
- Anticipate and treat constipation.
- Always consider depression as a potential contributor.
- Screen for opioid abuse.

RECOMMENDED PRACTICES

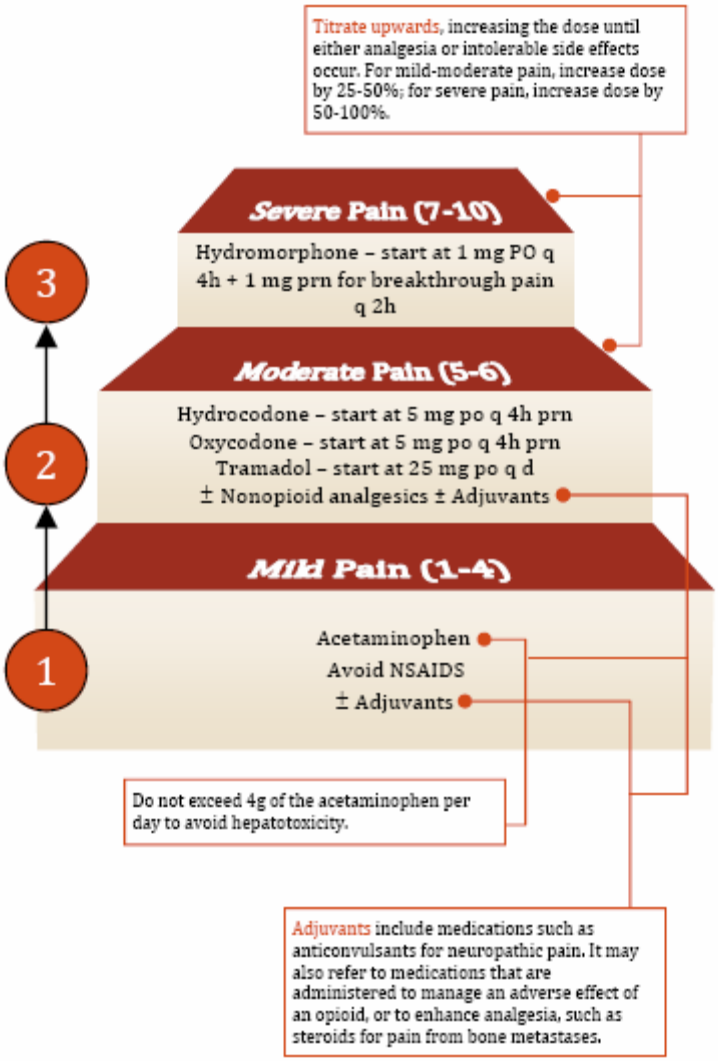
A Educate patient/caregivers on pain assessment and charting at home, goals of therapy, management plan, and potential complications.

B Aim to achieve control at a level acceptable to the patient; it may not be necessary or possible to make the patient completely pain-free. Provide prn doses for breakthrough pain.

C For chronic pain, schedule doses over 24 hours on a regular basis. Additional "breakthrough" medication should be available on an "as needed" basis.

Analgesic Ladder

WHO 3-STEP ANALGESIC LADDER



Algorithm to Treat Severe Chronic Pain in Dialysis Patients

Hydromorphone:

- Start at 0.5 -1 mg PO q 4 hours plus 1 mg PO q 2 hours prn pain. Titrate dosage every 2 –3 days.
- If pain is not controlled, is continuous, and 24-hour dose exceeds 12 mg, substitute transdermal fentanyl 25mcg/h for regular dose of hydromorphone.
- If further "as needed" hydromorphone exceeds 12 mg/24 hours, increase dose of fentanyl patch by further 25 mcg. Titrate upwards in similar manner if pain is not controlled.
- Caution: Toxic metabolite, H3G, accumulates if dialysis is stopped.

Fentanyl Transdermal Patches:

- Useful for patients with chronic, stable pain. Start after immediate-release opioid dose is established. Analgesia may not be obtained for 12-24 hours, so continue previous prn analgesics for 12 hours to ensure a smooth transition.
- Initial dose for opioid-naïve patients is 12 mcg/h (increase dose every 3 – 6 days as needed for pain). Useful choice if dialysis non-adherence or stopping dialysis are concerns.
- Fentanyl patches above 12 mcg/hr should not be used in opioid-naïve patients due to risk of respiratory depression.
- Prescribe medication for breakthrough pain.

Methadone:

- Only recommended to be used by knowledgeable physicians.
- Use if unable to control pain with hydromorphone or fentanyl (opioid-allergy, adverse effects, or refractory pain).
- Obtain baseline QTc (methadone may prolong QT interval) and repeat EKG if daily dose > 100 mg. QTc < 450 ms considered safe.
- Beware of multiple drug interactions and adjust dose .
- Consult www.hopweb.org for opioid conversions from hydromorphone or fentanyl to methadone.

Nociceptive Pain Treatment

Note: Monitor for opioid toxicity (sedation, hallucinations, myoclonus and/or asterixis) and opioid adverse effects (constipation, nausea, and vomiting).

- Confirm patient is able to swallow oral medications.
- Long-acting opioids should be started after the needed dosage to control pain is established with short-acting opioids.
- A rescue dose equivalent to 10% of the 24-hour dose of opioid should be available to be taken every 1-2 hours prn for breakthrough pain. Remember to recalculate the rescue dose when increasing the base dose (long-acting dose).
- If the patient is experiencing pain when he/she takes the long-acting opioid, he/she should take a rescue dose at the same time and not expect the long-acting opioid to relieve the breakthrough pain.

Neuropathic Pain Treatment

First

Gabapentin:

- Start 100 mg po q hs and increase weekly by 100 mg per night to a maximum of 300 mg q hs. Occasionally doses up to 600 mg a day can be safely used.
- If ineffective at maximum tolerated dose, discontinue and start Pregabalin.

Second

Pregabalin:

- 25 mg q hs and increase every few days to 100 mg a day.
- If pain control is inadequate at target dose for 2 to 4 weeks, or intolerable adverse effects, discontinue and start Desipramine.

Third

Desipramine:

- 10 mg po q hs. Titrate to adequate pain control or maximum dose of 150 mg q hs.
- If pain control still remains inadequate, institute WHO 3-Step Analgesic Ladder (see page 2).

Management of Opioid Adverse Effects

Acute:

Excessive sedation, compromised respiration with low O_2 saturation

- Dilute 0.4 mg of Naloxone in 10 ml NS and administer 1 ml IV q 1-2 minutes until patient arouses.
- Continue to monitor for return of sedation or slowed respirations (half-life of Naloxone is shorter than half-life of opioids).

Chronic:

Nausea and/or vomiting

- Prochlorperazine 2.5 to 10 mg PO, SC or PR QID prn.
- Haloperidol 0.5 to 1 mg PO, SL, SC, IV BID-TID prn (Haloperidol solution is flavorless).
- Metoclopramide 5 to 10 mg PO, SC, IV QID prn.
- Dimenhydrinate may be used 25 to 50 mg PO, SC, IV but is less effective, except if secondary to motion/dizziness. It also reduces opioid-induced pruritus.
- Ondansetron 4-8 mg PO or IV q8H prn.

Constipation

- Start docusate sodium and stimulant laxative (e.g. Senna, Bisacodyl) at same time as opioids as preventative therapy.
- Lactulose at 15-30 ml po daily to BID is more effective for opioid-induced constipation but patients may prefer medication in pill form.

Cognitive impairment

- Try decreasing the opioid dose to determine if function improves. If it does, consider using a lower dose or a different pain medication.

References for this document can be found on the Kidney End-of-Life Coalition website: www.kidneyeol.org.

Preferred Medications in CKD

Recommended
Fentanyl
Methadone
Hydromorphone
Acetaminophen
Gabapentin Doses up to 300 mg/d are generally considered safe in ESRD, but doses up to 600 mg should be used with caution; note that gabapentin use for neuropathic pain is off-label but effectiveness has been documented.
Pregabalin Doses up to 100 mg/d are generally considered safe in ESRD.
Use with Caution
Tramadol Limit dose to 50 mg BID. Higher doses have been used but caution needs to be taken since pharmacokinetics are not well established.
Hydrocodone/Oxycodone Insufficient pharmacokinetic evidence to establish safety in CKD, but literature reports use without major adverse effects.
Desipramine/Nortriptyline Alternative to treat neuropathic pain, but more adverse effects than gabapentin and pregabalin.
DO NOT USE
Morphine
Codeine
Meperidine
Propoxyphene
Morphine, codeine, meperidine, propoxyphene: Renally excreted metabolites accumulate in CKD causing neurotoxicity.

Pain Assessment

Instructions: Please have your patient describe his/her level of pain by circling the appropriate number or the face that best describes the intensity of pain. Determine if the pain is nociceptive or neuropathic by the descriptors the patient uses to describe the pain (see algorithm below). Repeat the pain assessment on subsequent patient visits.

1 "Are you having any pain?"

Verbal: "How much pain are you having, from 0 (no pain) to 10 (worst pain imaginable)?"

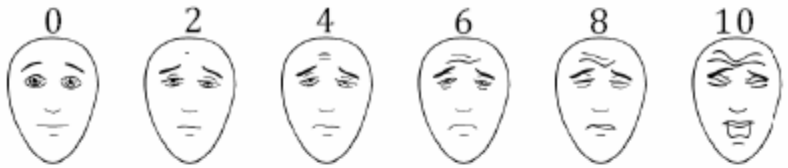
Written: "Circle the number that describes how much pain you are having."

NUMERICAL RATING SCALE

No pain	0	1	2	3	4	5	6	7	8	9	10	Worst imaginable pain

CATEGORICAL SCALE/FACES R

None (0)
Mild (1-4)
Moderate (5-6)
Severe (7-10)



2 "Where is the pain located?"

Record, screen and address each site.

3 "How much pain are you having?"

Use *Pain Screening Tool—Numerical Scare or Categorical Faces/R Scale (for cognitively impaired).*

4 "What is the character of the pain?"

Nociceptive—Patient descriptors: *aching, dull, throbbing, cramping, pressure*
Neuropathic—Patient descriptors: *tingling, numbness, burning, stabbing, increased pain to light touch*
Both Nociceptive and Neuropathic

5 "What relives the pain?", "What aggravates the pain?"

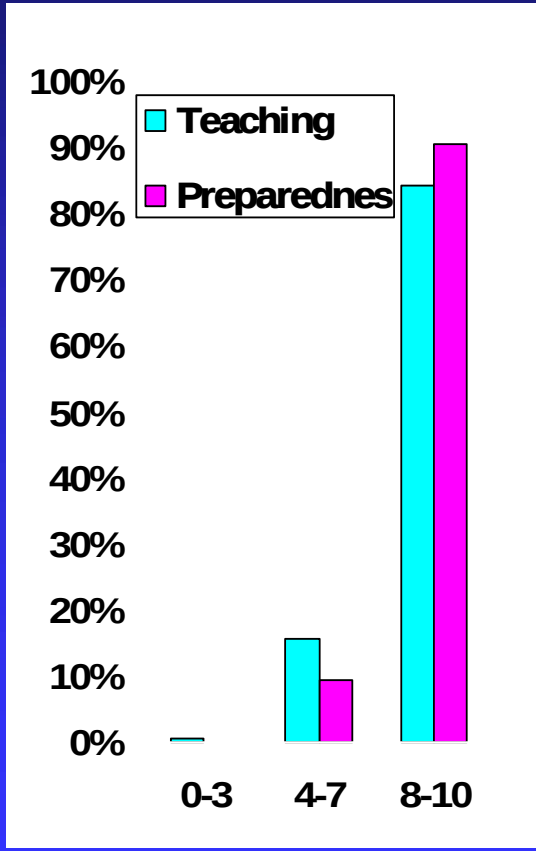
Remaining Challenges

- End-of-life care training for nephrology staff

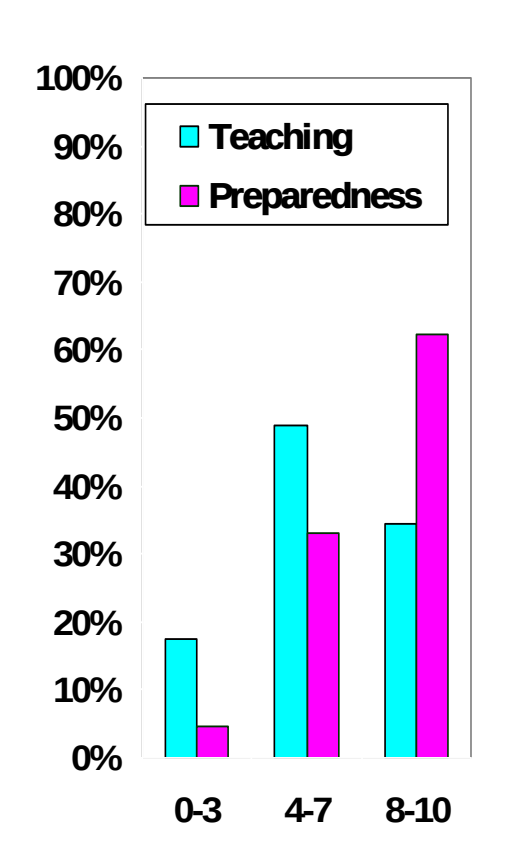
End-of-life Care Training in Nephrology

AJKD2003;42:813-820

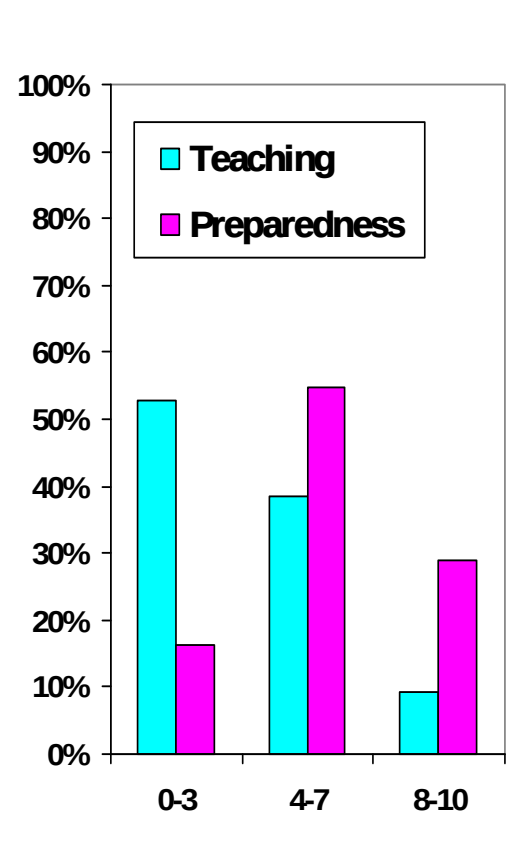
Hemodialysis



Distal RTA



End-of-Life Care

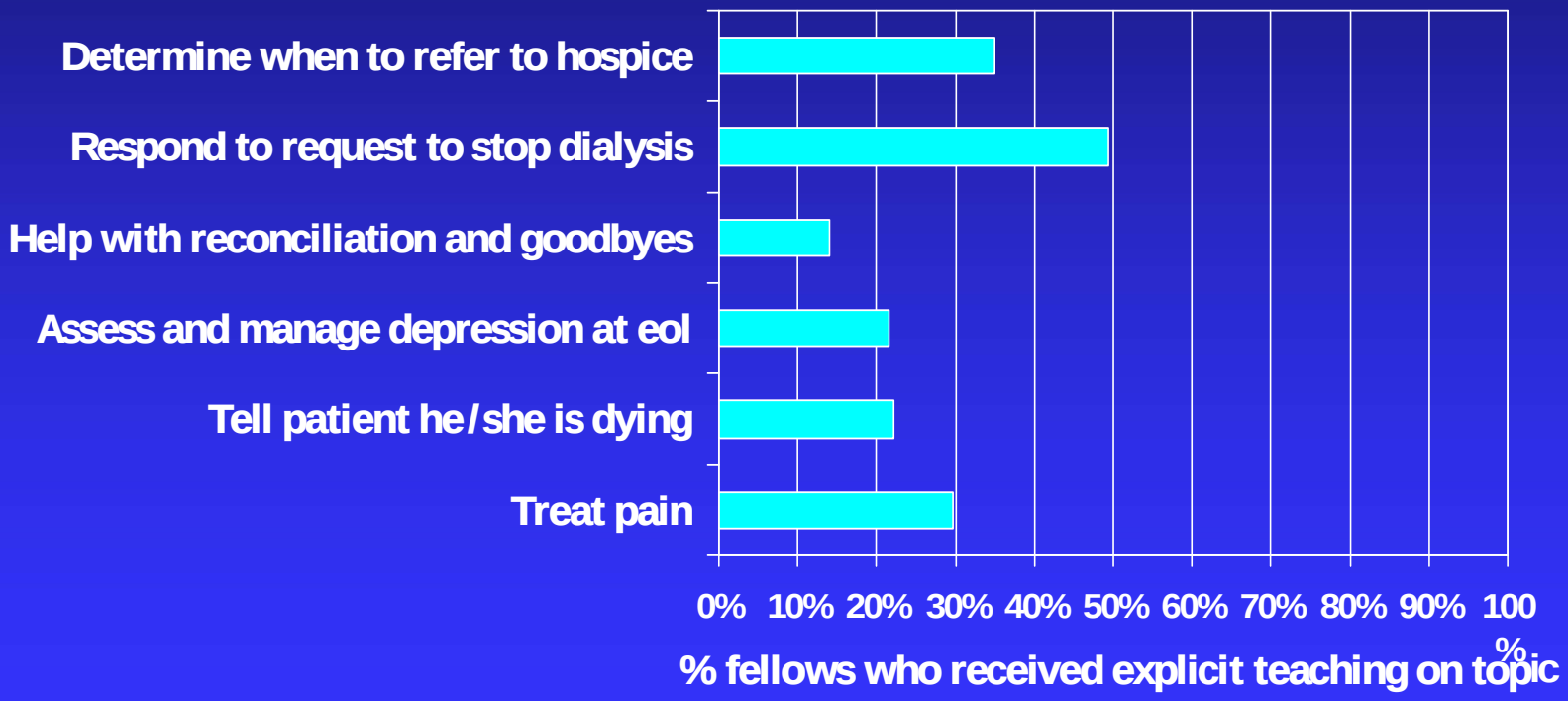


0 = no teaching or completely unprepared 10 = a lot of teaching or completely prepared

End-of-life Care Training in Nephrology

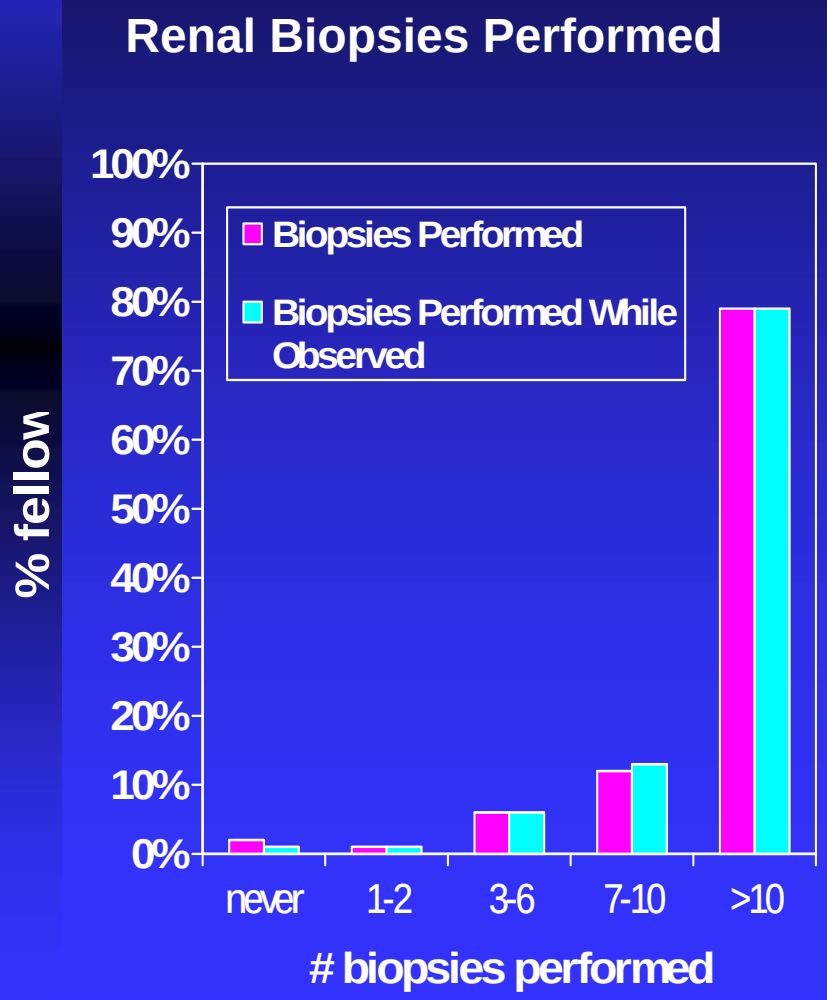
AJKD2003;42:813-820

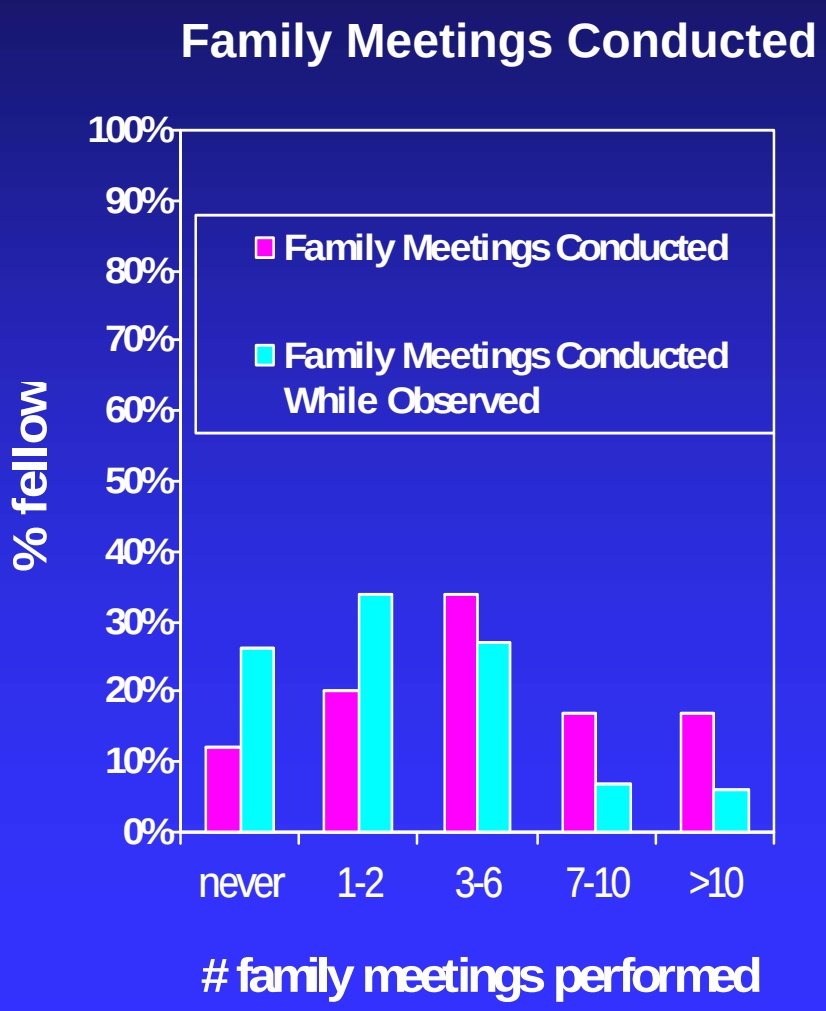
During your fellowship, were you explicitly taught to:



End-of-life Care Training in Nephrology

AJKD2003;42:813-820





"There's no easy way I can tell you this, so I'm sending you to someone who can."

Dialysis Withdrawal and Hospice Status of Deceased Patients: USRDS 2001-2002 Cohort

Dialysis Withdrawal and Hospice Status	Deceased Patients (N=115,239)	Percent	Mean Age in Years
Hospice Yes	15,565	**13.5**	73.4 ± 11.0 *
Hospice No	99,674	86.5	68.6 ± 13.4
Withdrawal Yes	25,075	21.8	72.7 ± 11.8 **
Hospice Yes	10,518	**41.9**	73.9 ± 10.6
Hospice No	14,557	58.1	71.7 ± 12.3
Withdrawal No	81,624	70.8	68.0 ± 13.4
Hospice Yes	2,751	**3.4**	71.7 ± 11.7
Hospice No	78,873	96.6	67.9 ± 13.5
Withdrawal Status Unknown	8,540	7.4	71.1 ± 13.2

Murray and Moss, CJASN 2006

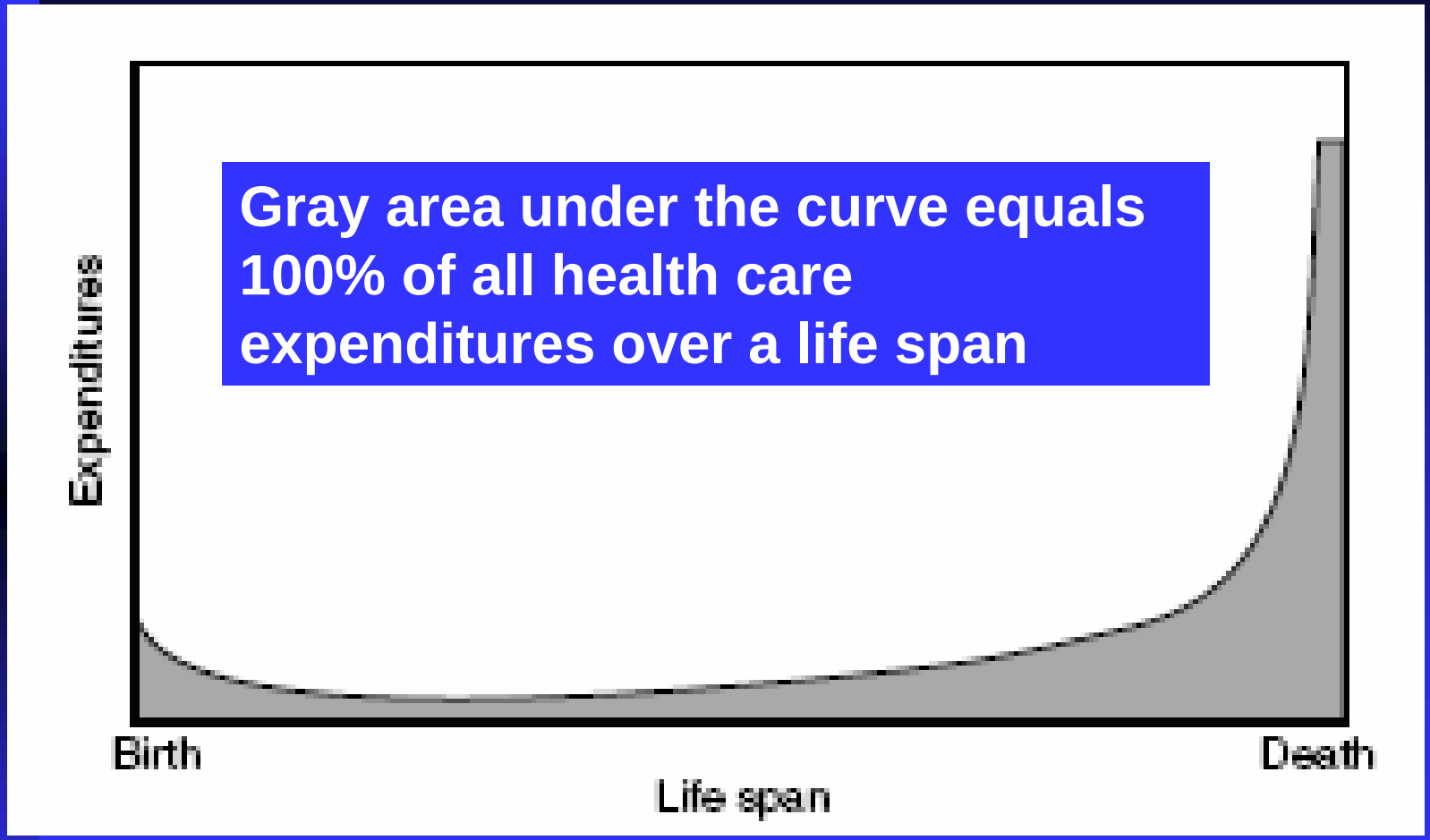


Figure 1. Americans' Current Health Care Expenditures Are Concentrated in the Final Part of the Life Span

RAND Health White Paper, Living Well at the End of Life, 2006

Costs Associated with Hospice Use in ESRD: USRDS 2001-2002 Cohort

Dialysis Withdrawal and Hospice Status	Patients (N)	Mean cost last 6 months of life (US$)	Mean cost last week of life (US$)	Mean hospital days last week
6 month cohort	91,687	64,461	6,885	3.0
Patients who withdrew				
Hospice Yes	8,200	**60,261**	**3, 324**	1.4
Hospice No	11,317	66,253	6,257	3.7
Withdrawal No				
Hospice Yes	2,165	**64,979**	**4,318**	**1.8**
Hospice No	65,868	65,345	7,588	3.1

Murray and Moss, CJASN 2006

Site of Death and Hospice Days:

USRDS 2001-2002 Cohort

Dialysis Withdrawal and Hospice Status	Site of Death	Site of Death (%)	Mean days in Hospice
6 month cohort	Hospital Home	63.0 16.7	2.0
Patients who withdrew			
Hospice Yes	Hospital Home	**22.5** **45.3**	**10.1**
Hospice No	Hospital Home	68.5 10.8	0
Withdrawal No			
Hospice Yes	Hospital Home	**41.8** **37.3**	**21.0**
Hospice No			

Murray and Moss, CJASN 2006

Remaining Challenges

- Enhance pain & symptom management & HRQL
- Enhance management of other symptoms, including spiritual distress
- Fully integrate advance care planning
- Identify which patients would benefit from a palliative care (conservative) as opposed to dialytic approach to their ESRD
- Increase access to palliative care including hospice for dialysis patients