

Futility in ICU: Optimum care for the hopelessly ill

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The problem

“Yes, there are patients who are too sick for intensive care. Despite our wonderful advances and even anticipating future progress, there will always be patients too sick for intensive care. The challenge is for us to identify them in ways that is fair to them and the growing number of patients who can benefit from our services. The search cannot begin too soon”

William A Knaus

Br J Hosp Med 1987; 37: 381

Menu

- Definitions of futility & problems with definitions
- Accurate prognostication
- Family discussions and decision making

Definition of futility (1)

- **Mathematical** (Schniederma Ann Intern Med 1990; 112: 949)
 - Medical futility has quantitative and qualitative elements
 - Last 100 cases a medical treatment has been useless
→ regard that treatment as futile
- Based upon personal experience, experiences shared with colleagues, or consideration of published empiric data
- Distinguish:
 - Effect, which is limited to some part of the patient's body
 - Benefit, which appreciably improves the person as a whole
 - Treatment that fails to provide the latter, whether or not it achieves the former, is futile

But are chances <1% not worth taking and is life on ventilatory support not worth living?

Definition of futility (2)

- **Physiological futility** (Trough et al N Engl J Med 1992; 326: 1560)
 - Treatments unable to achieve their physiological goal (e.g. normalise MAP with vasopressors or correct ABGs with IPPV)
 - Physiological scoring (APACHE, sequential organ failure scores, changes over time)
- But prioritising physiological homeostasis above quality of life
- Needs to be seen in context

Definition of futility (3)

- Define conditions (Murphy et al Arch Intern Med 1993; 153: 1641)
 - Metastatic cancer
 - Child's Class C cirrhosis
 - Dementia requiring long term care
 - HIV with >2 PCP infections
 - Coma >48Hrs
 - Multiple organ failure with no improvement over 3 days on ICU
 - Unsuccessful out of hospital CPR
- But a range of outcomes in each category

Definition of futility (4)

- Ask ICU staff (Sibbald et al CMAJ 2007; 177: 1201)
 - the use of considerable resources without a reasonable hope that the patient would recover to a state of relative independence or be interactive with his or her environment
- Qualitative & vague

Definition of futility (5)

- Futility versus rationing
- The Society of Critical Care Medicine clarification:
“treatments that are extremely unlikely to be beneficial, are extremely costly, or are of uncertain benefit may be considered inappropriate and hence inadvisable, but should not be labeled futile.”
- No balancing
- Futility implies no or vanishingly small benefit

Definition of futility (6)

- Futility versus value
- The ATS Bioethics Taskforce:

“A life-sustaining intervention is futile if reasoning and experience indicate that the intervention would be highly unlikely to result in a meaningful survival for that patient. Here, meaningful survival specifically refers to a quality or duration of survival that would have value to that patient as an individual (*or their family*).”
- Separation of futility from a value judgement

Futile care pre-conditions

- Perceived inappropriate care
 - Intubation and ventilator support
 - Co-morbidities
 - Poor quality of life
 - Bleak prognosis
 - Pain and suffering
 - Brain death or persistent vegetative state
 - Prolonged stay in intensive care unit
- Situations where inappropriate care is provided
 - Demands of family or substitute decision-maker
 - Lack of skilled and timely communication
 - Lack of consensus among treating team
- Reasons why families pursue inappropriate
 - Cultural or religious reasons
 - Lack of education or knowledge about critical care

Attempted improvements /
solutions

Procedural Solutions

- Designed to overcome value laden decisions which may have little medical consensus and societal support
- Committee or policy to make decisions
- Enactment of decision
 - Continue to negotiate
 - Transfer to another hospital
 - Legally appoint an alternative decision maker
 - Unilaterally withdraw intensive care support

Procedural Solutions....But

- Effectiveness of Bioethics Committees
- 100 patients (out 331 referrals) (Rivera et al Chest 2001; 119: 1944)
- Principal factor → an unreasonable expectation of improvement (58%)
- Other factors → fear of legal consequences (14%)
 - religion (9%)
 - guilt (7%)
 - family dissent (7%)
 - patient choice (5%)
- Ethics consultations effective:
 - 28 of 36 (77%) where a physician was primarily responsible
 - 31 of 61 (51%) when family was responsible
- Conflict may not be resolved

Accurate prognostication

Accuracy of prognosis

- Clinical scenarios tested (Brims et al. Clinical Medicine 2009; 9: 16)
- Consultants & SpRs in GIM, COTE, ICM asked to review six clinical scenarios

Old lady with hip fracture

84-year-old female found on the floor, stroke affecting left side and # L hip. Orthopaedics say dynamic hip screw is required. MTS 6/10. Possible chest infection on R and dehydrated. Background of hypertension. Independent with stick prior, living in residential home. ECG = slow AF, N axis, inverted 't' waves V4-V6. Troponin awaited. HB 10.2, WCC 13.2, Creat 145, CK 302, CRP 69.

Should this patient be for CPR/intubation?

Yes or No

Cystic Fibrosis

19 year old with cystic fibrosis. Inpatient for eight days on iv antibiotics. Previous sputum cultures have grown pseudomonas spp. Today Burkholderia cepacia reported. There is worsening hypoxia, on 60% O₂, pH 7.35, PO₂ 7.8, PCO₂ 6.9, BIC 28, BE -3.8, Sats 90%. Previously intolerant of NIV. 1st year mathematics student at university. No previous admissions to ITU. Family are now talking of lung transplantation

Should this patient be for CPR/intubation?

Yes or No

Renal cancer

71-year-old male. Known hypernephroma. Recent CT shows multiple metastases to lungs and vertebral bodies. Oncologists feel chemotherapy may help. Admitted SOB, very confused and pyrexial. Likely urinary and chest sepsis. Thin, frail and in distress. Sats 93% on 35% O2. Neutrophilia and high CRP. Relatives report general decline, loss of weight, and worsening confusion over the last month. Refused operation on kidney previously.

Should this patient be for CPR/intubation?

Yes or No

Prostatic Cancer

89-year-old male with known prostate cancer, recent PSA 15. Known IHD, PVD, CRF (creat 151), previous smoker for 70 years. Admitted three days ago confused with a UTI, today developed chest pain and placed on IV GTN. Dropped his BP to 96/92 and oliguric last three hours. From residential home, but was not coping and needs placement to NH. Not walked for several weeks, takes two to transfer.

Should this patient be for CPR/intubation?

Yes or No

Locked-in Syndrome

54 year old with locked in syndrome following stroke three months ago. Can only communicate with movement of eyes. Transferred from rehab unit with worsening chest sepsis and hypoxia. MRSA cultured from sputum. Has permanent tracheostomy with thick secretions. Very supportive family; patient has previously expressed a wish for rehabilitation, but has made little progress. Patient now wants to be back in rehab unit, not MAU. BP 92/65, P 126, sats 94% on 35% O2, warm and dilated peripherally, normal renal function

Should this patient be for CPR/intubation?

Yes or No

COPD

66-year-old male with known COPD. Admitted with SOB. Prior to exacerbation was able to walk around house only; has PRN home oxygen and nebs. Talking to ambulance crew on arrival, now unrousable. ABG (40% O₂) pH 7.1, PO₂ 6.2, PCO₂ 11.5, BIC 35, BE -7.4. CXR – changes consistent with COPD only.

Should this patient be for CPR/intubation?

Yes or No

	Yes to CPR N (%)	No to CRP N (%)	Modified PAM index	Pre-arrest morbidity score	Prognosis after resuscitation score
Fractured hip	18 (38)	29 (62)	N	N	N
Cystic fibrosis	44 (92)	4 (8)	Y	N	Y
Renal cancer	2 (4)	46 (96)	N	N	N
Prostatic cancer	2 (4)	46 (96)	N	N	N
Locked-in	27 (60)	16 (40)	Y	N	Y
COPD	25 (52)	23 (48)	Y	Y	Y

	Yes to CPR N (%)	Morbidity scores	GIM %	COTE %	ICM %
Fractured hip	18 (38)	N x3	38	64	10
Cystic fibrosis	44 (92)	Y x2	93	91	90
Renal cancer	2 (4)	N x3	7	0	0
Prostatic cancer	2 (4)	N x3	7	0	0
Locked-in	27 (60)	Y x2	63	64	38
COPD	25 (52)	Y x3	59	55	30

Confidence by specialty
Mean (SD)

Case	GIM	EC	ICM	Confidence with decision
1	4.07 (0.78)	3.9 (0.94)	4.2 (0.63)	ns
2	4.29 (0.76)	3.36 (1.12)	4.2 (0.92)	GIM more confident than EC p=0.02
3	4.59 (0.75)	4.54 (0.69)	4.6 (0.84)	ns
4	4.41 (0.83)	4.0 (0.82)	4.7 (0.67)	ICM more confident than EC p=0.04
5	3.63 (1.08)	3.55 (0.82)	3.56 (0.78)	ns
6	4.07 (1.12)	4.09 (0.54)	3.3 (0.95)	GIM more confident than ICM p=0.05 EC more confident than ICM p=0.03

Prognostication

- Dispersion among decisions seems matched variety in clinical scenarios

And yet

- Confidence in accuracy of own reliability and accuracy

Families' views of predictions of futility

(Zier et al Crit Care Med 2009; 136: 110)

- Semi-structured interviews of 50 patients' families
- 32 (64%) families reluctance to accept:
 - Scepticism about certainty of prediction
 - Need to see failure of recovery
 - Need to triangular multiple information sources
 - Belief in God/miracle
- 16 (32%) patients elected to continue when predicted chance of survival $<1\%$

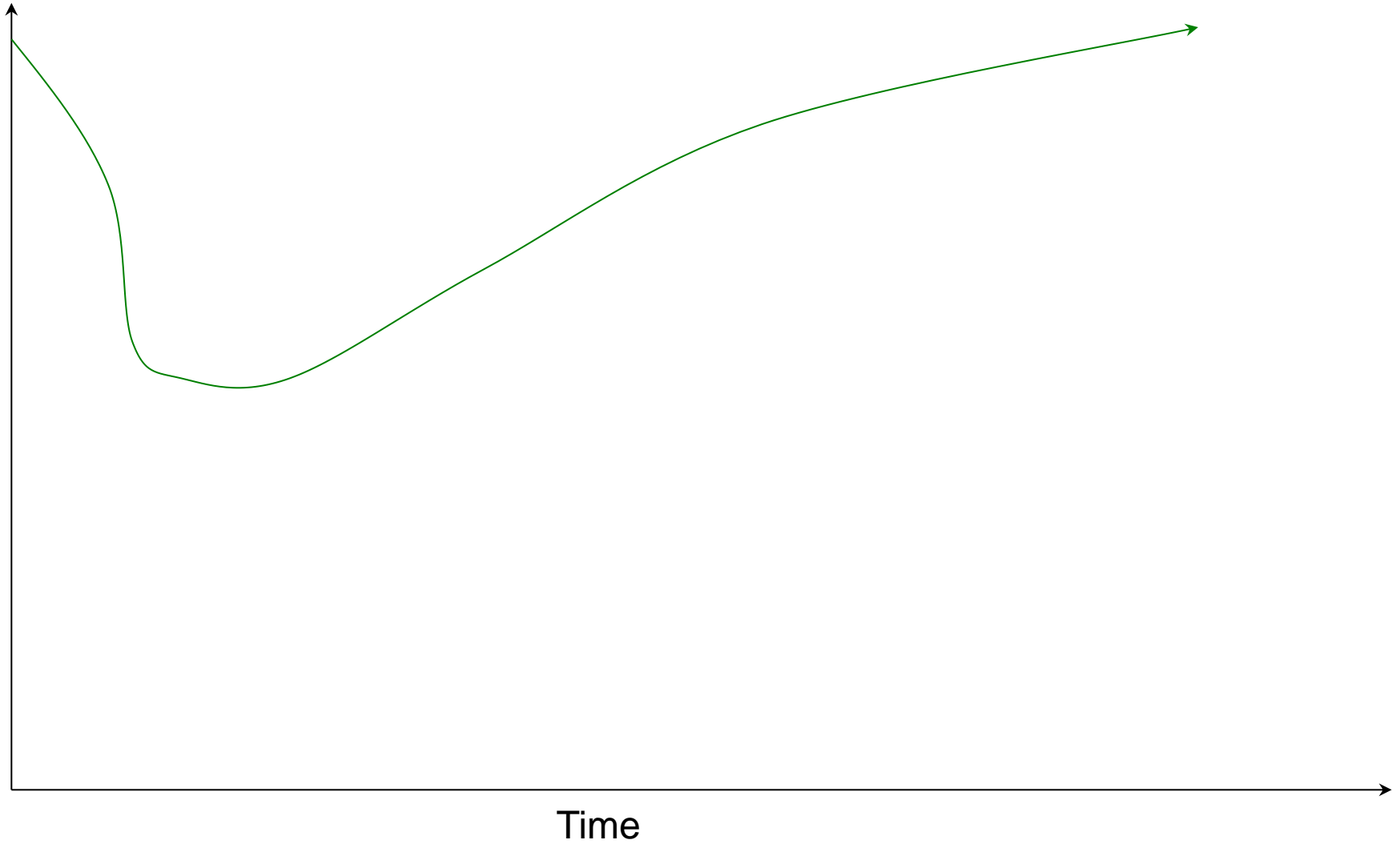
Futility disagreement

- Disagreements between physicians and surrogates about what is a valuable health state and at what cost it should be pursued
- Largely based upon uncertainty
- Part of that uncertainty due to human nature
 - Random behaviour, inconsistent and unreliable decision making, memory failure

Prognostication in practice

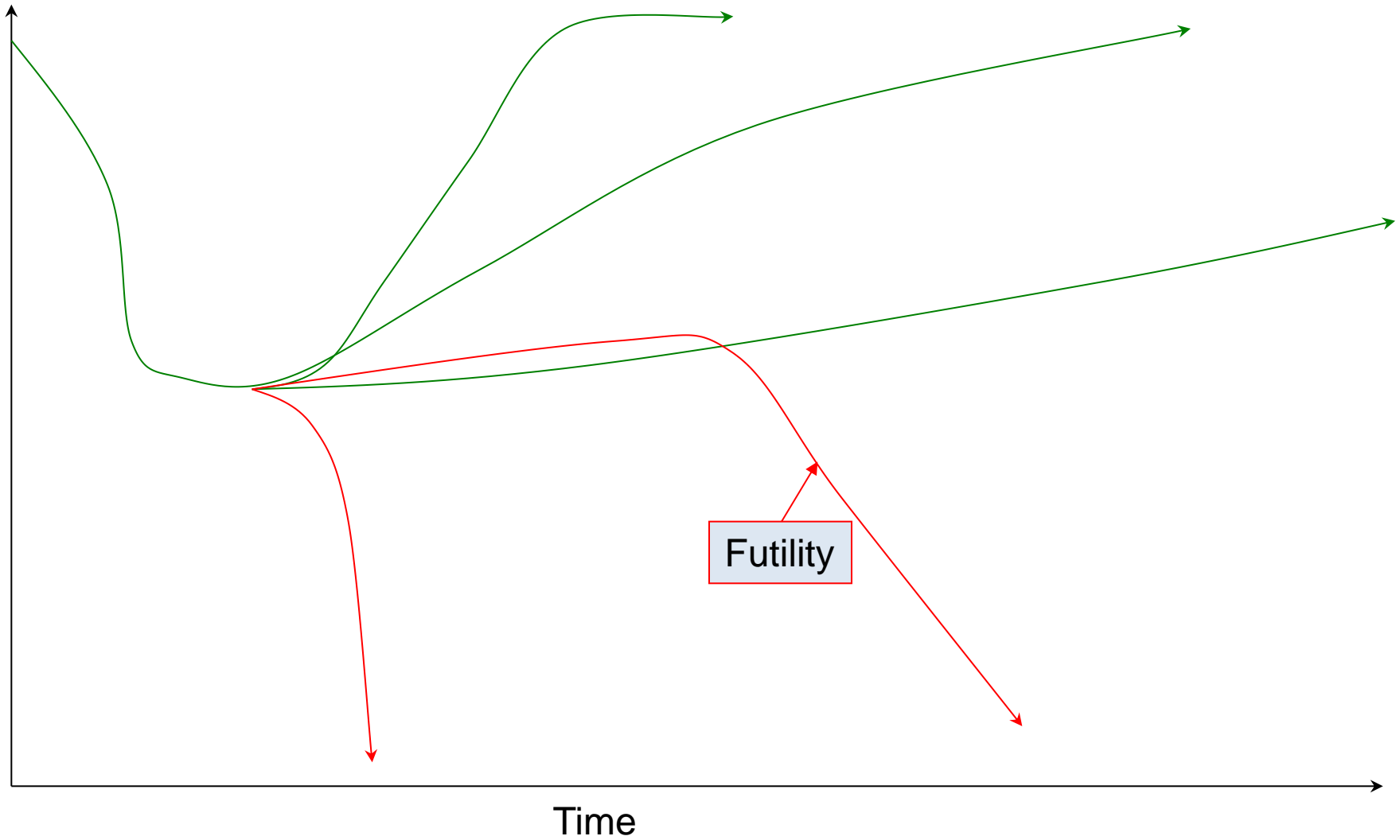
Time course for ICU patients

Physiological stability



Time course for ICU patients

Physiological stability



Recognising futility

- Trigger:
 - Recognised and clearly demonstrable downturn in physiological status AFTER a period of static or little progress
 - Demonstrate downturn to impartial third party (i.e. HM Coroner)
 - Physiological futility
- Process:
 - Communication and negotiation

Family discussions and decision making

Communication and Negotiation

- Usually a breakdown in trust
 - Poor medical communication
 - Poor understanding of patient values by clinicians and families
 - Unrealistic expectations (portrayed in media)
- Principles of negotiation (Fisher & Ury 1983)
 - Separation of people from the problem
 - Focus on interests rather than positions
 - Generate options before setting an agreement
 - Agreement based upon objective criteria

Separate the people from the problem

- Too many clinicians updating → confusion and distrust → *Assign clinicians with an effective relationship*
- Anger → breakdown in communication and trust → *Shift from a focus on the emotional response to resolving remaining problems. Offer a second opinion, exchange relevant medical information and information about the patient's values*

Focus on interests rather than positions

- Team/family dispute over the DNR status → *Explore concerns, assurance that DNR status will not diminish symptom relief. Seek common ground on a treatments limits for most likely scenarios*
- Family concerns about discharge from the ICU → *Explore acceptable alternatives such as short-term enhanced nursing to patient ratio on the ward, or physician continuity strategies*

Generate options before setting an agreement

- *Explore possible treatment options with consultants and others before settling on recommendations, discuss preferred roles in decision making, and seek consensus about the treatment course most consistent with the patient's values and preferences*

Agreement based upon objective criteria

- Team/family dispute about ongoing life sustaining treatments → *Trials of therapy, and the rationale for the time line are clearly presented*

Shared decision model

(White et al Arch Intern Med 2007; 167: 461)

- Discuss nature and likely outcome
 - Explore ramifications of forthcoming decisions
 - Determine patient values
 - Confirm family understand information
 - Discuss preferred roles in decision-making
 - Achieve consensus about treatment course
-
- Summarised in 10 domains

Shared Decision Making

(White et al Arch Intern Med 2007; 167: 461)

Providing medical information

- (1) Discuss the nature of the decision. *What is the essential clinical issue?*
- (2) Describe treatment alternatives. *What are the clinically reasonable choices?*
- (3) Discuss the pros and cons of the choices. *Pros and cons of the treatment choices?*
- (4) Discuss uncertainty. *What is the likelihood of success of treatment?*
- (5) Assess family understanding. *Is there a working understanding of the decision?*

Eliciting patient values and preferences

- (6) Elicit patient values and preferences. *What is known about the patient's medical preferences or values?*

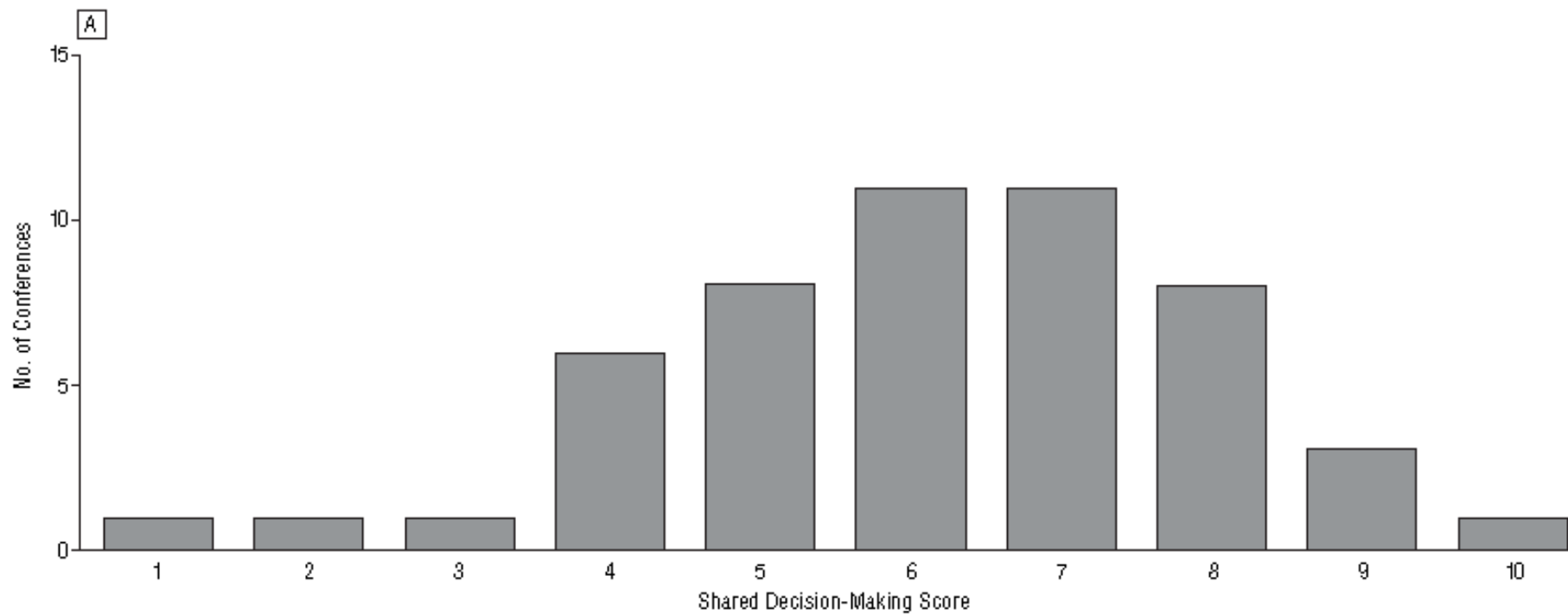
Exploring the family's preferred role in decision making

- (7) Discuss the family's role in decision making. *What role should the family play in making the decision? But avoid passing on responsibility because frequently ill equipped.*
- (8) Assess the need for input from others. *Is there anyone else the family would like to consult?*

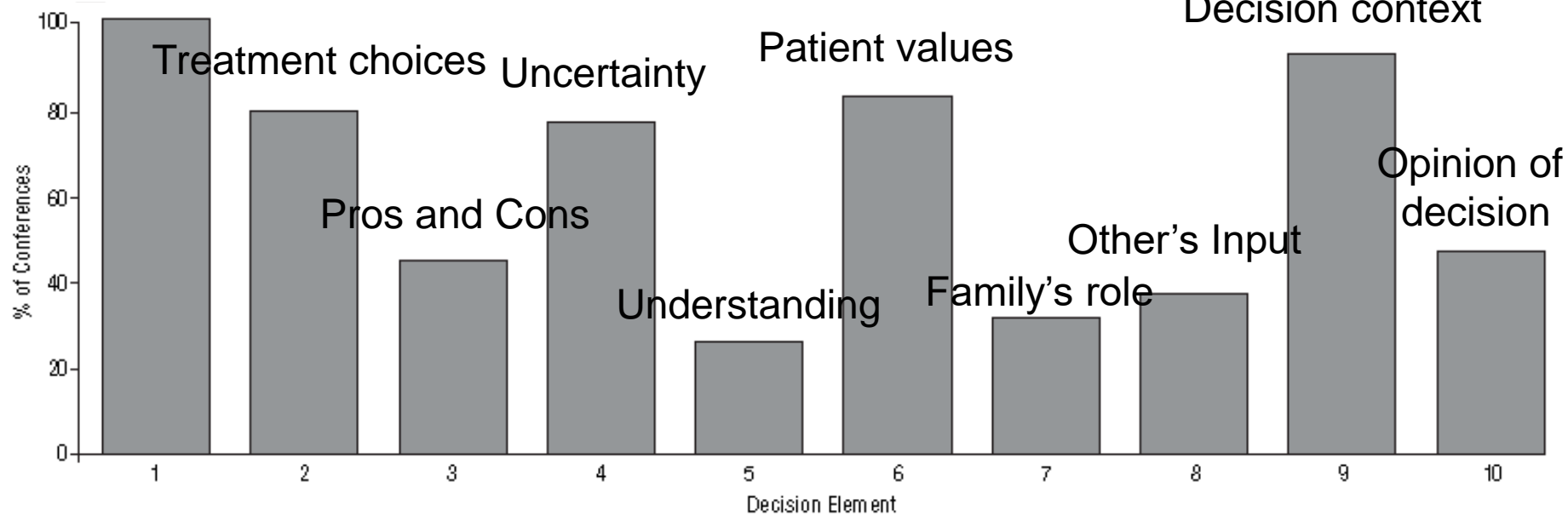
Deliberation and decision making

- (9) Explore the context of the decision. *How will the decision affect the patient's life?*
- (10) Elicit the family's opinion about the treatment decision. *What does the family think is the most appropriate decision for the patient?*

A



Clinical problem



Shared Decision Making

(White et al Arch Intern Med 2007; 167: 461)

- Mean 32 (SD 24.8) mins
- Shared decision making best when:
 - Physicians believed withdrawal the best option
 - Higher education level of family
- Modest association between shared decision making and greater family satisfaction (explaining 3% of variance of satisfaction scores)

Communication and Negotiation

- Persistent disagreement rare and maybe failure/defeat for both parties
- Rare disagreements tend to be worse case scenarios (and so not the basis for protocols etc)
- Clinicians need clear idea of concept of futility based upon accurate prognostication

Take home messages

1. Definitions of & problems with definitions
 - Physiological futility probably best
2. Accurate prognostication
 - Beware of own opinion
 - Confirmatory downward trends
 - Explanation to inquisitive third party
3. Family discussions
 - 10 domains
 - Interests not positions

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1. Definitions of & problems with definitions
 - Physiological futility probably best
2. Accurate prognostication
 - Beware of own opinion
 - Confirmatory downward trends
 - Explanation to inquisitive third party
3. Family discussions
 - 10 domains (problem, choices, Ps&Cs, uncertainty, understanding, values, roles, others, context, opinion)
 - Interests not positions