Patients âgés et réanimation

JARCA - 2024

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Inserm
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From science to health
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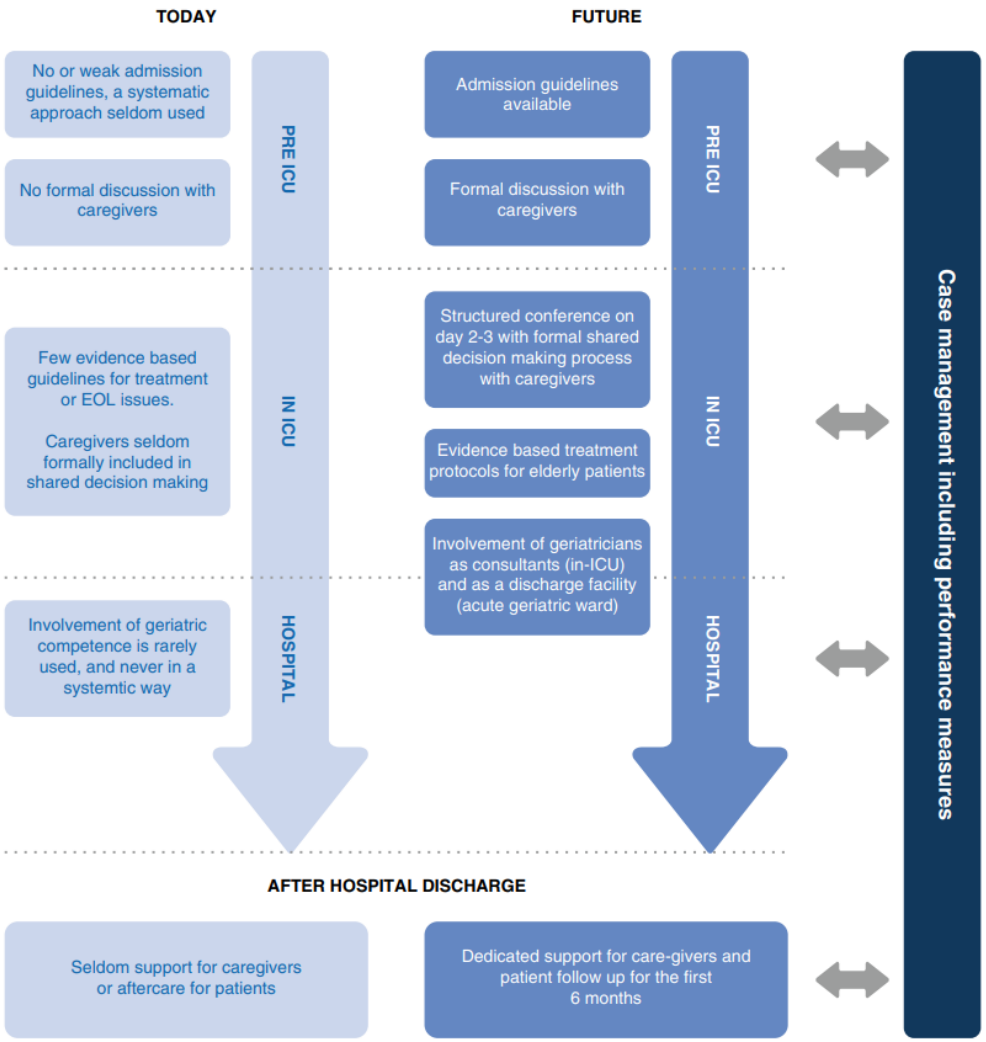
ACADÉMIE NATIONALE DE MÉDECINE
ASSISTANCE PUBLIQUE HÔPITAUX DE PARIS

REVIEW

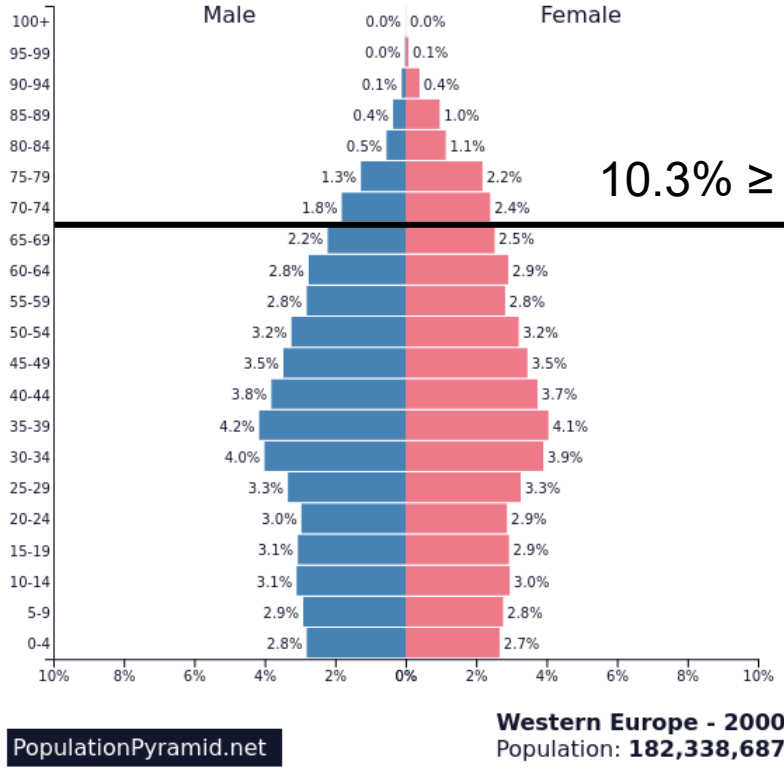
Intensive Care Med
https://doi.org/10.1007/s00134-023-07298-z

The trajectory of very old critically ill patients

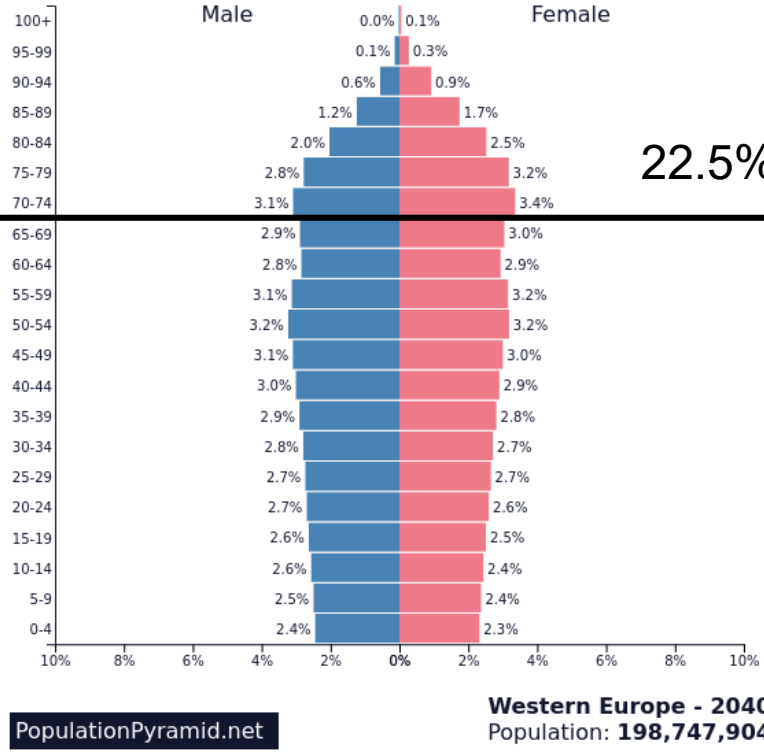
Bertrand Guidet[1*], Helene Vallet[2], Hans Flaatten[3], Gavin Joynt[4], Sean M. Bagshaw[5], Susannah K. Leaver[6], Michael Beil[7], Bin Du[8], Daniel N. Forte[9], Derek C. Angus[10], Sigal Sviri[11], Dylan de Lange[12], Margaret S. Herridge[13] and Christian Jung[14]



Pyramide des âges – Europe de l'Ouest



10.3% ≥ 70

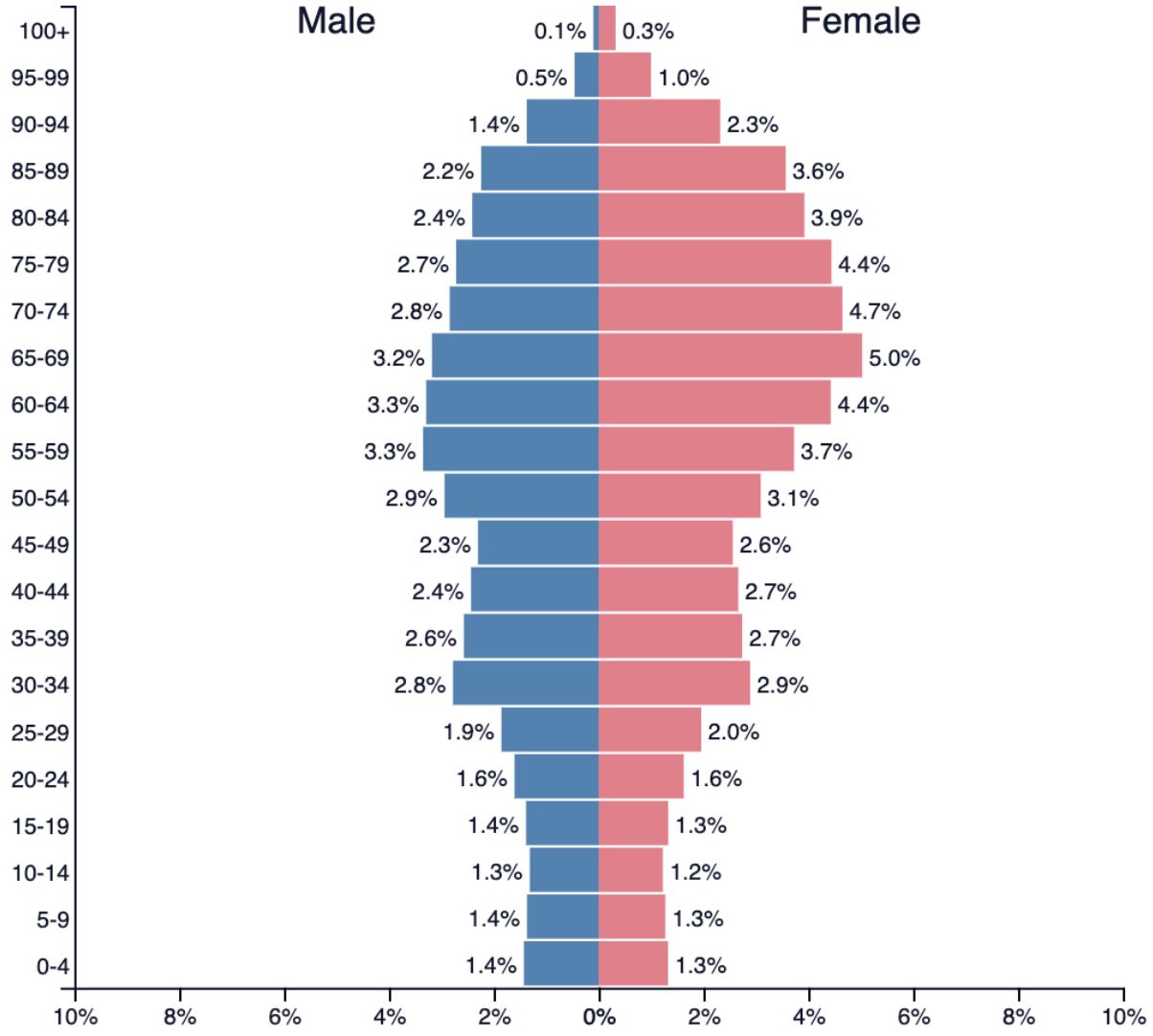


22.5% ≥ 70

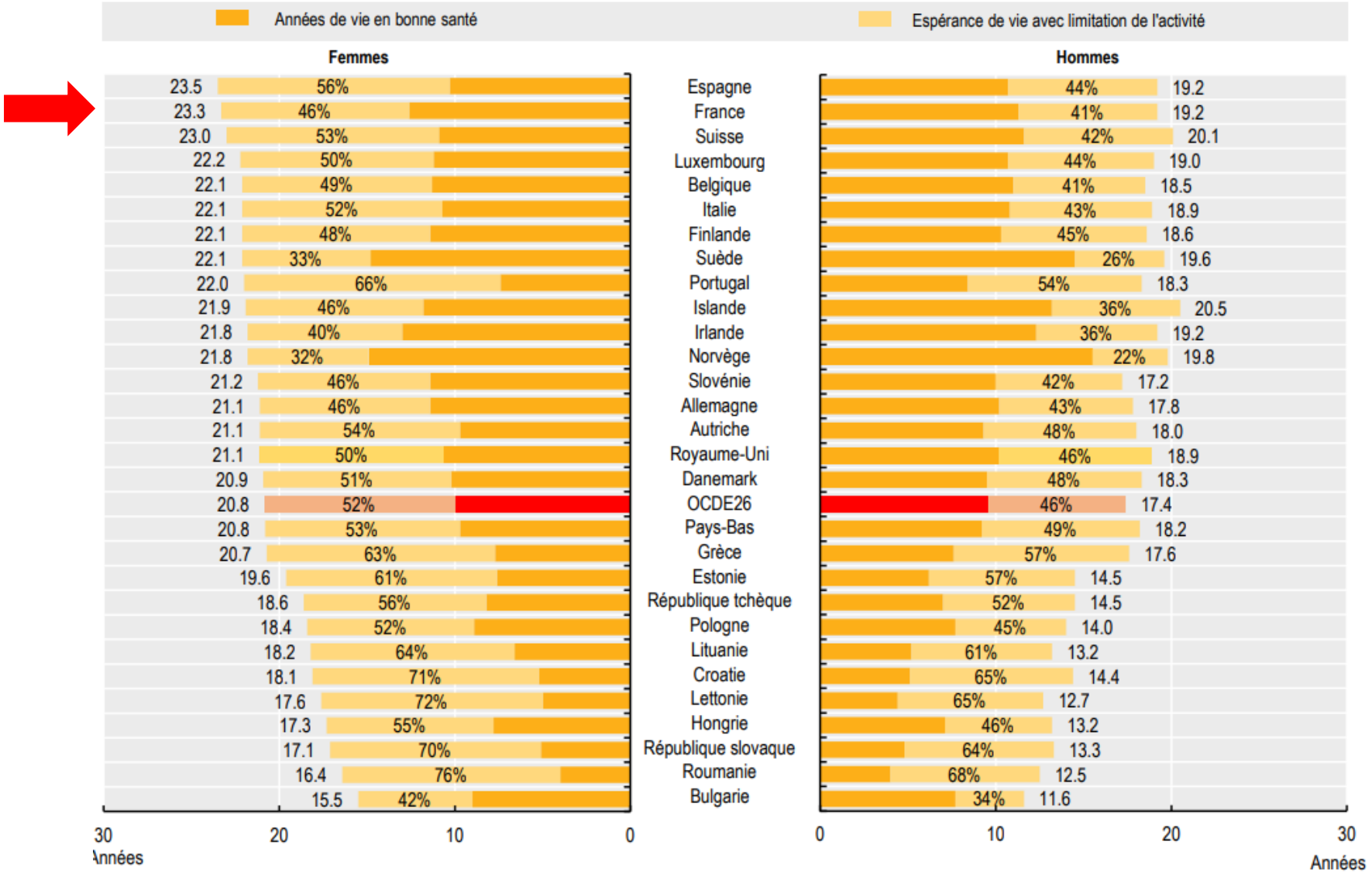
China, Hong Kong SAR ▾

2050

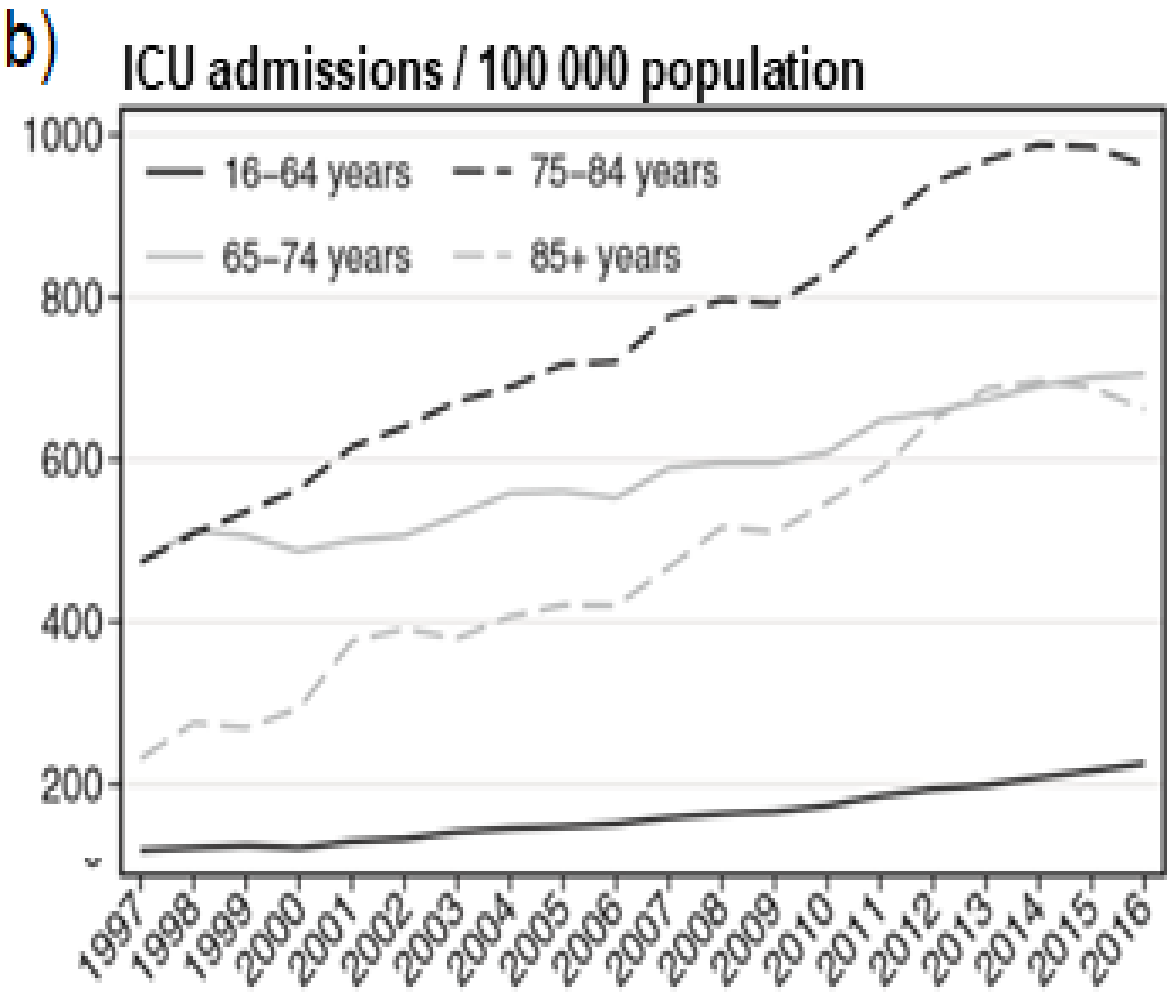
Population: 6,975,390



Espérance de vie à 65 ans (Données OCDE 2021) avec et sans limitation de l'activité



Patients âgés en réanimation



ICU admissions for England, Wales, Northern Ireland by age. *Jones et al. Crit Care Med. 2020*

Adaptation de l’offre à la demande

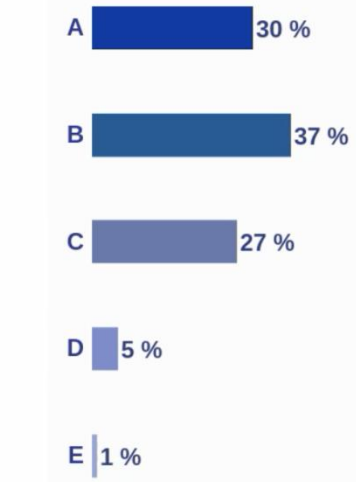
11:43

Interactive questions

Glasgow

The number of very old patients in our ICU will increase from around 15% to nearly 30% in 2040 putting a huge demand for increased ICU beds. Do you think your ICU will be able to meet this challenge?

A. Not at all
B. Only a moderate increase
C. Yes probably
D. Yes certainly
E. Have no idea



Comment améliorer l'offre?

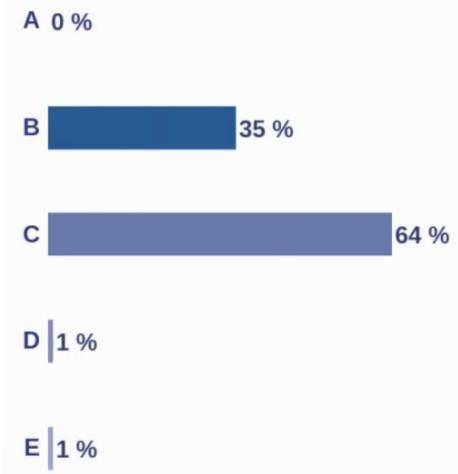
11:45

Interactive questions

Glasgow

If the number of ICU beds in your ICU/Country will not be substantially increased, how do you think we may "solve" this challenge?

A. We must give priority to these patients above other ICU admissions
B. We can use dedicated intermediate units for critical ill very old patients and limit use of invasive procedures
C. We must have a better pre-ICU triage to find those who will profit from an ICU admission
D. Other solutions
E. I have no idea



Priorisation d'accès à la réanimation

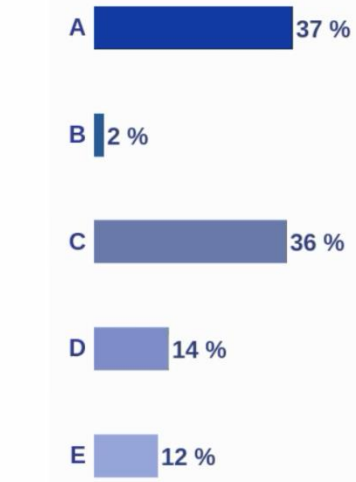
11:47

Interactive questions

Glasgow

If we could select patients better before ICU admittance, what would be the most important information to use in this process?

A. Patient wishes/expectation
B. Caregivers opinion
C. The degree of frailty
D. Co-morbidities
E. Expert opinion (geriatrician/intensivist or similar)



Utilisation des services de réanimation

Sur-utilisation : Déraisonnable (Futilité!)

- Pas de benefice attendu

Sous-utilisation: Racisme anti-vieux (Ageism)

- Perte de chance

Mauvaise-utilisation : Trajectoire chaotique

- Admission secondaire
- Réadmission

Questions

1- Souhait du patient et de ses proches ?

2- Outils d'évaluation d'un patient âgé en situation critique

3- Décision d'admission

4- LAT

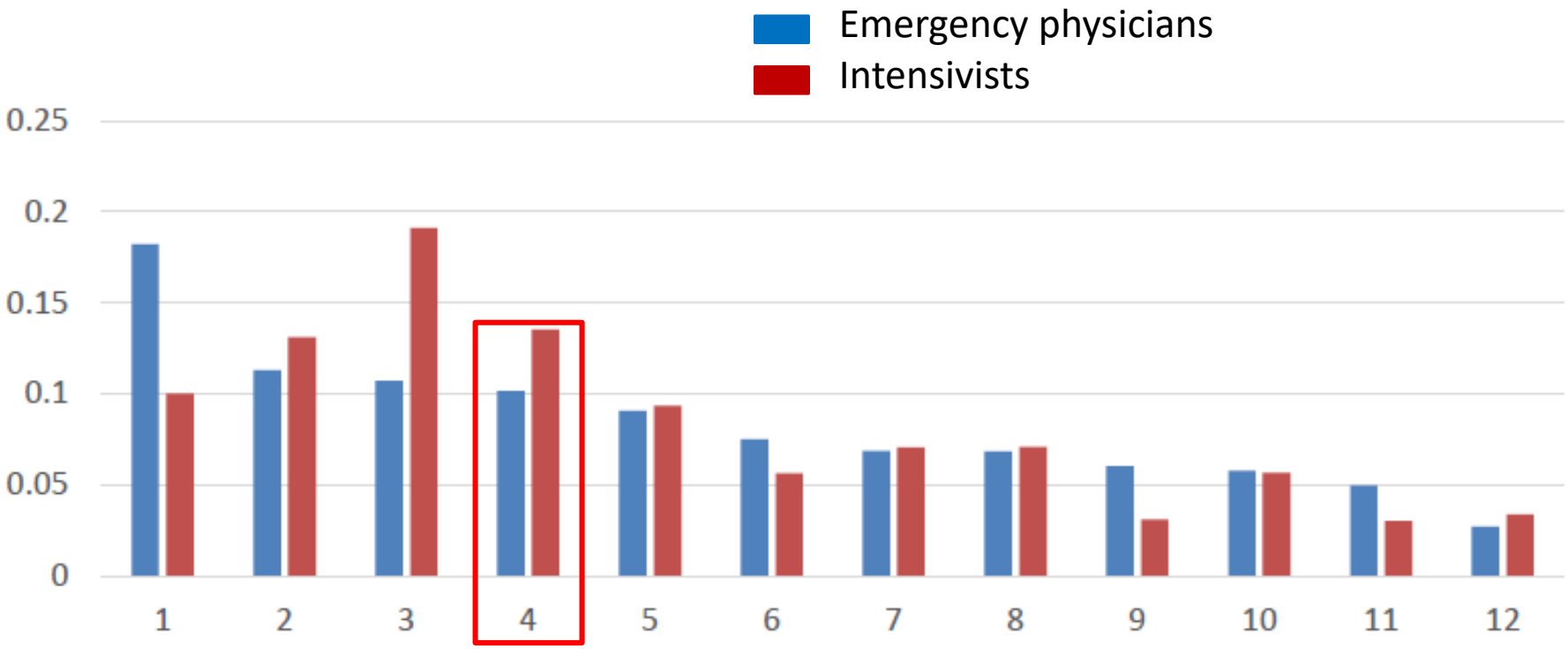
5- Résultats

6- Comment gérer l'incertitude: Réanimation d'attente?

7- Charge pour les aidants

1 - Souhait du patient et de ses proches ?

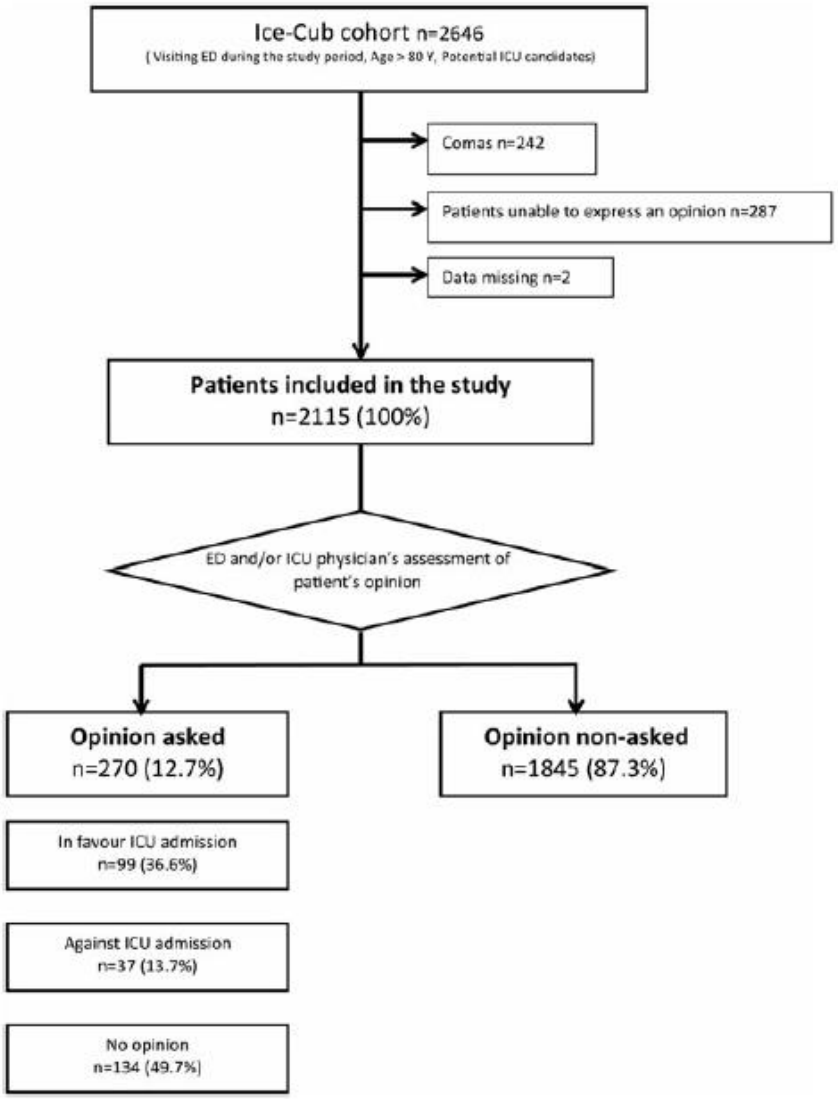
Opinions de médecins urgentistes et réanimateurs sur les critères d'admission en réanimation



An analytic hierarchy process (AHP) was used to determine the relative importance of the 12 criteria (1- severity; 2- functional status; 3-dementia; 4-patient's wishes; 5- chronic illness; 6- nutritional status; 7- decubitus ulcer; 8- position; 9- recent hospitalization; 10- family's wishes; 11- medication; 12- social context) in the opinions of ED and ICU physicians.

J Crit Care 2020;60:290-293

Are elderly patients' opinions sought before admission to an intensive care unit? Results of the ICE-CUB study



	Odds ratio	CI 95%	*P*
Age (per 1 year increase)	0.97	0.94–1.00	0.07
Living place			
Home versus nursing home/hospital	0.65	0.39–1.04	0.08
Chronic conditions			
Dementia	0.47	0.25–0.83	0.01
Chronic neurological disease	0.65	0.35–1.11	0.13
Autonomy			
Full autonomy versus severe FI	2.10	1.39–3.21	<0.01
Moderate FI versus severe FI	1.53	0.95–2.46	0.08
ED physician			
Senior versus junior	0.48	0.35–0.66	<0.01
Relative			
Asked versus not asked	5.46	3.80–7.88	<0.01

Age Ageing 2016; 45 :303-9

Intensive Care Med (2013) 39:1565–1573
DOI 10.1007/s00134-013-2976-y

ORIGINAL

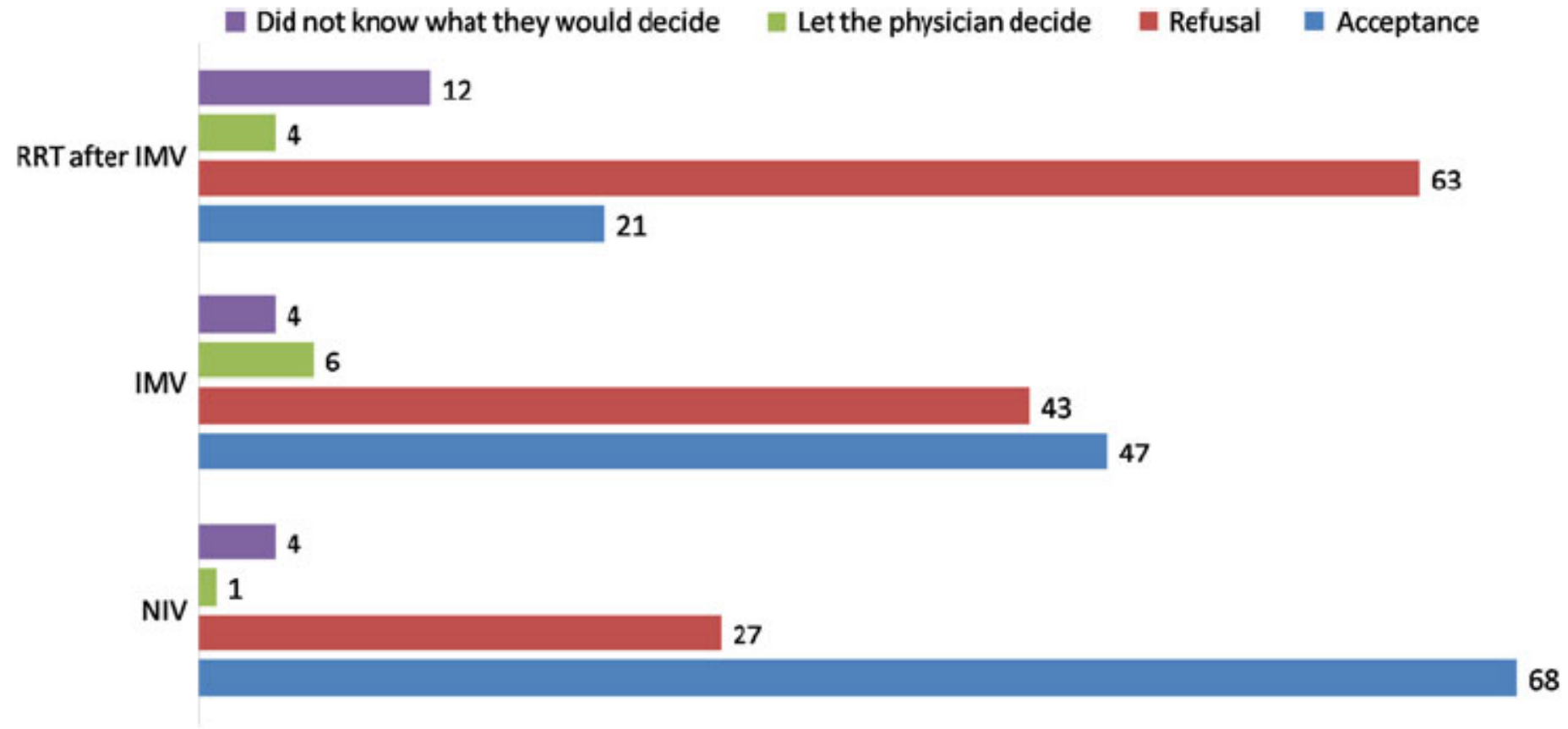
F. Philippart
A. Vesin
C. Bruel
A. Kpodji
B. Durand-Gasselin
P. Garçon
M. Levy-Soussan
J. L. Jagot
N. Calvo-Verjat
J. F. Timsit
B. Misset
M. Garrouste-Orgeas

The ETHICA study (part I): elderly's thoughts about intensive care unit admission for life-sustaining treatments

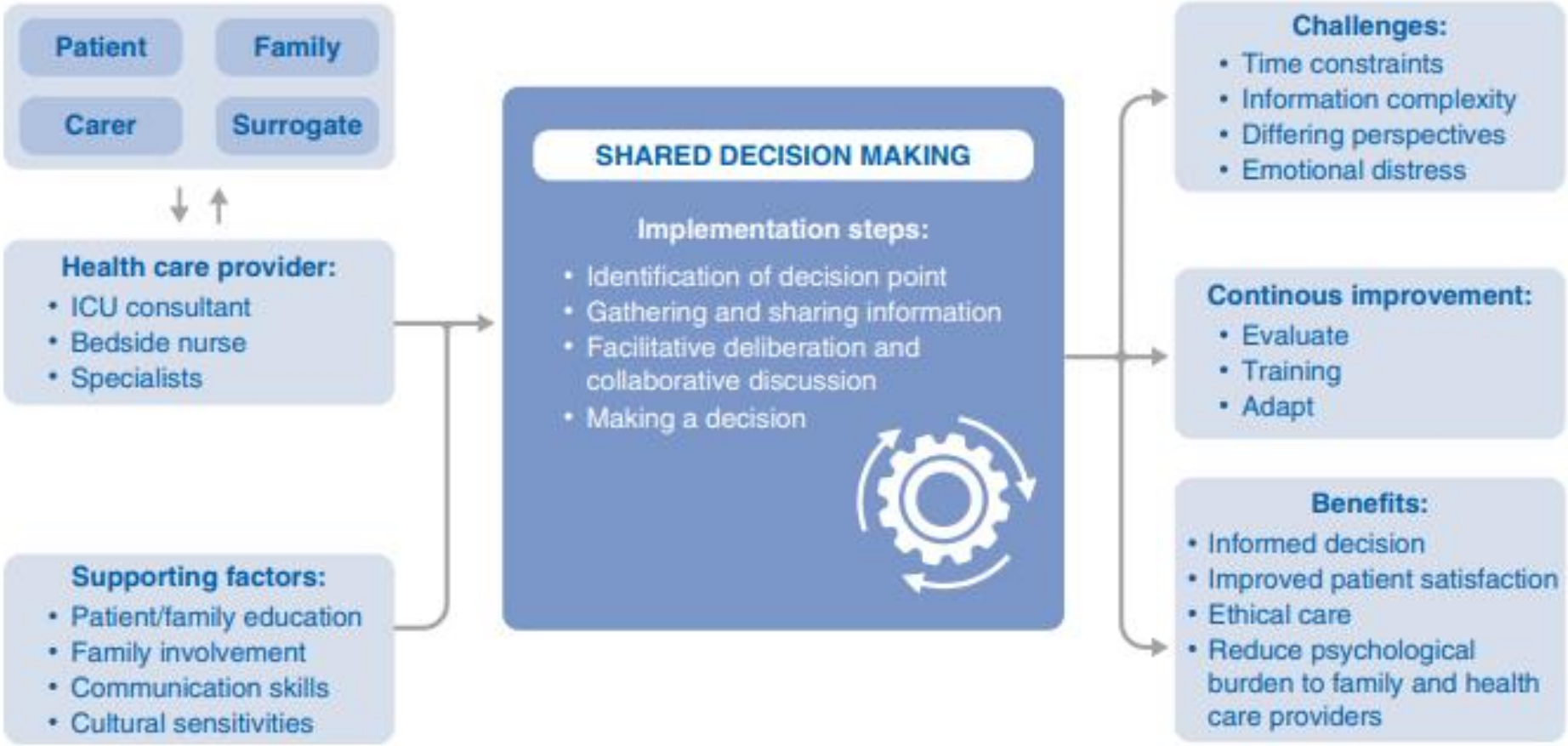
100 participants

Variables	Data
Age (years)	
Mean ± SD	84.8 ± 3.5
Females (*n*)	68
Site of residence (*n*)	
At home	65
Nursing facility	10
Assisted-living facility	25

Préférences



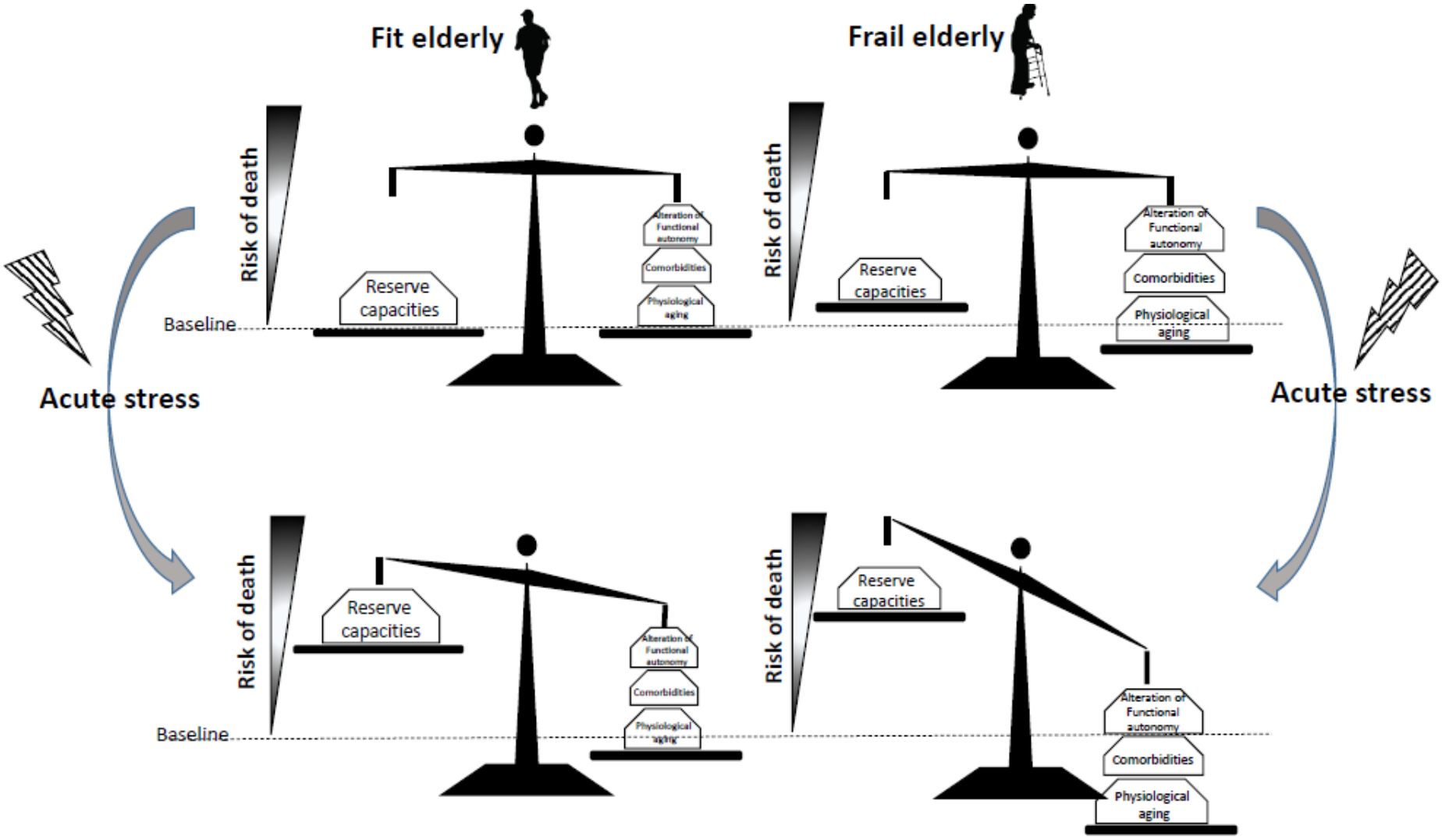
Décisions partagées



Intensive Care Med
https://doi.org/10.1007/s00134-023-07298-z

2 - Outils d’évaluation d’un patient âgé en situation critique

Fit vs Frail patient: impact of acute stress



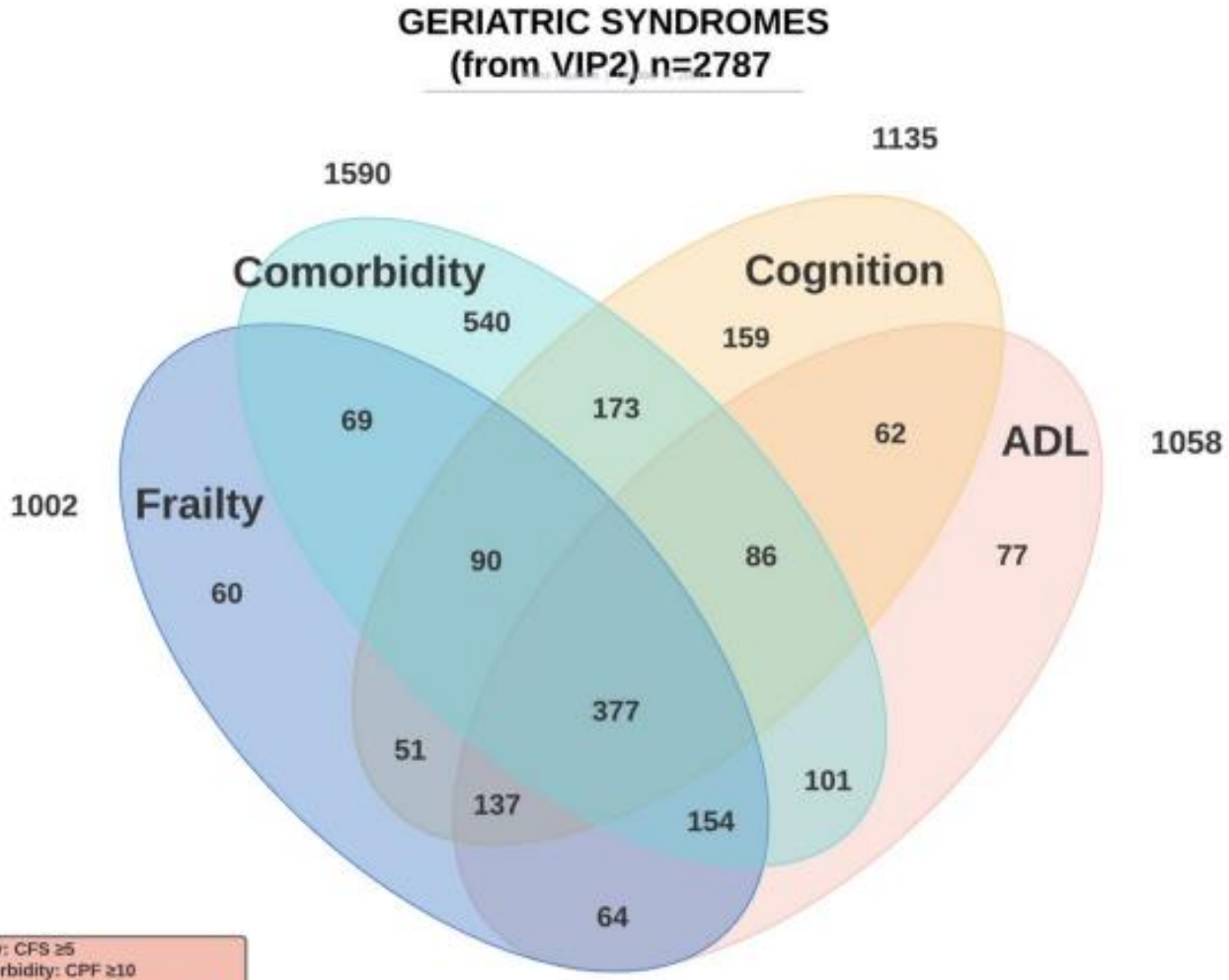
Guidet *et al. Ann. Intensive Care* (2018) 8:114
https://doi.org/10.1186/s13613-018-0458-7

Annals of Intensive Care

REVIEW Open Access

The impact of age-related syndromes on ICU process and outcomes in very old patients

Hélène Vallet[1], Bertrand Guidet[2*], Ariane Boumendil[3], Dylan W. De Lange[4], Susannah Leaver[5], Wojciech Szczeklik[6], Christian Jung[7], Sigal Sviri[8], Michael Beil[8] and Hans Flaatten[9]



Vallet *et al. Annals of Intensive Care* (2023) 13:68
https://doi.org/10.1186/s13613-023-01160-7

Les outils

Frailty scale	Components	Frailty classification	Advantages / drawbacks	Relation to outcomes
Frailty Phenotype (25)	Five items: weight loss, low physical activity, exhaustion, slowness, weakness	Robust: 0 items Pre-frailty: 1–2 items; Frailty: ≥3 items	. A comprehensive model, part of a CGA . Useful to evaluate patient trajectories, loss of function and disability in non-life-threatening situations. . Information may be hard to obtain in an emergency situation	Evaluating outcomes in over 75 year-olds after critical illness would require further study
Frailty Index (26)	30 to 92 accumulated health deficits Scores range from 0 (no deficits) to 1 (all deficits are present, though the maximum found is 0.7)	Continuous score Suggested cut-off score for frailty > 0·25	. Comprehensive model which gives an estimation of biological age vs chronological age . Can be applied to most health data sets . Time-consuming, so inconvenient for emergency use	Predicts mortality, disability, and cognitive decline better than chronological age Is associated with long-term mortality, place of residence and physical recovery after critical illness
Clinical Frailty Scale (20, 27, 28, 48, 52, 53, 54, 56)	Visual chart with a description of each picture 9 stages, ranging from 1 (very fit) to 9 (terminally ill)	CFS ≥5 defines frail	. Visual tool which easily conveys information . Good interrater reliability . May entail an evaluation based solely on the visual scale . At risk of use for inappropriately conducted triage	Outcomes after critical illness have been frequently studied CFS is a strong predictor of mortality, loss of functional ability, and not being discharged home
Scales based on administrative (computarized) records : The Hospital Frailty Risk Scale (34, 36)	109 summed items from ICD-10 frailty-relevant codes from administrative hospital data.	HFRS : Low risk: score <5 intermediate risk: score 5–15; high risk: score >15	. Can be calculated automatically upon patient admission and discharge . Frailty assessment subjected to lack of data and measurement bias . may not reflect disease severity	Inadequate predictors of long-term survival after critical illness

Ann Intensive Care. 2024 Jun 18;14(1):93

Echelle de fragilité clinique (CFS)

9 classes

Canadian Study on Health & Aging, Revised 2008

- K. Rockwood et al. A global clinical measure of fitness and frailty in elderly people. CMAJ 2005;

Fit

Pre frail

Frail

Clinical Frailty Scale*

1 **Very Fit** – People who are robust, active, energetic and motivated. These people commonly exercise regularly. They are among the fittest for their age.

2 **Well** – People who have **no active disease symptoms** but are less fit than category 1. Often, they exercise or are very **active occasionally**, e.g. seasonally.

3 **Managing Well** – People whose **medical problems are well controlled**, but are **not regularly active** beyond routine walking.

4 **Vulnerable** – While **not dependent** on others for daily help, often **symptoms limit activities.** A common complaint is being "slowed up", and/or being tired during the day.

5 **Mildly Frail** – These people often have **more evident slowing,** and need help in **high order IADLs** (finances, transportation, heavy housework, medications). Typically, mild frailty progressively impairs shopping and walking outside alone, meal preparation and housework.

6 **Moderately Frail** – People need help with **all outside activities** and with **keeping house**. Inside, they often have problems with stairs and need **help with bathing** and might need minimal assistance (cuing, standby) with dressing.

Frail

7 **Severely Frail** – **Completely dependent for personal care**, from whatever cause (physical or cognitive). Even so, they seem stable and not at high risk of dying (within ~ 6 months).

8 **Very Severely Frail** – Completely dependent, approaching the end of life. Typically, they could not recover even from a minor illness.

9. **Terminally Ill** - Approaching the end of life. This category applies to people with **a life expectancy <6 months**, who are **not otherwise evidently frail.**

Scoring frailty in people with dementia

The degree of frailty corresponds to the degree of dementia. Common **symptoms in mild dementia** include forgetting the details of a recent event, though still remembering the event itself, repeating the same question/story and social withdrawal.

In **moderate dementia**, recent memory is very impaired, even though they seemingly can remember their past life events well. They can do personal care with prompting.

In **severe dementia**, they cannot do personal care without help.

* 1. Canadian Study on Health & Aging, Revised 2008.
2. K. Rockwood et al. A global clinical measure of fitness and frailty in elderly people. CMAJ 2005;173:489-495.

DALHOUSIE UNIVERSITY *Inspiring Minds*

Intensive Care Med 2017; 43:4940-8
DOI 10.1007/s00134-017-4940-8

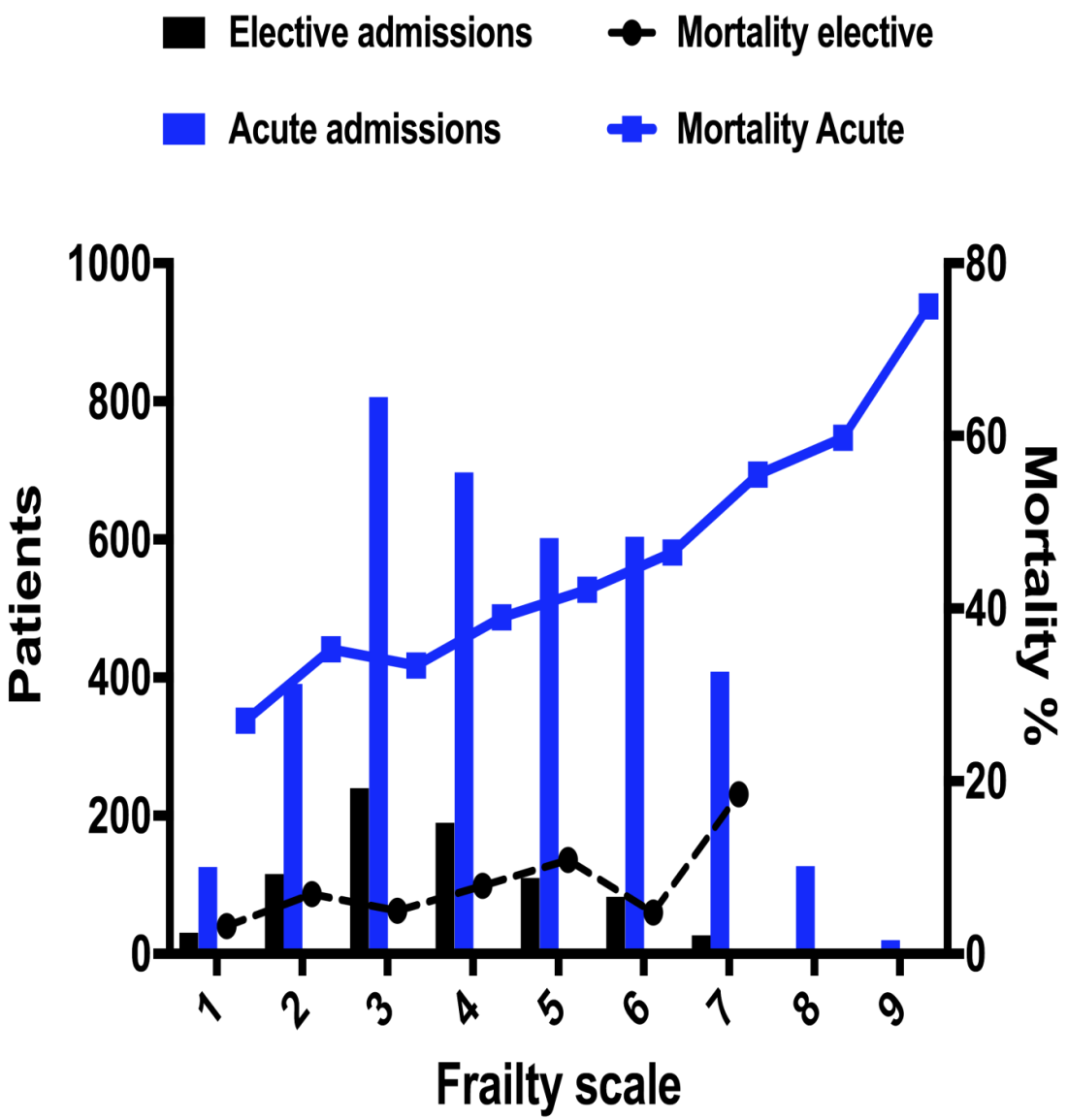
ORIGINAL

The impact of frailty on ICU and 30-day mortality and the level of care in very elderly patients (≥ 80 years)

Hans Flaatten[1,2*], Dylan W. De Lange[3], Alessandro Morandi[4,5], Finn H. Andersen[6,7], Antonio Artigas[8], Guido Bertolini[10], Ariane Boumendil[11], Maurizio Cecconi[12], Steffen Christensen[9], Loredana Faraldi[13], Jesper Fjølner[9], Christian Jung[14], Brian Marsh[15], Rui Moreno[16], Sandra Oeyen[17], Christina Agwald Öhman[18], Bernardo Bollen Pinto[19], Ivo W. Soliman[20], Wojciech Szczeklik[21], Andreas Valentin[22], Ximena Watson[12], Tilemachos Zaferidis[23], Bertrand Guidet[24,25,26] on behalf of the VIP1 study group

21 pays; 311 Réanimations
5132 patients ≥ 80 ans
Suivi à 1 mois

Fragilité et mortalité



Analyse mutlivariée

		HR (95%CI)	p
CFS	Pre vs fit	1.19 (1-03-1.38)	0.021
	Frail vs fit	1.54 (1.38-1.73)	<0.001
Age	Per 5 years	1.2 (1.12-1.28)	<0.001
Gender	male vs female	1.17 (1.06-1.29)	<0.001
SOFA	Per point	1.13 (1.12-1.14)	<0.001
Admission	Urgent vs planned	4.72 (3.65-6.10)	<0.001

Intensive Care Med
https://doi.org/10.1007/s00134-019-05853-1

ORIGINAL

The contribution of frailty, cognition, activity of daily life and comorbidities on outcome in acutely admitted patients over 80 years in European ICUs: the VIP2 study

Bertrand Guidet[1*], Dylan W. de Lange[2], Ariane Boumendil[3], Susannah Leaver[4], Ximena Watson[5], Carol Boulanger[6], Wojciech Szczeklik[7], Antonio Artigas[8], Alessandro Morandi[9], Finn Andersen[10], Tilemachos Zafeiridis[11], Christian Jung[12], Rui Moreno[13], Sten Walther[14], Sandra Oeyen[15], Joerg C. Schefold[16], Maurizio Cecconi[17,18], Brian Marsh[19], Michael Joannidis[20], Yuriy Nalapko[21], Muhammed Elhadi[22], Jesper Fjølner[23], Hans Flaatten[24,25] for the VIP2 study group

3920 patients; 242 Réanimations; 22 pays

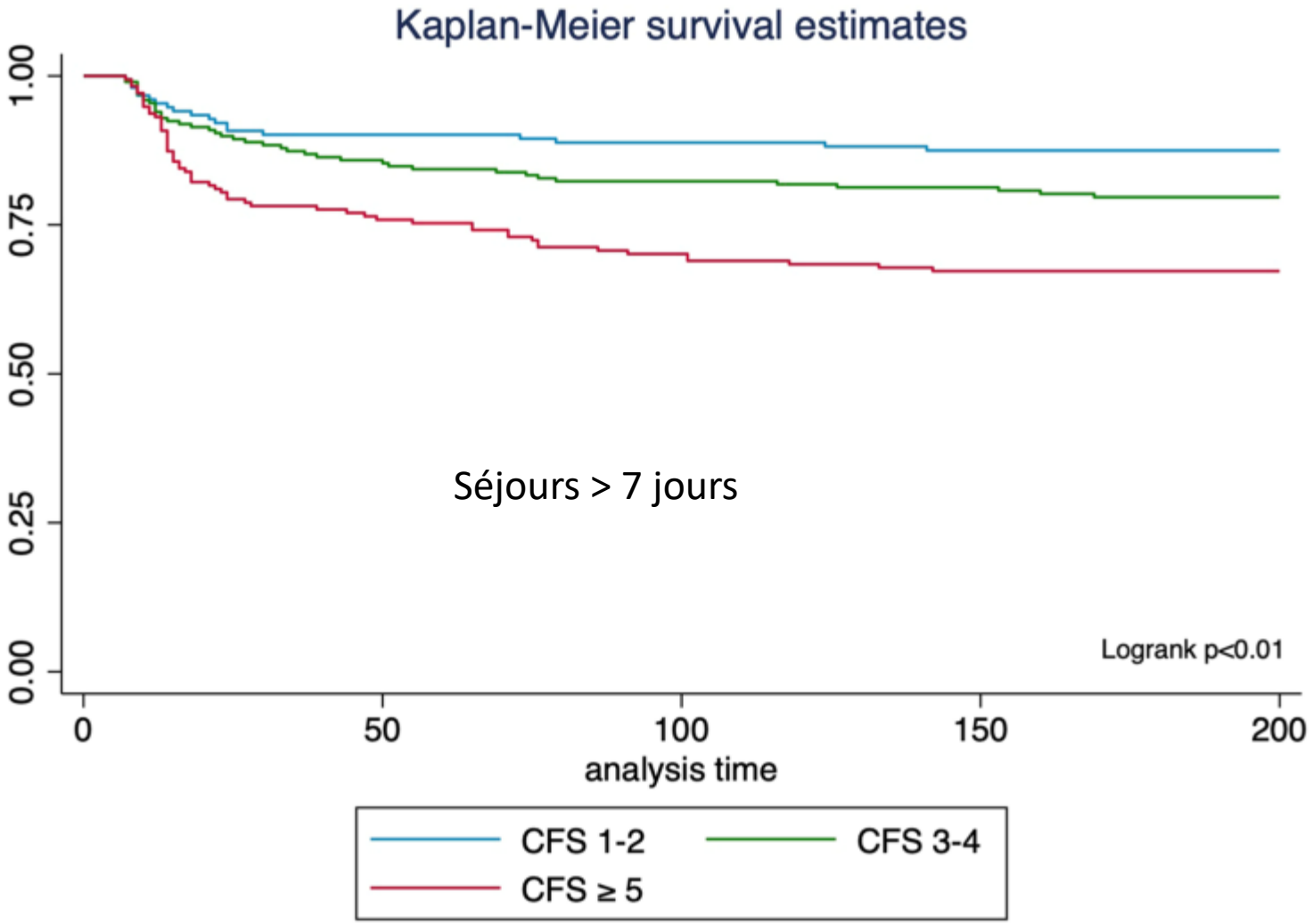
Analyse mutlivariée Mortalité à 1 mois

Variables	Categories	HR (95%CI)	*p*-value
Age	One-point increase	1 (0.99–1.02)	0.79
Habitat (ref = not home)	Own home	0.96 (0.85–1.08)	0.47
Gender (ref = male)	Female	0.94 (0.84–1.04)	0.24
Reason for admission (ref = circulatory failure)	Combined respiratory/circulatory failure	1.13 (0.94–1.36)	0.19
	Emergency surgery	0.68 (0.56–0.84)	0.0003
	Multitrauma w/wo head injury	1.21 (0.85–1.73)	0.28
	Multitrauma without head injury	0.91 (0.61–1.36)	0.64
	Other	0.88 (0.73–1.06)	0.18
	Respiratory failure	0.82 (0.69–0.97)	0.021
	Sepsis (according to Sepsis3)	0.67 (0.55–0.81)	0.0003
SOFA	One-point increase	1.16 (1.14–1.17)	< 0.0001
CPS	One-point increase	0.99 (0.98–1)	0.05
CFS	One-point increase	1.08 (1.05–1.12)	< 0.0001
Withholding or withdrawal	Yes vs no	4.25 (3.8–4.74)	< 0.0001

Long-stay ICU patients with frailty: mortality and recovery outcomes at 6 months

Hannah Wozniak[1,2*], Tal Sarah Beckmann[3], Andre Dos Santos Rocha[3], Jérôme Pugin[1], Claudia-Paula Heidegger[1] and Sara Cereghetti[1]

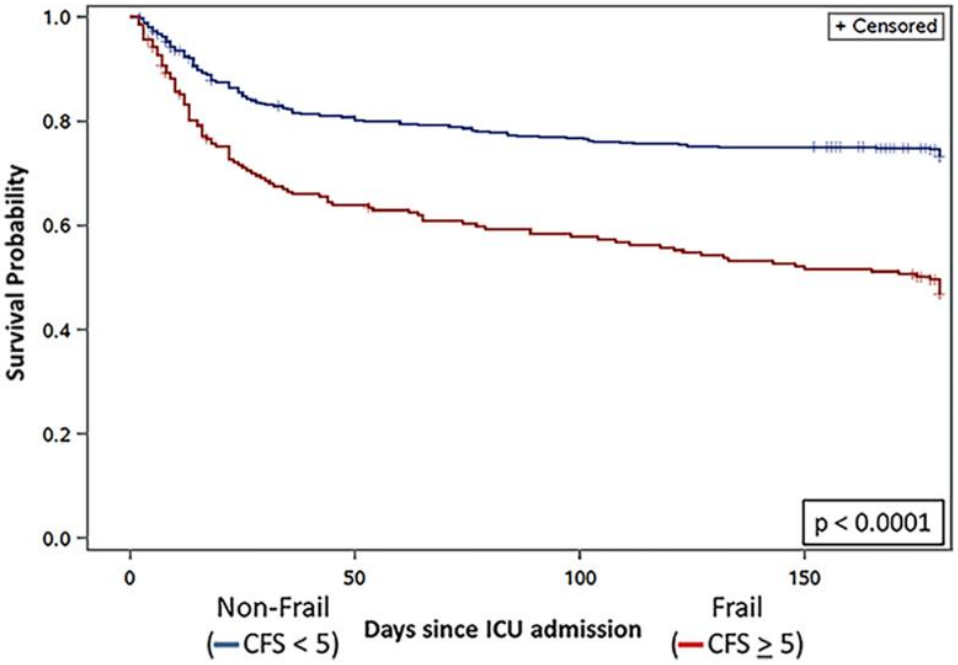
Annals of Intensive Care (2024) 14:31

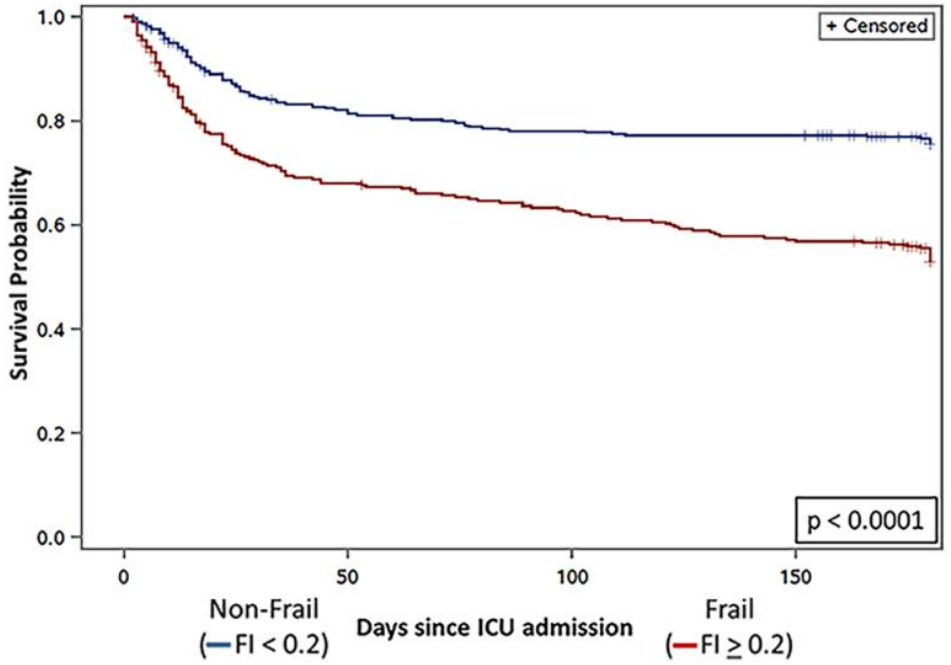


Séjours > 7 jours

Frailty, Outcomes, Recovery and Care Steps of Critically Ill Patients (FORECAST): a prospective, multi-centre, cohort study

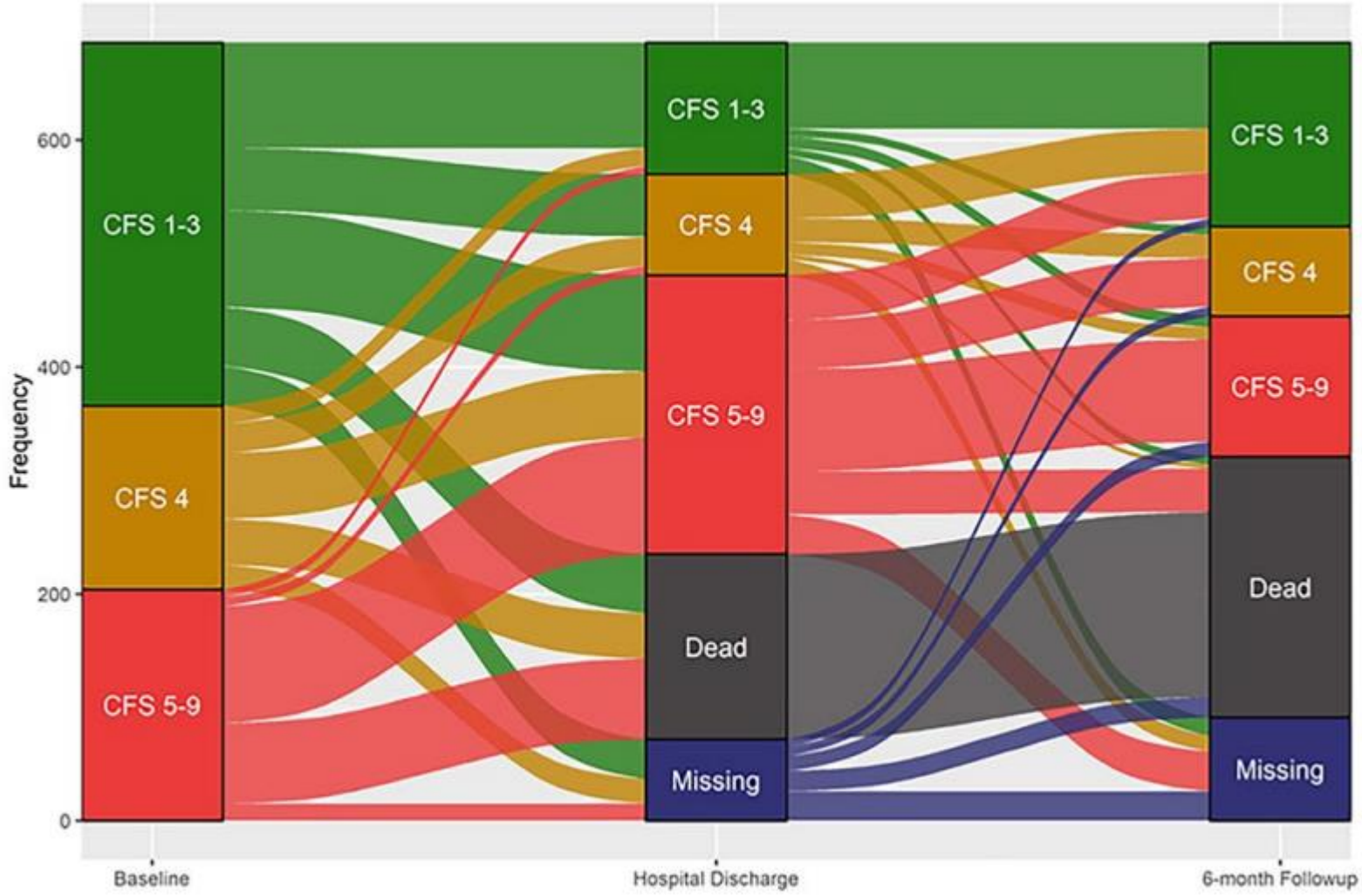
John Muscedere[1*], Sean M. Bagshaw[2], Michelle Kho[3], Sangeeta Mehta[4], Deborah J. Cook[5], J. Gordon Boyd[6],





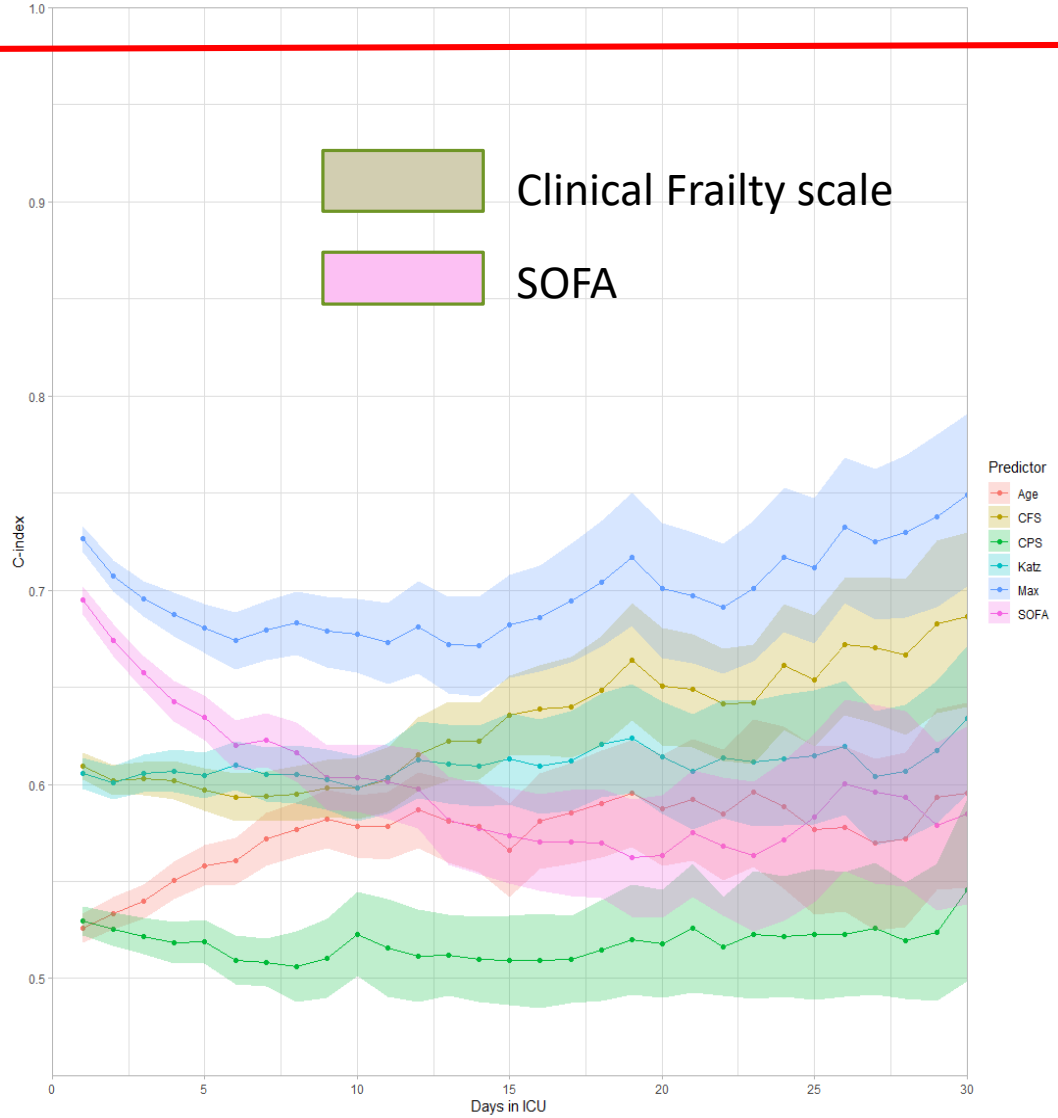
Intensive Care Med
https://doi.org/10.1007/s00134-024-07404-9

Evolution du CFS au cours du temps



Intensive Care Med
https://doi.org/10.1007/s00134-024-07404-9

Poids respectifs du SOFA et du CFS pour prédire la mortalité à 6 mois en fonction de la Durée de séjour



The association of premorbid conditions with 6- month mortality in acutely admitted ICU patients over 80 years.
Ann Intensive Care. 2024 Mar 30;14(1):46.

Reliability of the Clinical Frailty Scale in very elderly ICU patients, a prospective European study.

N = 1923 patients; median age 84; CSF 4; SOFA 6

Profession of raters	Rater 1		
Rater 2[1]	ICU nurse	ICU physician	Research staff
ICU nurse	57	309	126
ICU physician	162	785	120
Research staff	46	96	138

Flaatten H, Guidet B; et al. Ann Intensive Care 2021; Feb 3;11(1):22

Intraclass variance Rater 1 (CFS1) and Rater 2(CFS2)

CFS 2	CFS 1									
	1	2	3	4	5	6	7	8	9	Sum %
1	**76**	3	0	1	1	0	0	0	0	81 (3.5%)
2	0	**7**	1	0	0	0	0	0	0	196 (14.0%)
3	2	40	**403**	25	7	2	0	1	0	480 (25.0%)
4	1	4	54	**313**	22	7	1	0	0	402 (20.9%)
5	0	0	10	58	**163**	28	2	0	1	262 (13.6%)
6	0	0	5	5	43	**177**	17	2	0	249 (12.9%)
7	0	0	0	1	2	44	**126**	8	0	181 (9.4%)
8	0	0	0	1	0	3	13	**46**	2	65 (3.4%)
9	0	0	0	0	0	0	0	0	**7**	7 (0.4%)
Sum %	94 (4.9%)	202 (10.5%)	493 (25.6%)	407 (21.2%)	240 (12.5%)	261 (13.6%)	159 (8.3%)	57 (3.0%)	10 (0.5%)	1923

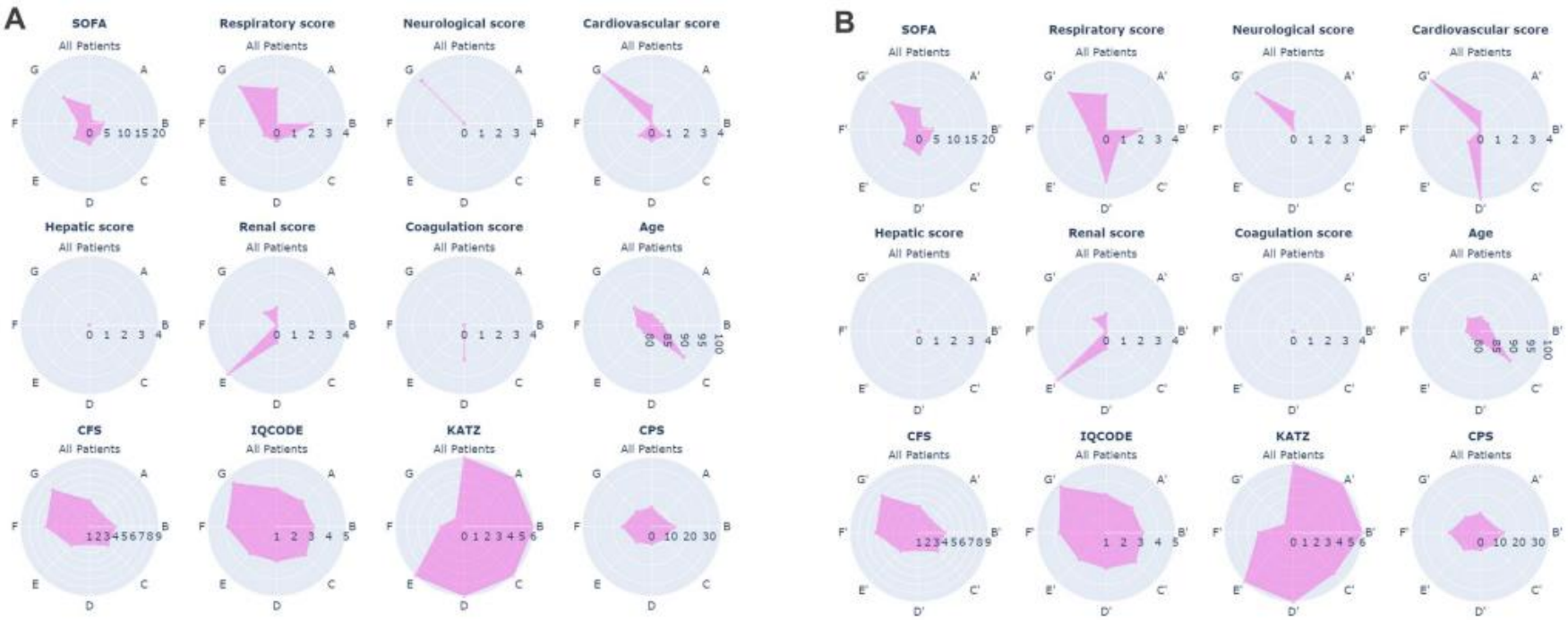
Weighted Kappa (linear) 0.86 (0.84-0.87)

Clustering analysis of geriatric and acute characteristics in a cohort of very old patients on admission to ICU

Oded Mousai[1], Lola Tafoureau[1], Tamar Yovell[1], Hans Flaatten[2], Bertrand Guidet[3], Christian Jung[4], Dylan de Lange[5], Susannah Leaver[6], Wojciech Szczeklik[7], Jesper Fjolner[8], Peter Vernon van Heerden[9], Leo Joskowicz[1], Michael Beil[10], Gal Hyams[1] and Sigal Sviri[10*]

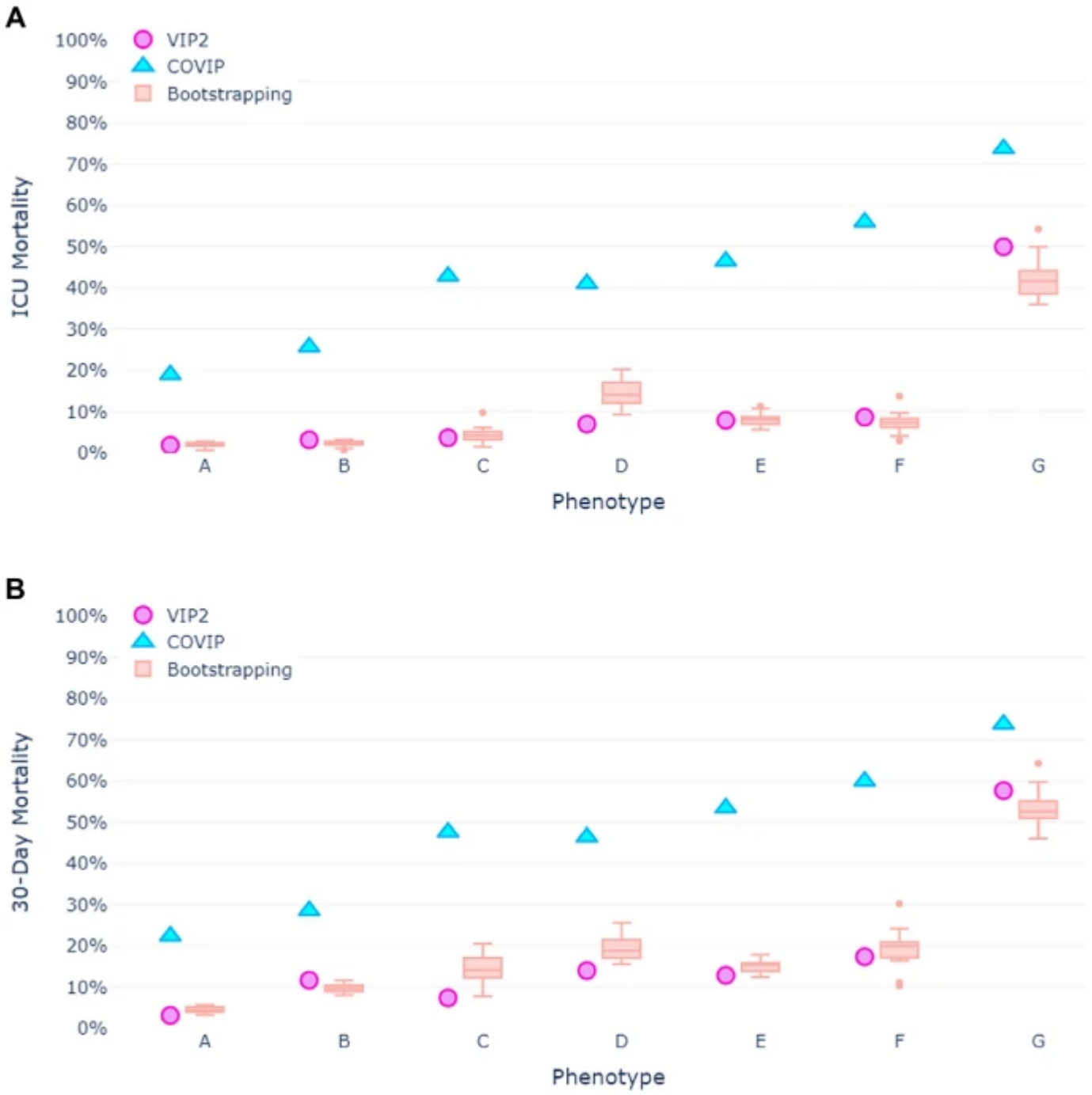
Non COVID

COVID



Intensive Care Med (2022) 48:1726–1735

Mortalité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30-Day Mortality
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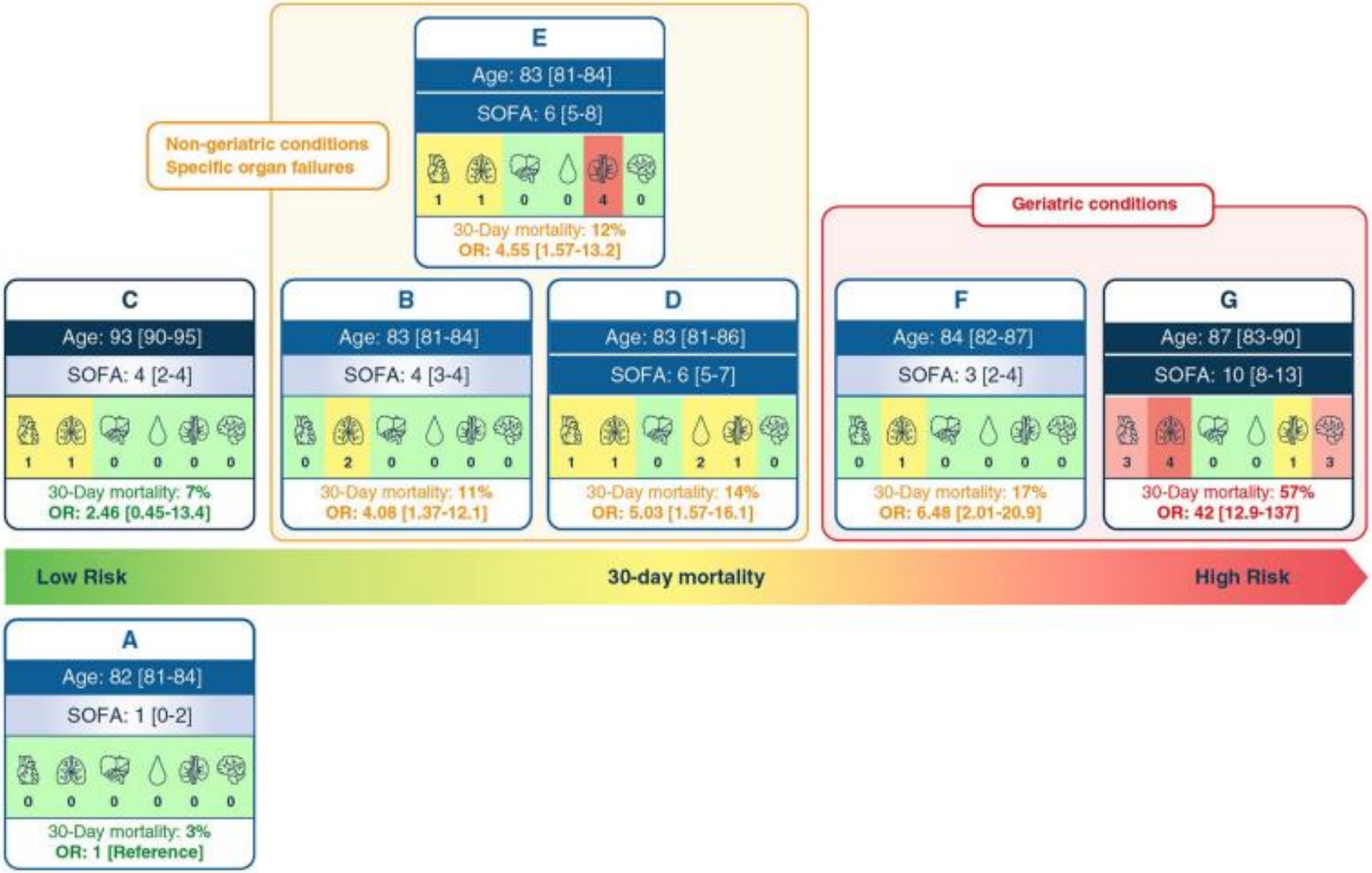
Phenotype

Tailoring treatments to older people in intensive care. A way forward

Márlon Juliano Romero Aliberti[1,2*], Sébastien Bailly[3] and Matthew Anstey[4,5,6]



Intensive Care Med (2022) 48:1775–1777

3 – Admission en réanimation

RESEARCH Open Access

Designing and conducting a cluster-randomized trial of ICU admission for the elderly patients: the ICE-CUB 2 study

Ariane Boumendil[1], Maguy Woimant[2], Jean-Pierre Quenot[3], François-Xavier Rooryck[4], Foued Makhlouf[5], Youri Yordanov[6], Samuel Delerme[7], Khalil Takun[8], Patrick Ray[9], Marie-Clément Kouka[10], Claire Poly[11], Maité Garrouste-Orgeas[12], Caroline Thomas[13], Tabasome Simon[14], Sylvie Azerad[15], Guillaume Leblanc[16], Dominique Pateron[6,17], Bertrand Guidet[1,17,18*] and on behalf of the ICE-CUB 2 study network

Ann Intensive Care 2016, 6: 74

Critères de jugement

- **Primary end-point:**
  - **6 month mortality**

- **Secondary end-points :**
  - Hospital mortality
  - Percentage of ICU admission
  - Outcome at 6 months
    - Place of living
    - Functional status assessed by ADL score
    - Quality of life assessed by SF12

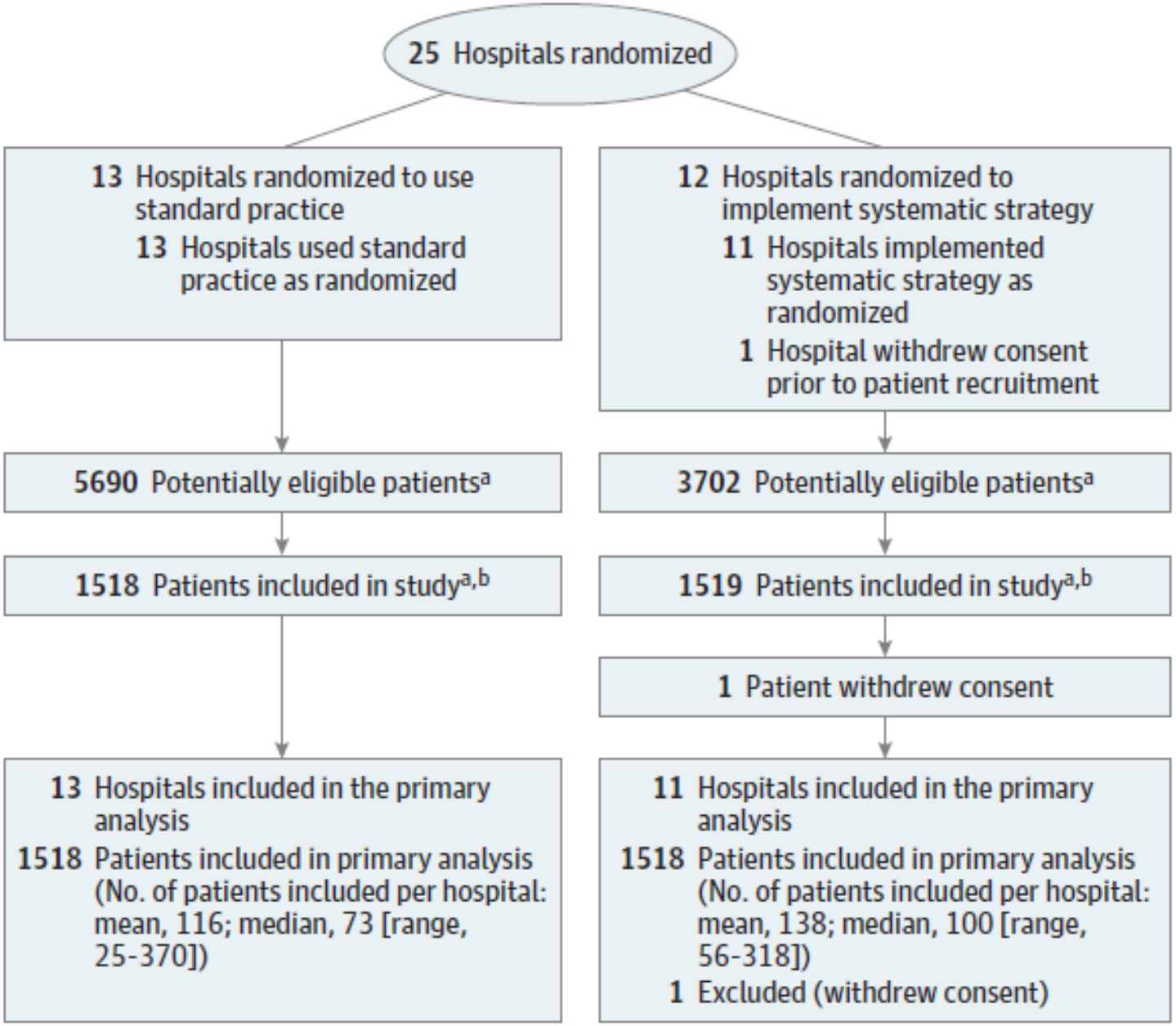

25 Hospitals randomized
13 Hospitals randomized to use standard practice
13 Hospitals used standard practice as randomized
12 Hospitals randomized to implement systematic strategy
11 Hospitals implemented systematic strategy as randomized
1 Hospital withdrew consent prior to patient recruitment
5690 Potentially eligible patients[a]
3702 Potentially eligible patients[a]
1518 Patients included in study[a,b]
1519 Patients included in study[a,b]
1 Patient withdrew consent
13 Hospitals included in the primary analysis
1518 Patients included in primary analysis (No. of patients included per hospital: mean, 116; median, 73 [range, 25-370])
11 Hospitals included in the primary analysis
1518 Patients included in primary analysis (No. of patients included per hospital: mean, 138; median, 100 [range, 56-318])
1 Excluded (withdrew consent)

Table 1. Hospital and Participant Baseline Characteristics[a]

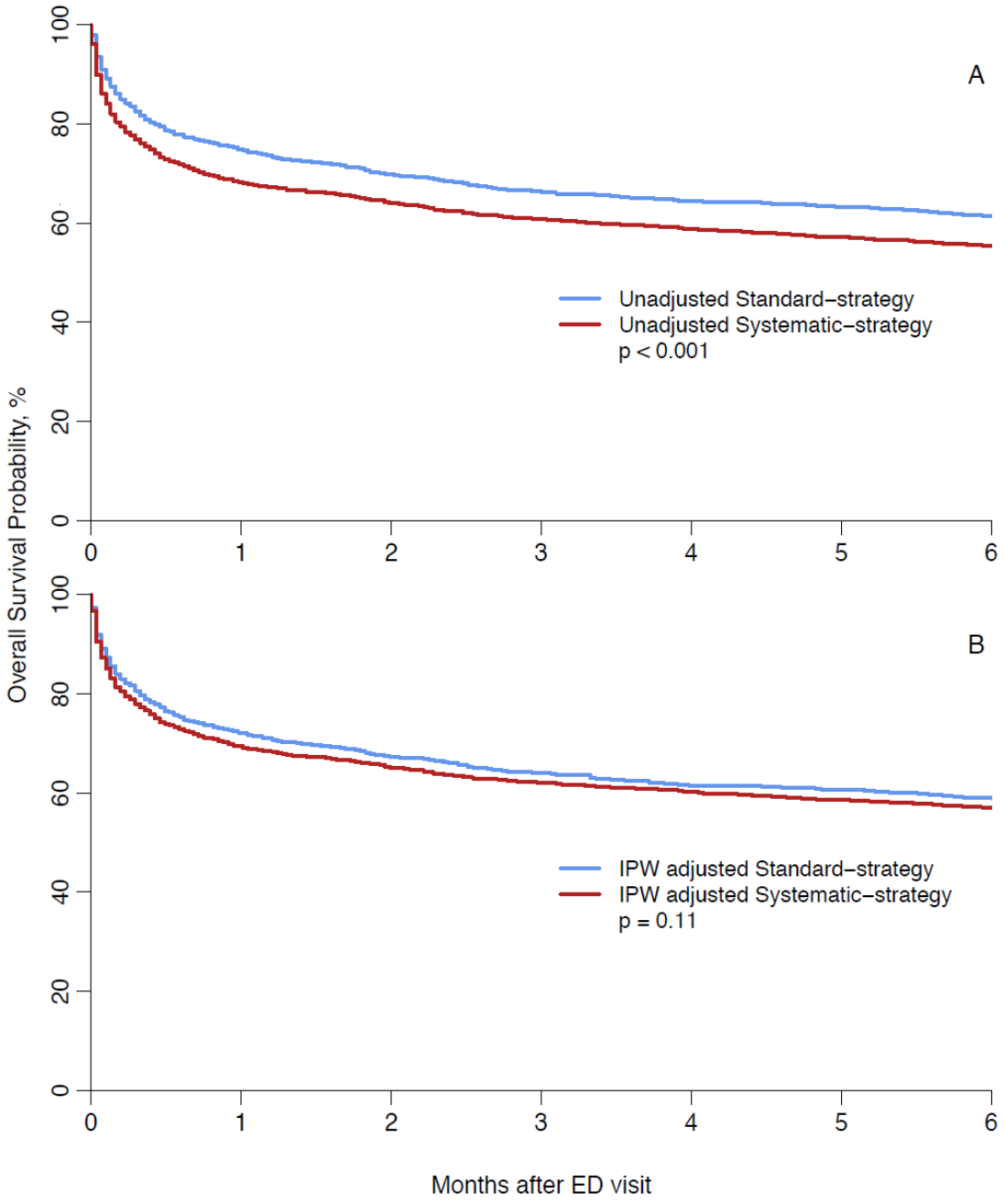
Characteristics	Systematic Strategy	Standard Practice	Difference in Medians (95% CI)	*P* Value
Hospital characteristics	n=11	n=13		
No. of emergency department visits among patients aged >75 y during the study period, mean (SD)	12 746 (4402)	16 580 (9468)		
Location (Paris region), No.	7	9		
Geriatric ward in the hospital, No.	10	11		
Academic hospital, No.	7	10		
Type of intensive care unit (medical), No.	5	7		
Patient characteristics	n=1518	n=1518		
Age, median (IQR), y	85 (81-89)	85 (81-89)	0 (−1 to 1)	.60
Male, No. (%)	713 (47)	648 (43)		
Coexisting conditions, No./total No. (%)				
Ischemic heart disease or hypertension	397/978 (41)	456/1075 (42)		.40
Respiratory disorder	296/978 (30)	336/1074 (31)		.64
Congestive heart failure	151/978 (15)	119/1074 (11)		.004
Neurologic disorder	112/979 (11)	110/1075 (10)		.38
Cognitive impairment	100/977 (10)	153/1075 (14)		.006
Cirrhosis	16/979 (2)	16/1075 (1)		.79
SAPS 3 score at enrollment, median (IQR)[b]	64 (57-71)	59 (54-65)	5 (4 to 6)	<.001
Index of Independence in ADLs score, median (IQR)[c]	6.0 (5.0-6.0)	6.0 (5.5-6.0)	0 (0 to 0)	.19

	Systematic strategy (N=1,518)	Standard strategy (N=1,518)	P-Value
Full ICU - no./total no. (%)	241/1,276 (19)	92/492 (19)	0.98
Physicians sought patient's opinion about ICU admission - no./total no. (%)			
Yes	470/1,518 (31)	220/1,518 (14)	<0.001
No	326/1,518 (21)	155/1,518 (10)	
Patient unable to formulate opinion	438/1,518 (29)	190/1,518 (13)	
Not documented	284/1,518 (19)	953/1,518 (63)	
Patient's opinion about ICU admission - no./total no. (%)			
Favourable	414/470 (88)	145/220 (66)	<0.001
Unfavourable	21/470 (5)	32/220 (15)	
No opinion	35/470 (7)	43/220 (20)	
Decision for admission* - no./total no.			
ICU in the same hospital	856/1,513 (57)	458/1,497 (31)	<0.001
ICU in another hospital	75/1,513 (5)	58/1,497 (4)	
Intermediate care or specialized unit	242/1,513 (16)	319/1,497 (21)	
Other ward	104/1,513 (7)	369/1,497 (25)	
Post emergency department unit	189/1,513 (12)	261/1,497 (17)	
Geriatric unit	17/1,513 (1)	24/1,497 (2)	
Emergency department	30/1,513 (2)	8/1,497 (1)	

Outcomes	Systematic strategy (N=1,518)	Standard strategy (N=1,518)	RR (95%CI)	P-value*
Death at six months - no. (%)	685 (45)	588 (39)	1.16 (1.07-1.26)	<0.001
Adjusted analysis**			1.05 (0.96-1.14)	0.28
ICU admission rate - no. (%)	932 (61)	516 (34)	1.80 (1.66-1.95)	<0.001
Adjusted analysis**			1.68 (1.54-1.82)	<0.001
In-hospital mortality - no. (%)	451 (30)	326 (21)	1.39 (1.23-1.57)	<0.001
Adjusted analysis**			1.18 (1.03-1.33)	0.03
Decrease in at least one domain of the ADL* - no./total no. (%)**	463/680 (68)	394/657 (60)	1.06 (0.99-1.13)	0.08
Adjusted analysis**			1.02 (0.99-1.05)	0.10
Mean SF-12 Physical** at 6 months (sd)**	36.7 (10.4)	36.2 (8.9)	Average Increase***** 0.95 (-0.16-2.07)	0.09
Adjusted analysis*			Average Increase***** 0.56 (-0.39-1.53)	0.24
Mean SF-12 Mental** at 6 months (sd)**	44.6 (7.3)	43.7 (7.2)	Average Increase***** 1.05 (0.21-1.90)	0.02

Unadjusted

Adjusted



No. at risk							
Standard	1518	1126	1042	992	961	941	912
Systematic	1518	1029	966	919	887	860	826

JAMA | Original Investigation | CARING FOR THE CRITICALLY ILL PATIENT

Effect of Systematic Intensive Care Unit Triage on Long-term Mortality Among Critically Ill Elderly Patients in France
A Randomized Clinical Trial

Bertrand Guidet, MD; Guillaume Leblanc, MD; Tabassome Simon, MD, PhD; Maguy Woimant, MD; Jean-Pierre Quenot, MD; Olivier Ganansia, MD; Maxime Maignan, MD; Youri Yordanov, MD; Samuel Delerme, MD; Benoit Doumenc, MD; Muriel Fartoukh, MD; Pierre Charestan, MD; Pauline Trognon, MD; Bertrand Galichon, MD; Nicolas Javaud, MD; Anabela Patzak, MD; Maïté Garrouste-Orgeas, MD; Caroline Thomas, MD; Sylvie Azerad, PharmD; Dominique Pateron, MD; Ariane Boumendil, PhD; for the ICE-CUB 2 Study Network

JAMA 2017, 318: 1450-9

Place des Unités de soins intermédiaires

Impact on 6-month outcomes of hospital trajectory in critically ill older patients: analysis of the ICE-CUB2 clinical trial

Sara Thietart[1*], Ariane Boumendil[2], Dominique Pateron[3], Bertrand Guidet[1,4] and Hélène Vallet[5,6] on behalf of the ICE-CUB2 Study Network

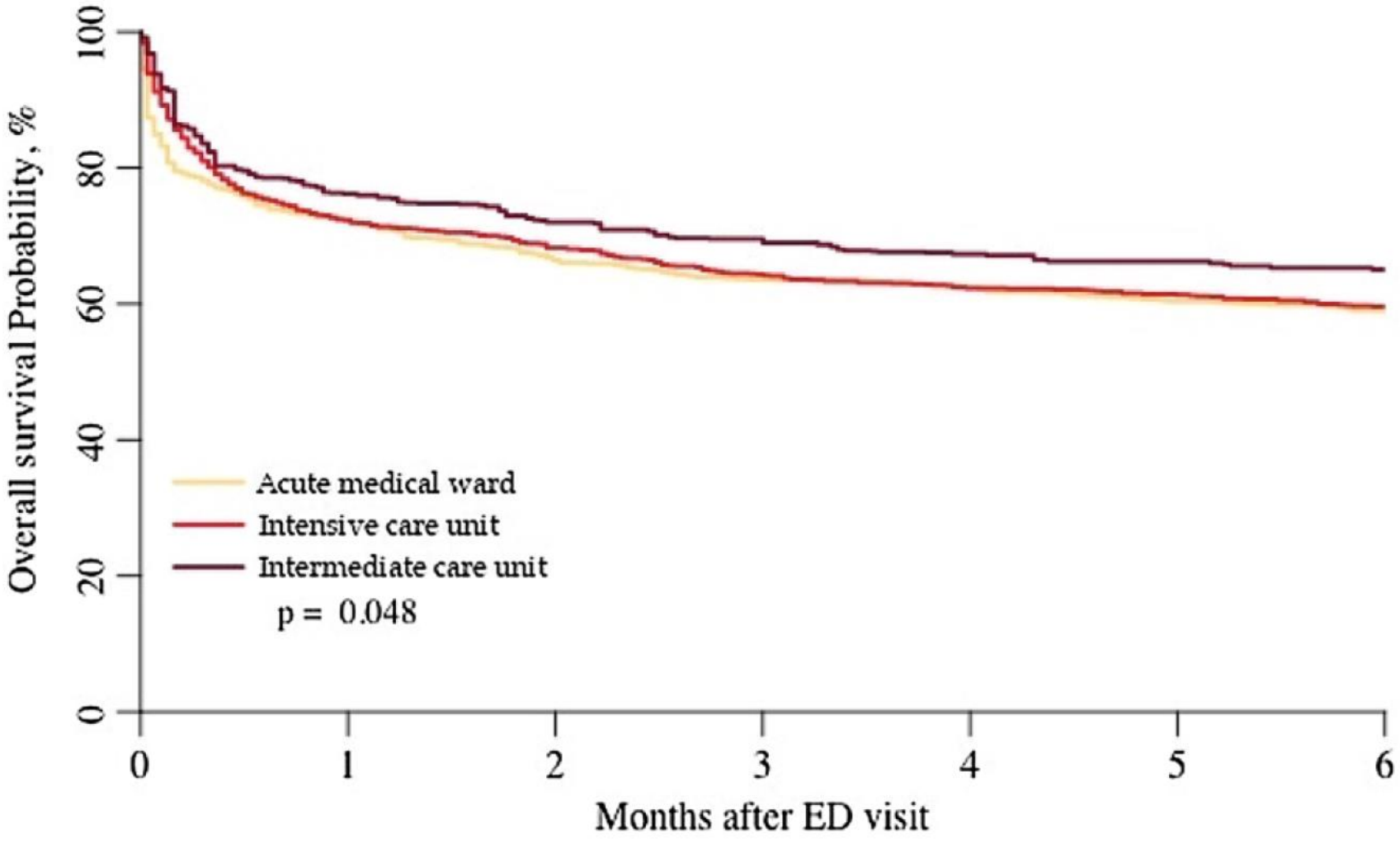
	Intensive care unit	Intermediate care unit	Acute medical ward
N	1448	504	1084
Age (years)	84 [80–88]	85 [81–89]	87 [83–92]
Female sex	764 (53)	259 (51)	652 (60)

Thietart *et al. Annals of Intensive Care* (2022) 12:65
https://doi.org/10.1186/s13613-022-01042-4

Mortalité à 6 mois
Analyse multivariée

Variables	Hazard ratio (95% CI)[a]	*p* value
Hospital destination (vs IMCU)		
AMW	1.31 (1.04–1.63)	0.019
ICU	1.17 (0.95–1.46)	0.147
Age (per one-point increase)	1.04 (1.03–1.05)	< 0.001
Male sex (vs female)	1.19 (1.04–1.36)	0.012
Presence of comorbidities	1.04 (0.90–1.20)	0.562
SAPS-3 (per one-point increase)	1.05 (1.04–1.05)	< 0.001
ADL (per one-point decrease)	1.15 (1.06–1.25)	< 0.001

Courbes de survie ajustées



4 – Limitation et arrêt des thérapeutiques

Withholding or withdrawing of life-sustaining therapy in older adults (≥ 80 years) admitted to the intensive care unit

Bertrand Guidet[1,2*], Hans Flaatten[3,4], Ariane Boumendil[1*], Alessandro Morandi[5,6], Finn H. Andersen[7,8], Antonio Artigas[9], Guido Bertolini[10], Maurizio Cecconi[11], Steffen Christensen[12], Loredana Faraldi[13], Jesper Fjølner[12], Christian Jung[14], Brian Marsh[15], Rui Moreno[16], Sandra Oeyen[17], Christina Agwald Öhman[18], Bernardo Bollen Pinto[19], Ivo W. Soliman[20], Wojciech Szczeklik[21], Andreas Valentin[22], Ximena Watson[11], Tilemachos Zafeiridis[23] and Dylan W. De Lange[20] on behalf of The VIP1 study group.

VIP1 study

- 21 Pays
- 309 Réanimations
- 5021 patients de plus de 80 ans

B Guidet et al. Intensive Care Medicine; 2018; 44(7):1027-1038

Caracteristiques des patients

LLST : 27.2% of patients:
15% withholding
12.2% withdrawing

		All	No treatment limitation	Withholding alone	Withdrawing +/- withholding	p-value
	N	5021	3656	753	612	
	%	100	72,8	15,0	12,2	
Age	median	84	83	85	84	<0.0001
Frailty	median	4	4	5	5	<0.0001
SOFA score	median	7	6	7	10	<0.0001
ICU length of stay (days)	median	2.33	2.29	2.12	2.92	0.0406
Patient's sex	Female	2404 (47.9%)	1737 (47.5%)	395 (52.5%)	272 (44.4%)	0.009
	Male	2617 (52.1%)	1919 (52.5%)	358 (47.5%)	340 (55.6%)	
Type of ICU admission	Elective	906 (18%)	853 (23.3%)	38 (5%)	15 (2.5%)	<0.0001
	Acute	4115 (82%)	2803 (76.7%)	715 (95%)	597 (97.5%)	

B Guidet et al. Intensive Care Medicine; 2018; 44(7):1027-1038

Traitements, fragilité, mortalité

		All	No treatment limitation	Withholding alone	Withdrawing +/- withholding	p-value
		5021	3656	753	612	
Non invasive mechanical ventilation	Yes	1148 (22.9%)	745 (20.4%)	243 (32.4%)	158 (26%)	<0.0001
Invasive mechanical ventilation	Yes	2519 (50.2%)	1763 (48.2%)	292 (38.9%)	462 (75.7%)	<0.0001
Vasoactive drugs	Yes	2612 (52%)	1761 (48.2%)	392 (52.2%)	457 (74.8%)	<0.0001
Renal replacement therapy	Yes	461 (9.2%)	300 (8.2%)	70 (9.4%)	89 (14.7%)	<0.0001
Frailty level	Fit	1893 (37.7%)	1545 (42.3%)	161 (21.4%)	187 (30.6%)	<0.0001
	Vulnerable	972 (19.4%)	726 (19.9%)	140 (18.6%)	106 (17.3%)	
	Frail	2156 (42.9%)	1385 (37.9%)	452 (60%)	319 (52.1%)	
Death in ICU	Yes	1109 (22.1%)	387 (10.6%)	218 (29.1%)	502 (82.2%)	<0.0001
Death at day 30	Yes	1647 (32.8%)	677 (18.5%)	399 (53.1%)	569 (93.1%)	<0.0001

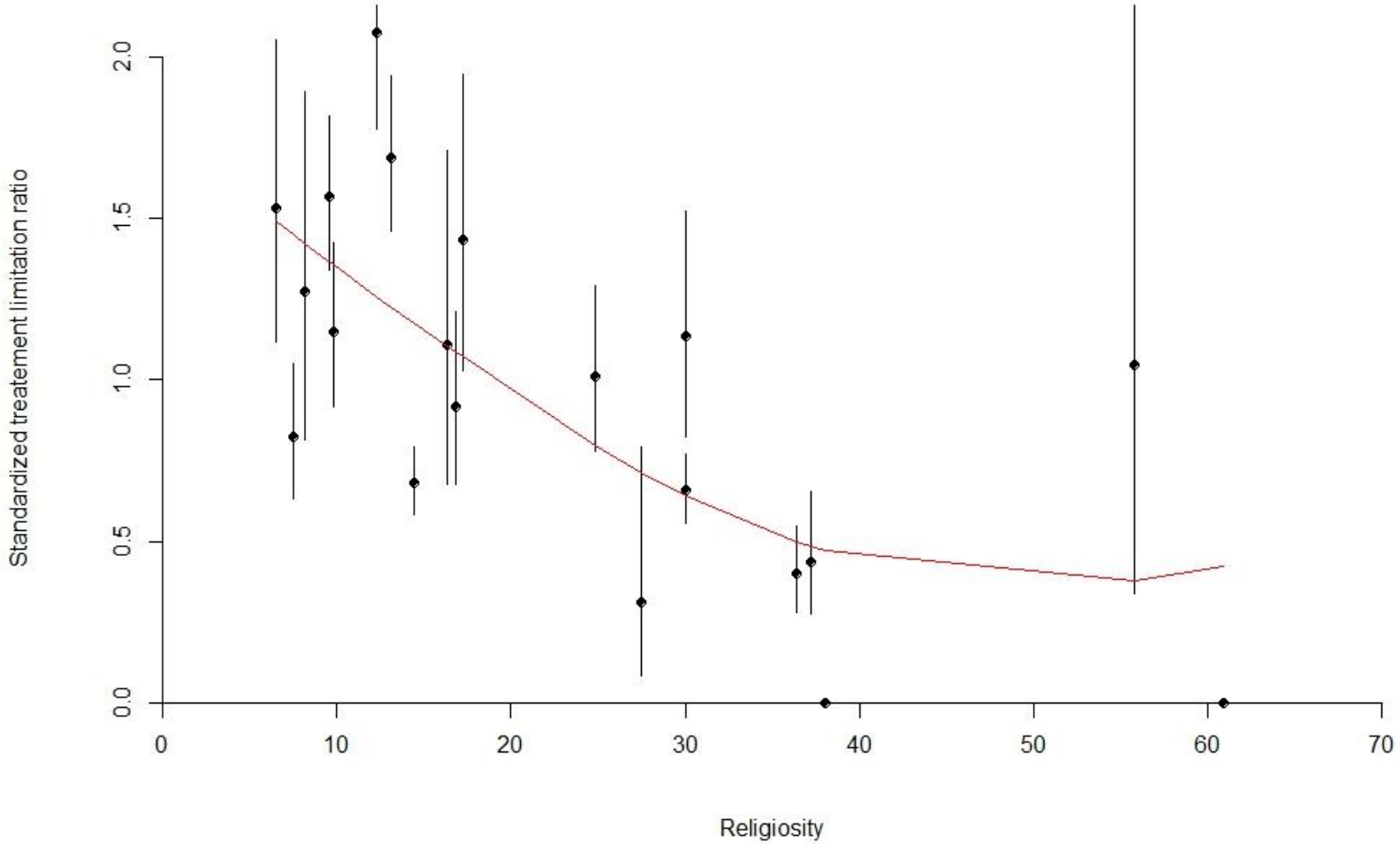
B Guidet et al. Intensive Care Medicine; 2018; 44(7):1027-1038

Analyse des facteurs associés aux decisions de LAT

	Empty model	Patients characteristics		Patients and countries characteristics	
		OR (95% CI)	p value	OR (95% CI)	p value
Frailty 4 vs 1–3		1.59 (1.3–1.95)	< 0.0001	1.59 (1.3–1.95)	< 0.0001
Frailty 5–9 vs 1–3		2.33 (1.98–2.75)	< 0.0001	2.33 (1.98–2.74)	< 0.0001
Age (5 years increase)		1.23 (1.11–1.35)	< 0.0001	1.22 (1.11–1.35)	< 0.0001
Male vs female patient		1.02 (0.89–1.18)	0.754	1.03 (0.89–1.18)	0.7305
Acute vs elective admission		5.61 (4.13–7.62)	< 0.0001	5.59 (4.12–7.59)	< 0.0001
Sofa score (one point increase)		1.12 (1.1–1.14)	< 0.0001	1.12 (1.1–1.14)	< 0.0001
GDP per capita (one point increase)				1 (1–1)	0.01976
Religiosity (one point increase)				0.96 (0.94–0.99)	0.00498

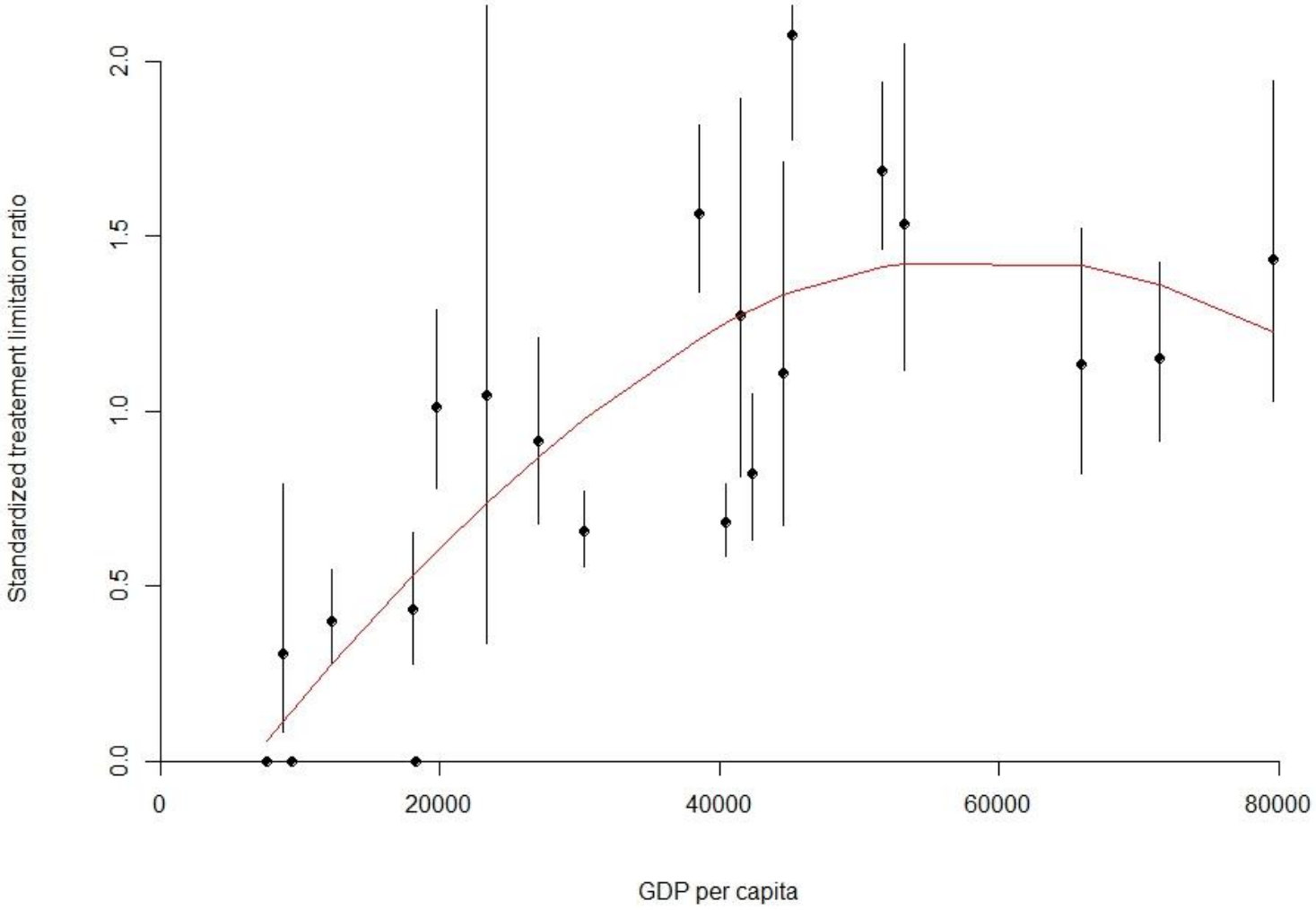
B Guidet et al. Intensive Care Medicine; 2018; 44(7):1027-1038

Impact de la religion



B Guidet et al. Intensive Care Medicine; 2018; 44(7):1027-1038

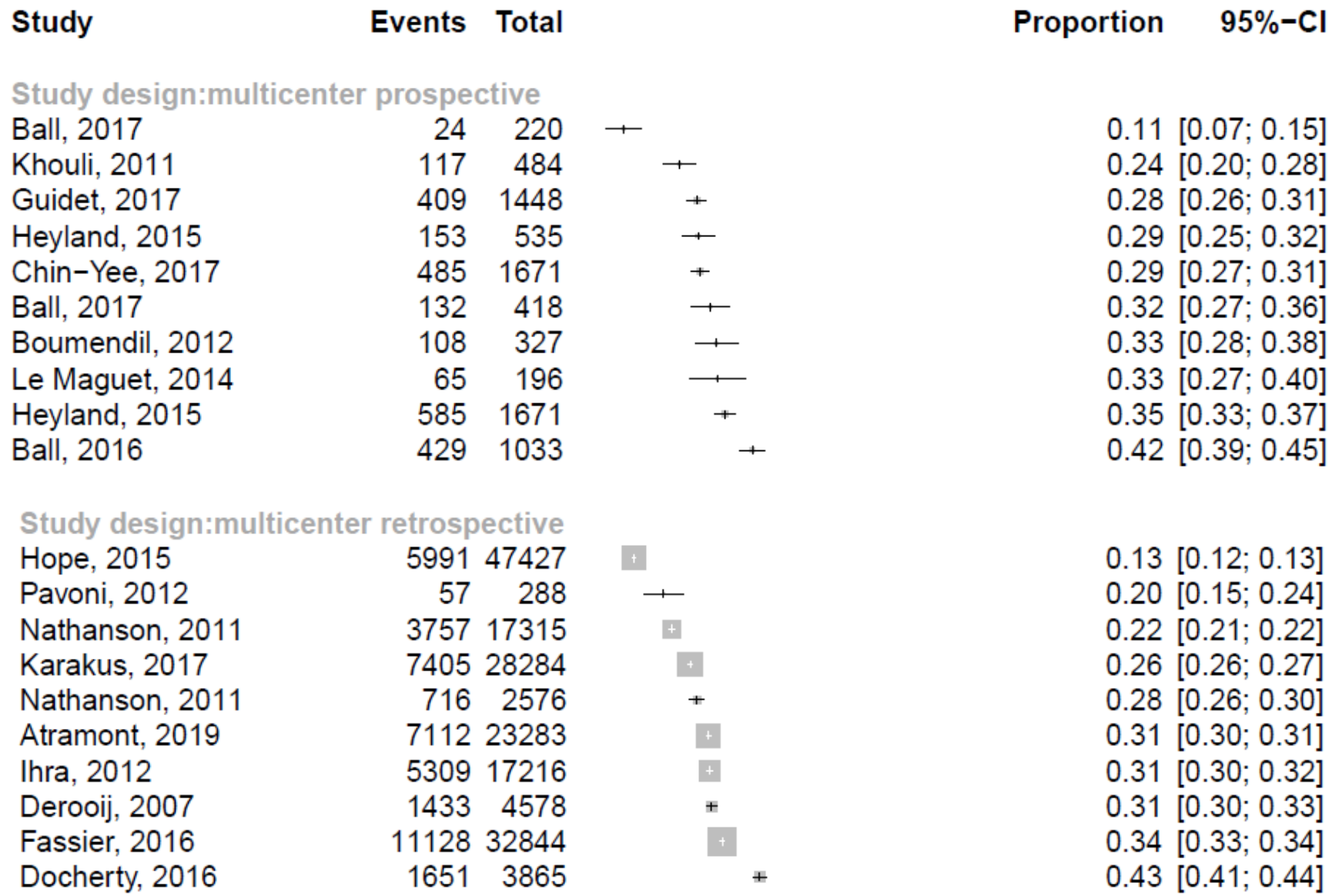
Impact de la richesse (PNB par habitant)



B Guidet et al. Intensive Care Medicine; 2018; 44(7):1027-1038

5 – Mortalité

Mortalité hospitalière



Study	Events	Total	Proportion	95%−CI
Study design:multicenter prospective				
Ball, 2017	24	220	0.11	[0.07; 0.15]
Khouli, 2011	117	484	0.24	[0.20; 0.28]
Guidet, 2017	409	1448	0.28	[0.26; 0.31]
Heyland, 2015	153	535	0.29	[0.25; 0.32]
Chin−Yee, 2017	485	1671	0.29	[0.27; 0.31]
Ball, 2017	132	418	0.32	[0.27; 0.36]
Boumendil, 2012	108	327	0.33	[0.28; 0.38]
Le Maguet, 2014	65	196	0.33	[0.27; 0.40]
Heyland, 2015	585	1671	0.35	[0.33; 0.37]
Ball, 2016	429	1033	0.42	[0.39; 0.45]
Study design:multicenter retrospective				
Hope, 2015	5991	47427	0.13	[0.12; 0.13]
Pavoni, 2012	57	288	0.20	[0.15; 0.24]
Nathanson, 2011	3757	17315	0.22	[0.21; 0.22]
Karakus, 2017	7405	28284	0.26	[0.26; 0.27]
Nathanson, 2011	716	2576	0.28	[0.26; 0.30]
Atramont, 2019	7112	23283	0.31	[0.30; 0.31]
Ihra, 2012	5309	17216	0.31	[0.30; 0.32]
Derooij, 2007	1433	4578	0.31	[0.30; 0.33]
Fassier, 2016	11128	32844	0.34	[0.33; 0.34]
Docherty, 2016	1651	3865	0.43	[0.41; 0.44]

Critical Care Medicine 2021; 49: 324-334

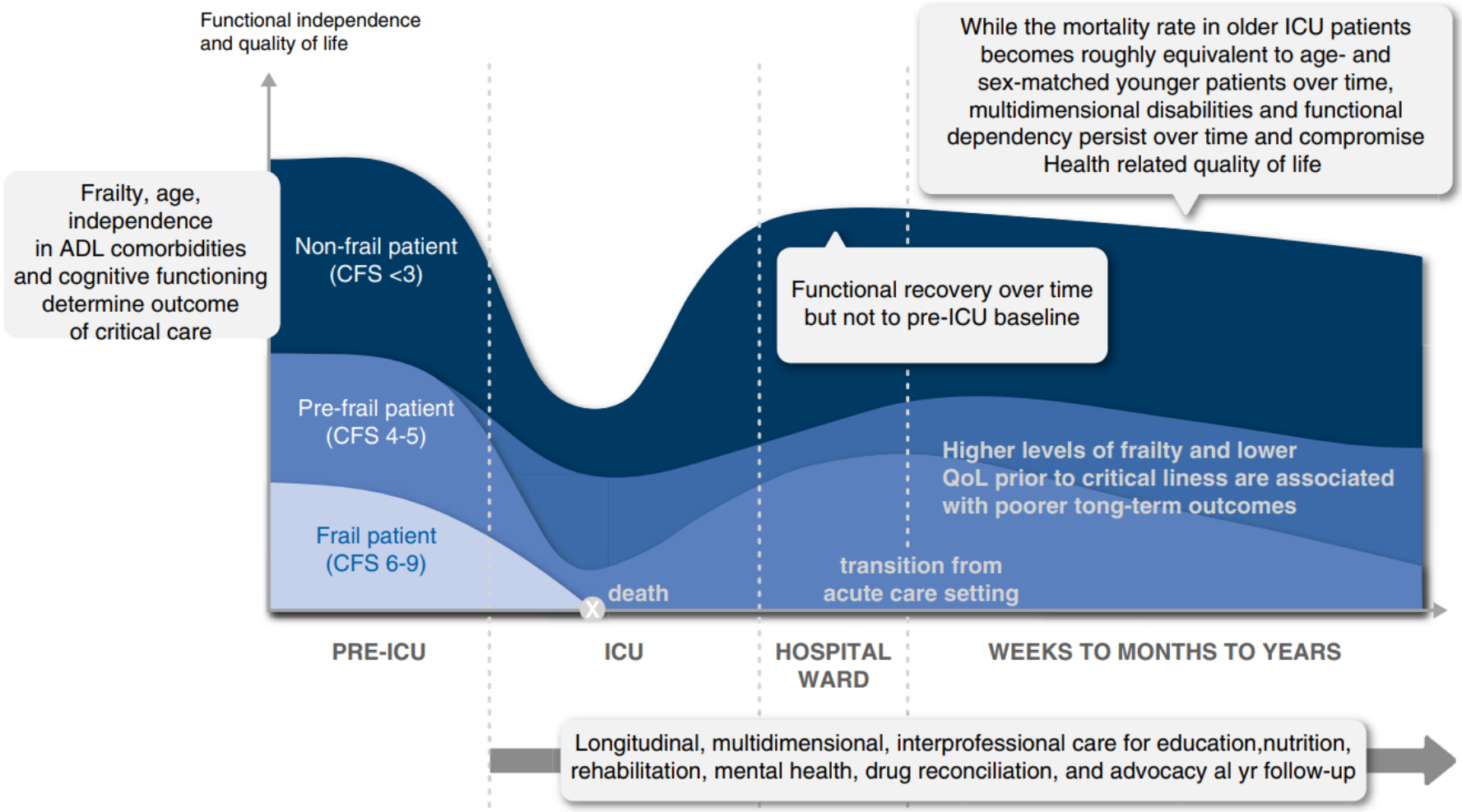
Mortalité hospitalière après la sortie de réanimation

Bertrand Guidet, MD [a,b,c,*], Eric Hodgson, FCA [d], Charles Feldman, MB BCh, DSc, PhD, FRCP, FCP [e], Fathima Paruk, MBChB, FCOG, PhD [f], Jeffrey Lipman, MBBCh, MD [g], Younsuck Koh, MD, PhD [h], Jean Louis Vincent, MD, PhD [i], Elie Azoulay, MD, PhD [j], Charles L. Sprung, MD, MCCP [k]

	Countries	n ICUs	<80 y	>80 y
Δ between in-hospital and in-ICU mortality (%)				
Euricus I (1994-1996)	12 European countries	89	5	11
Euricus II (1997-1999)	9 European countries	39	5.9	12
Bashaw (2000-2005) * vs (65 to 80 y)	Australia and New Zealand	57	6.8*	12
Ihra (1998-2008)	Austria	41	4.5	10.8
CUB-REA (2011)	Ile-de-France	32	4.3	8.3
Reinikainen (1998-2004)	Finland	26	6.9	15.9

Journal of Critical Care 29 (2014) 896–901

Trajectoire du patient âgé

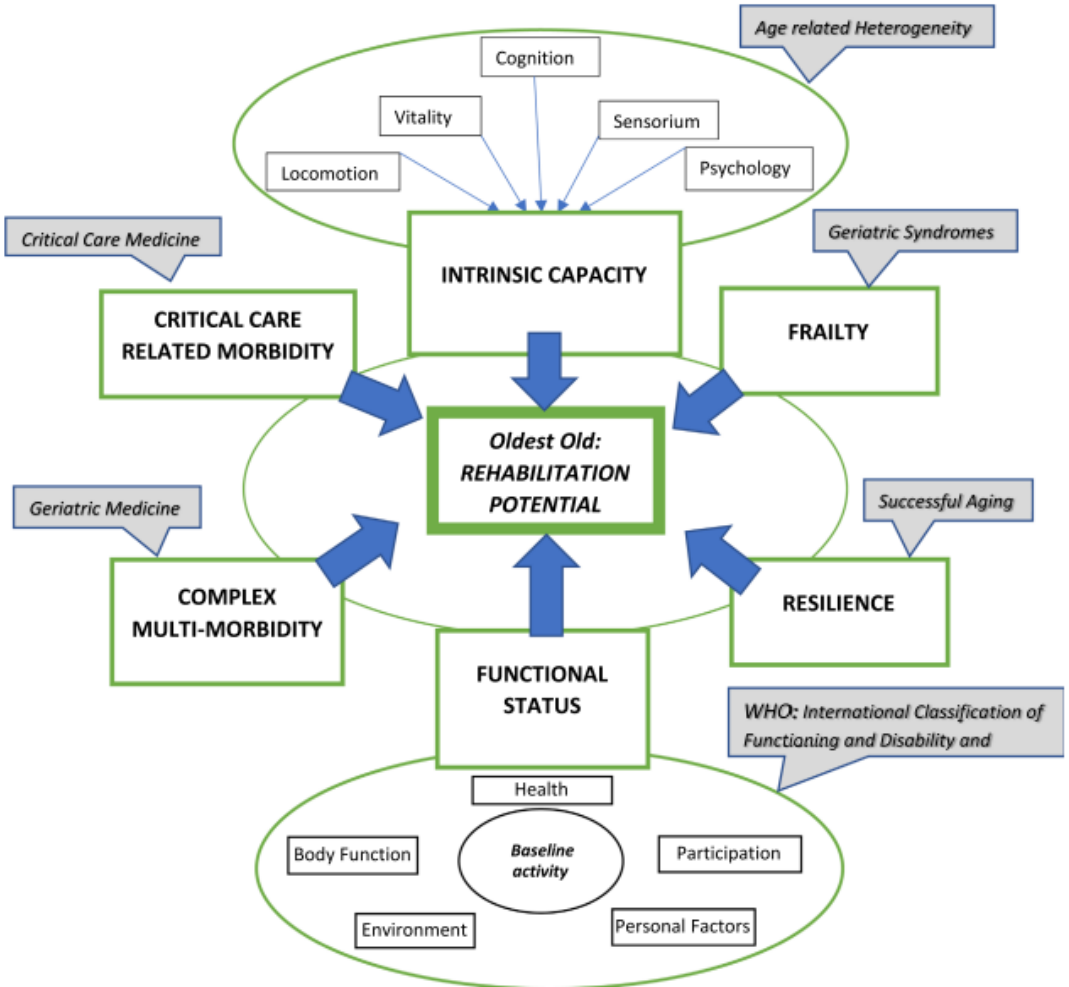


Intensive Care Med
https://doi.org/10.1007/s00134-023-07298-z

REVIEW Open Access

Critical care beyond organ support: the importance of geriatric rehabilitation

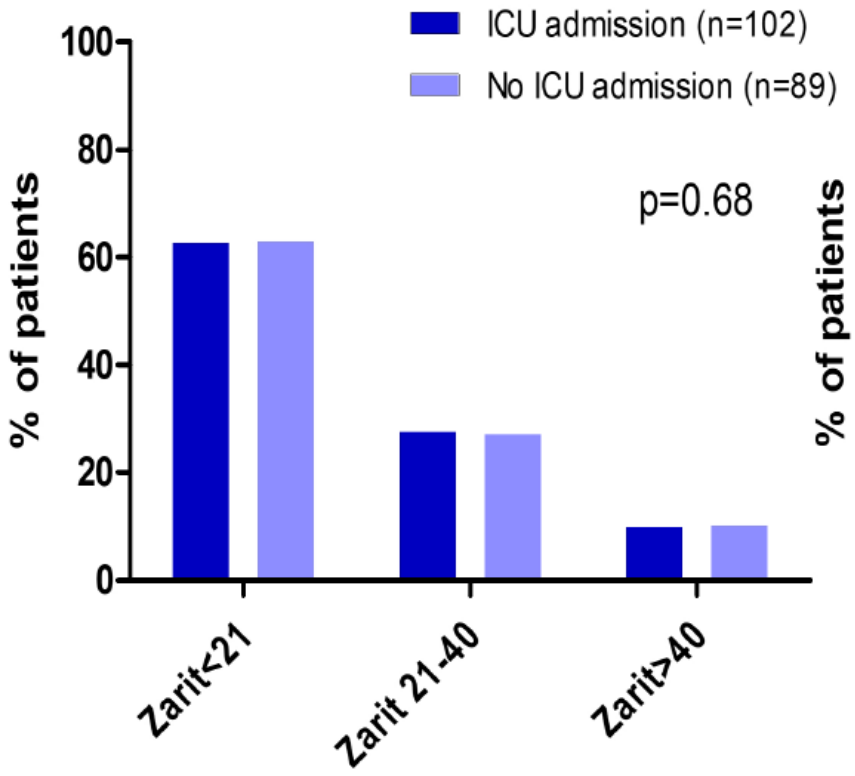
Jeremy M. Jacobs[1], Ana Rahamim[2], Michael Beil[3], Bertrand Guidet[4,5], Helene Vallet[6], Hans Flaatten[7,8], Susannah K. Leaver[9], Dylan de Lange[10], Wojciech Szczeklik[11], Christian Jung[12*] and Sigal Sviri[3]



Ann Intensive Care. 2024 May 10;14(1):71.

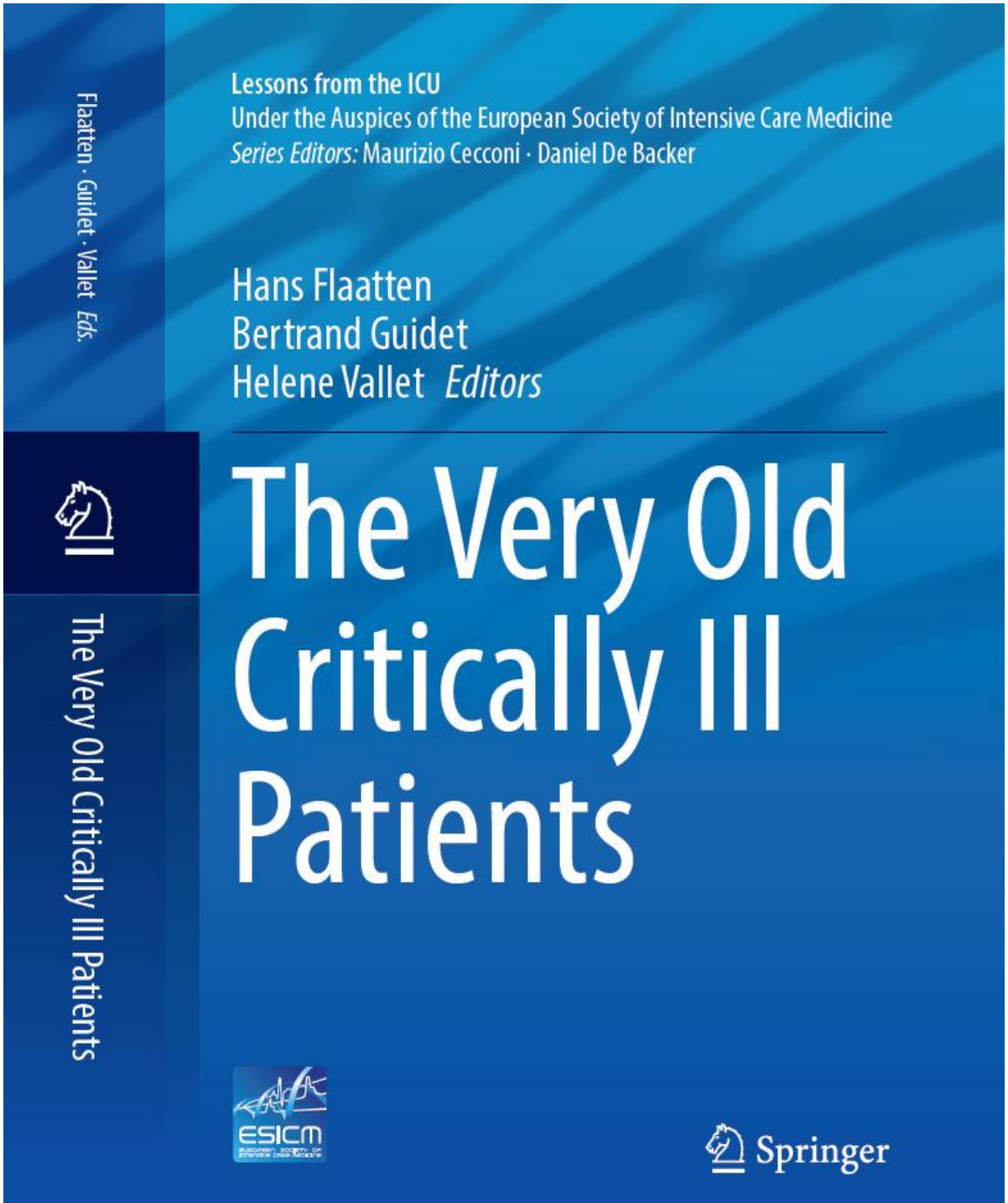
6 – Charge pour les aidants

Acute critically ill elderly patients: what about long term caregiver burden?



	Multivariate	
Variable	Odds ratio (95%CI)	p-value
Change in ADL (one-point decrease)	1.3 (1-1.68)	0.049
Male vs Female	2.03 (0.99-4.19)	0.054
Physical SF12 (one-point decrease)	0.97 (0.93-1.01)	0.14
Mental SF12 (one-point decrease)	0.94 (0.89-0.98)	0.009

J Crit Care 2019; 54: 180-84


Flaatten · Guidet · Vallet *Eds.*
The Very Old Critically Ill Patients
Lessons from the ICU
Under the Auspices of the European Society of Intensive Care Medicine
Series Editors: Maurizio Cecconi · Daniel De Backer
Hans Flaatten
Bertrand Guidet
Helene Vallet *Editors*
The Very Old Critically Ill Patients
ESICM
Springer

Intensive Care Med
https://doi.org/10.1007/s00134-018-5054-7

Conclusion

WHAT'S NEW IN INTENSIVE CARE

Should this elderly patient be admitted to the ICU?

Bertrand Guidet[1,2,3*], Dylan W. de Lange[4] and Hans Flaatten[5,6]

What are the patient's and relatives' wishes?
Information to characterize a critically ill elderly patient
Comorbidities including cancer
Nutritional and functional status (ADL, IADL)
Frailty (CFS, performance status)
Cognitive and psychiatric disorders
Goal(s) of care
Probability of (long-term) survival
Probability of reaching (for the patient) an acceptable quality of life
Treatments during the ICU stay
Reassessment of the patient at days 2–3
Hospital trajectory
ICU discharge location
Hospital discharge location
Burden for the family

Remerciements

Multicentre studies
ICE-CUB 1 & 2
VIP 1 & 2
COVIP

ESICM: Health Services Research Outcome section
Denmark : J Fjölner
Germany : C Jung
Israel: S Sviri
Norway : H Flaatten
Netherlands : D de Lange
Poland : W Szczeklik
Scotland : M Beil
UK : S Leaver
Portugal: R Moreno
Spain : A Artigas

Statistics
A Boumendil

Geriatry
H Vallet

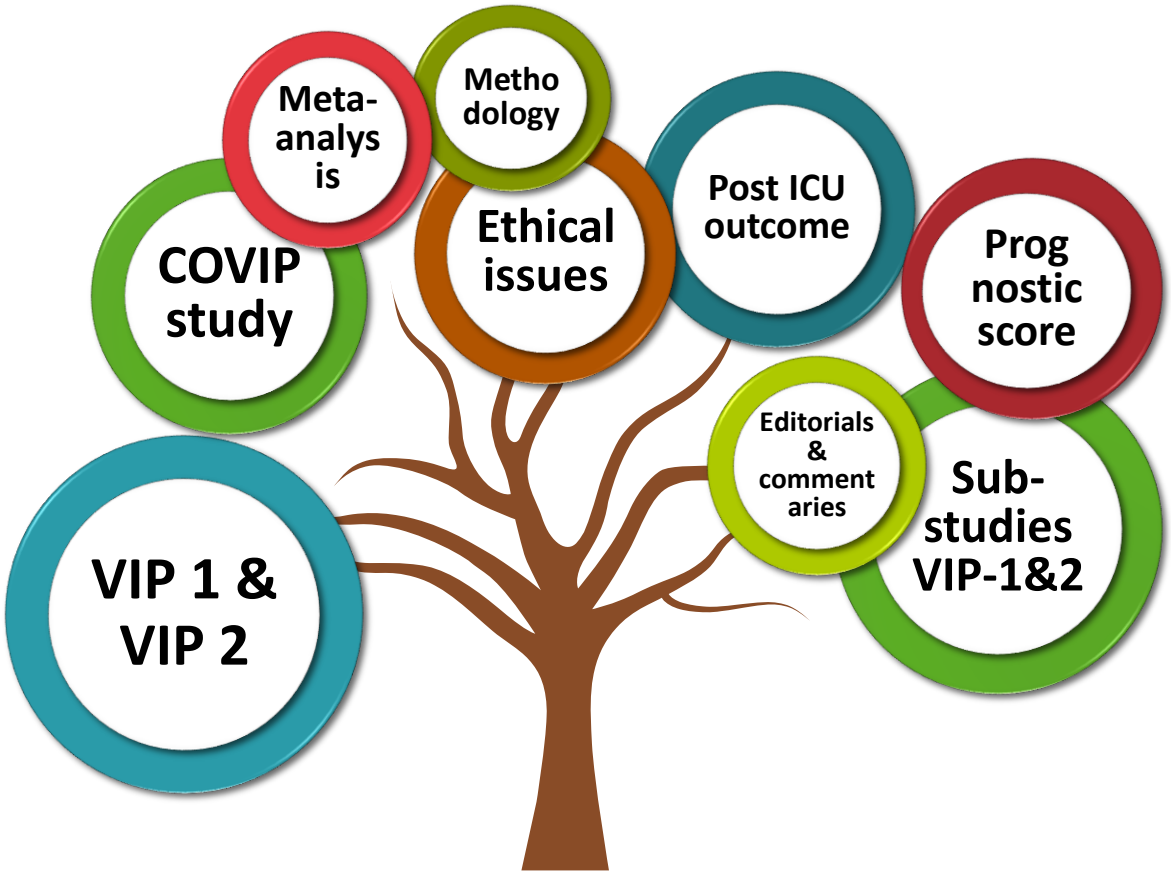
Systematic review
A Dechartres

Emergency medicine
D Pateron

URC-Est
T Simon

CUB-REA
Ph Aegerter

The Very old Intensive care Patient project



ESICM HSRO section

STAR WARS

THE RISE OF OCTOGENARIANS

EPISODE LXXX