Welche Patienten soll ich auf die Intensivstation aufnehmen?

Triage des älteren Patienten

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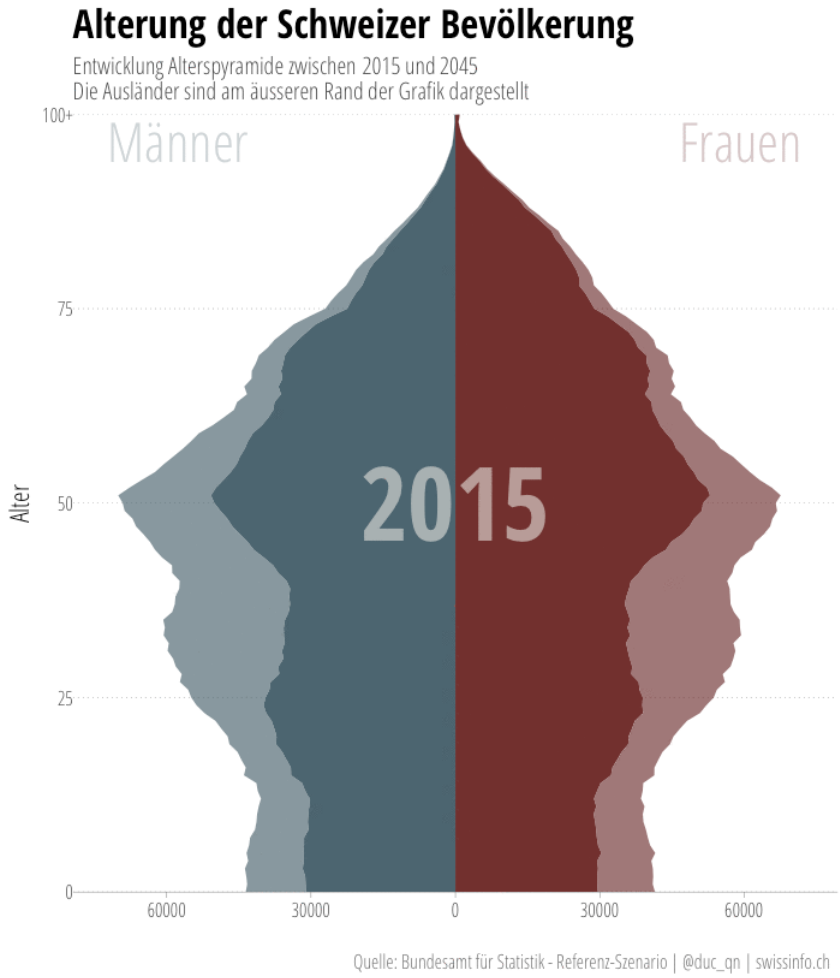
Disclosures

- Travelling support
  - LiDCO Ltd., London, U.K.
  - ImaCOR Inc., Garden City, N.Y., USA
- Research support, monetary
  - NHS England
  - Covidien Ltd., Whiteley, U.K.
- Research support, equipment and disposables
  - Covedien Ltd., Whiteley, U.K.
  - Radiometer Ltd., Crawley, U.K.

Altersstruktur in der Schweiz



Der ältere Patient auf der Intensivstation

- Durchschnittsalter der Patienten in europäischen Intensivstationen: > 65 Jahre
- Dies entspricht > 55 % aller Intensivpatienten
- > 15 % älter als 80 Jahre
- Altersentwicklung der Bevölkerung: **Geschätzter (theoretischer) zusätzlicher Kapazitätsbedarf 2020-2030: > 50%**
- Die am schnellsten wachsende Patientenpopulation…

Flaaten et al. Intensive Care Med 2017;43:1319-28

Laake et al. Acta Anaesthesiol Scand 2010;54:479-84

Mortalität des älteren Intensivpatienten

- IPS Mortalität 30%
- 1-Jahres Mortalität 50%
- Nach schwerem Schock 97%
- Unabhängig nach 1 Jahr < 30%

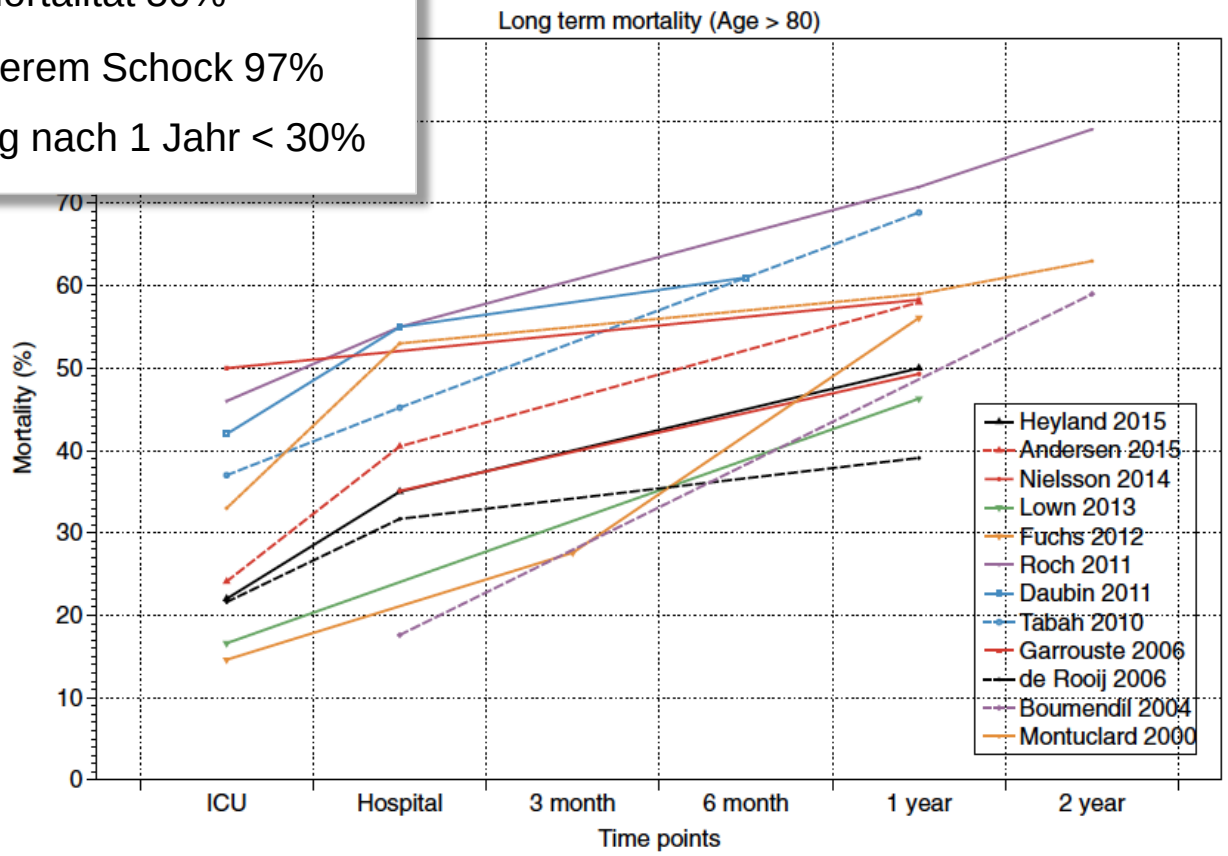


Fig. 2 Long-term mortality in very old ICU patients. Short- and long-term mortality in octogenarians. With permission of ICM [4]

Flaaten et al. Intensive Care Med 2017;43:1319-28

Alter

- Wichtiger prognostischer Marker in der Intensivmedizin
- Ein grosser Teil der prognostischen Aussagekraft wird durch Comorbidität und funktionellen Status erklärt
- Nach Korrektur für Schwere der Erkrankung bleibt der Effekt des Alters signifikant
- **Unabhängiger Prediktor für Mortalität und Morbidität in der grössten Anzahl der Studien**

Haas B, Wunsch H Curr Opin Crit Care 2016;22:500-05

Ageism

„stereotyping, prejudice, and discrimination against people on the basis of their age. Ageism is widespread and an insidious practice which has harmful effects on the health of older adults…

These attitudes (…) have negative impacts on their health and well-being…»

http://www.who.int/ageing/ageism/en/

Admission Bias…

ICE-CUB 1 Studie (F, Notfallmedizin)

- Festgelegte Aufnahme Kriterien nach Delphi-Prozess
  - Kriterien von „Definitive“ → „Inappropriate“
- 1426 Patienten mit definitiven Aufnahmekriterien
  - 441 (30.9%) an IPS zugewiesen
  - 231 von 441 (52.4%) letztendlich auf IPS aufgenommen

„Emergency and intensive care unit physicians were extremely reluctant to consider intensive care unit admission of patients aged >80 yrs, despite the presence of criteria indicating that intensive care unit admission was certainly or possibly appropriate.“

Garrouste-Orgeas et al. Crit Care Med 2009;37:2919-28

Was möchte der Patient ?

- ICE-CUB1: 12.7% der Patienten wurden bezüglich ihrer Meinung im Hinblick auf IPS Behandlung befragt

- ETHICA I u. II
  - Hohe Rate von Ablehnung (27%-63%) intensivmed. Massnahmen unter älteren Patienten
  - Ärztliche Entscheidungen zeigen wenig Übereinstimmung mit Patientenwillen

Philippart et al. Intensive Care Med 2013;39:1565-73

Garrouste-Orgeas et al. Intensive Care Med 2013;39:1574-83

Le Guen et al. Age Ageing 2016;45:303-09

Why bother ?

Concepts in Emergency and Critical Care

Roger C. Bone, MD, *Section Editor*

Consensus Statement on the Triage of Critically Ill Patients

Society of Critical Care Medicine Ethics Committee

The demand for medical services such as critical care is likely to often exceed supply. In the setting of these constraining conditions, institutions and individual providers of critical care must use some moral framework for distributing the available resources efficiently and equitably. Guidelines are therefore provided for triage of critically ill patients. There are several general principles that should guide decision making: providers should advocate for patients; members of the provider team should collaborate; care must be restricted in an equitable system; decisions to give care should be based on expected benefit; mechanisms for alternative care should be planned; explicit policies should be written; prior public notification is necessary. Patients who are not expected to benefit from intensive care, such as those with imminently fatal illnesses or permanent unconsciousness, should not be placed in the intensive care unit. Hospitals should assign individuals the responsibility of intensive care triage, and a committee should oversee the performance of this responsibility to facilitate the most efficient and equitable use of intensive care.

(*JAMA*. 1994;271:1200-1203)

IT IS likely that the demand for health care service will always exceed the supply. In this context of relative scarcity, it is appropriate to develop explicit guidelines to help facilitate the fairest use of these services.[1-11] This statement offers critical care providers principles and guidelines for the distribution of intensive care resources among individual patients.

JUSTIFICATION

The United States and other countries face difficult questions regarding access to, delivery of, and payment for health care services, as well as the proportion of health care expenditures that should be appropriated for critical care. These issues are not likely to be resolved easily or quickly, nor will these general issues be addressed herein. Regardless of when and how these broader issues are resolved, individual health care organizations and providers will continually face a disparity between demand for and availability of critical care facilities. Demand is created by the inclination of critically ill patients and their families to seek, and their physicians to provide, intensive care. The advancing age of the population is likely to increase the demand for services as more elderly individuals who are frail, chronically ill, and subject to life-threatening illness become potential candidates for critical care. The development of new pharmaceutical products and technological devices often makes the care provided more expensive. At the same time that demand for and expense of care are increasing, the capacity to meet demand is constrained by inadequate reimbursement, restricted growth of health care facilities, and personnel shortages.

In the setting of these constraining conditions, individual institutions and individual providers of critical care must use some moral framework for distributing the resources at hand. Sometimes resources are more obviously limited than at other times, as evidenced by the absence of an available bed in the intensive care unit (ICU). The guidelines provided herein are intended to be applicable whether or not an immediate shortage is apparent, because their continuous use will lead to more consistently equitable and efficient critical care. It is recognized that limiting care of critically ill patients during acute shortages is more likely to result in adverse consequences for individual patients than limiting care during times without shortages.

While various terms such as "triage," "rationing," or "allocation of resources" have been used to describe the distribution of limited goods and services, we will use the term "triage."[12-16] This term has been chosen because it conveys a well-established process in medicine of finding the most appropriate disposition for a patient based on an assessment of the patient's illness and its urgency. "Triage" derives from the French verb *trier*, meaning to pick, to sort, or to select. The first medical application of the word was in the French military, where *hô-*

From the Society of Critical Care Medicine Ethics Committee. A complete list of the members of this committee appears at the end of this article.

Reprint requests to Society of Critical Care Medicine, 8101 E Kaiser Blvd, Anaheim, CA 92808-2214 (Ms Charm Kohlenberger).

„Very elderly individuals who are failing to thrive due to irreversible, chronic illness should not be encouraged to use intensive care“

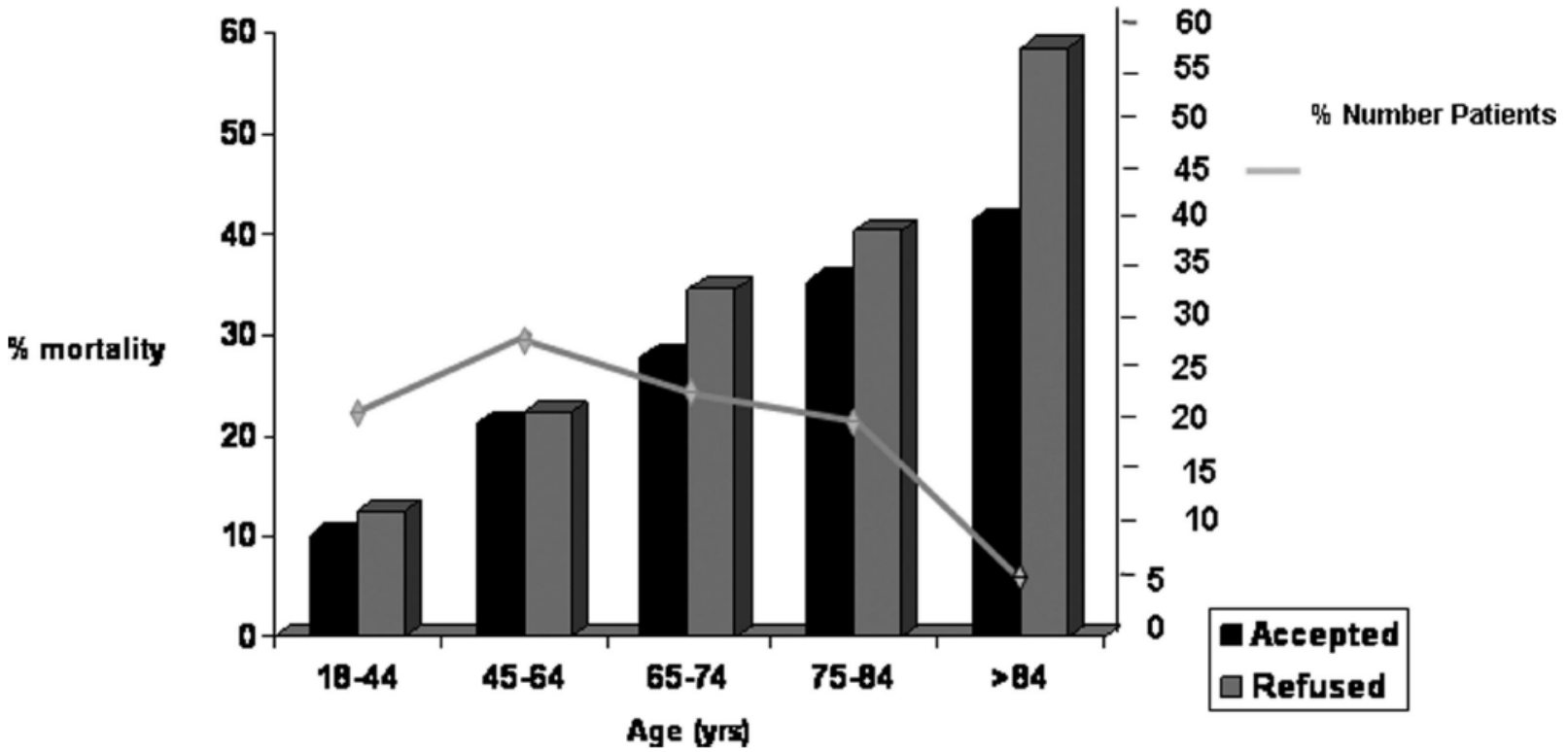
SCCM Ethics Committee JAMA 1994;271:1200-03

Aktuelle epidemiologische Daten

Author	Country	Year	No.	Period	Results	Trend in Mortality
Docherty et al.	GB	2016	3865	2005-2009	Decrease from 10% to 8.4%	Not addressed
Haas et al.	NL	2015	39,558	2005-2014	**Increase from 13.4% to 13.9%**	Not addressed
Nielsson et al.	DK	2014	6266	2005-2011	**Increase from 11.7% to 13.8%**	Not addressed
Ihra et al.	A	2012	17,126	1998-2008	**Increase from 11.5% to 15.3%**	**Decrease**
Bagshaw et al.	AUS/NZ	2009	15,640	2000-2005	**Annual Increase 5.6%**	**Decrease**

Modifiziert nach Flaaten et al. Intensive Care Med 2017;43:1319-28

ELDICUS II



Sprung et al. Crit Care Med 2012;40:132-138

ELDICUS II

Twenty-eight– day post-triage mortality by reasons for rejection with Simplified Acute Physiology Score II score and age

	Too Ill		Too Well		No Beds	
Age	Mortality	SAPS II	Mortality	SAPS II	Mortality	SAPS II
18–44	8 of 11 (73%)	28.2 ± 18.1	3 of 72 (4%)	16.0 ± 8.4	5 of 43 (12%)	22.3 ± 13.2
45–64	34 of 48 (71%)	31.0 ± 16.5	4 of 119 (3%)	18.8 ± 11.9	16 of 79 (20%)	21.7 ± 13.0
65–74	49 of 66 (74%)	27.6 ± 14.5	19 of 120 (16%)	19.9 ± 10.6	25 of 63 (40%)	25.1 ± 13.0
75–84	80 of 108 (74%)	29.9 ± 16.5	22 of 119 (19%)	20.2 ± 10.0	16 of 48 (33%)	25.8 ± 14.7
85+	32 of 37 (87%)	28.7 ± 15.4	7 of 26 (27%)	22.8 ± 12.1	4 of 11 (36%)	29.3 ± 14.9
Total	203 of 270 (75%)	29.3 ± 15.9	55 of 456 (12%)	19.2 ± 10.7	66 of 244 (27%)	23.8 ± 13.5

SAPS, Simplified Acute Physiology Score. Number (percent). SAPS II score without age points.

Sprung et al. Crit Care Med 2012;40:132-138

ELDICUS II

Physicians should consider changing their ICU triage practices for the elderly, especially accepting elderly patients appearing "too well."

Sprung et al. Crit Care Med 2012;40:132-138

2016

ICU Admission, Discharge, and Triage Guidelines: A Framework to Enhance Clinical Operations, Development of Institutional Policies, and Further Research

Joseph L. Nates, MD, MBA, FCCM (Chair)[1]; Mark Nunnally, MD, FCCM[2]; Ruth Kleinpell, PhD, RN, FAAN, FCCM[3]; Sandralee Blosser, MD, FCCP, FCCM[4]; Jonathan Goldner, DO, FCCP, FCCM[5]; Barbara Birriel, MSN, CRNP, ACNP-BC, FCCM[6]; Clara S. Fowler, MS[7]; Diane Byrum, RN, MSN, CCRN, CCNS, FCCM[8]; William Scherer Miles, MD, FACS, FCCM[9]; Heatherlee Bailey, MD, FAAEM, FCCM[10]; Charles L. Sprung, MD, JD, MCCM[11]

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[3]Center for Clinical Research and Scholarship, Rush University Medical Center, Rush University College of Nursing, Chicago, IL.
[4]Penn State Hershey Medical Center, Hershey, PA.
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[6]College of Nursing, The Pennsylvania State University College of Nursing, Hershey, PA.
[7]Research Medical Library, The University of Texas MD Anderson Cancer Center, Houston, TX.
[8]PH Huntersville, Nursing Education, Practice and Research, Novant Health Huntersville Medical Center, Huntersville, NC.
[9]Department of Surgery, UNC-Chapel Hill, Carolinas Medical Center, Charlotte, NC.
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Supplemental digital content is available for this article. Direct URL citations appear in the printed text and are provided in the HTML and PDF versions of this article on the journal's website (http://journals.lww.com/ccmjournal).

The American College of Critical Care Medicine (ACCM), which honors individuals for their achievements and contributions to multidisciplinary critical care medicine, is the consultative body of the Society of Critical Care Medicine (SCCM) that possesses recognized expertise in the practice of critical care. The College has developed administrative guidelines and clinical practice parameters for the critical care practitioner. New guidelines and practice parameters are continually developed, and current ones are systematically reviewed and revised.

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Dr. Nates received research funding from The University of Texas Engineering Grant for simulation and from The University of Texas MD Anderson Grant for noninvasive ventilation. He disclosed participation in other activities with the American Society of Anesthesiology (speaker) and Colombian Society of Critical Care Medicine (speaker). Dr. Nunnally disclosed participation in other activities with the Society of Critical Care Anesthesiologists (board), American Society of Anesthesiologists committee, Illinois Society of Anesthesiologists (delegate), International Anesthesia Research Society, and Association of University Anesthesiologists. Dr. Kleinpell received research funding from the American Association of Critical Care Nurses Impact Research Grant, participated in other activities with the Institute of Medicine of Chicago (board member), American Academy of Nursing (board member), Commission on Collegiate Nursing Education (board member), and American Board of Internal Medicine Critical Care Medicine Board (board member). Dr. Blosser disclosed participation in other activities with NCS (committee member). Dr. Byrum received funding from the Moore Foundation grant for ICU Liberation Society of Critical Care Medicine. Dr. Bailey disclosed other relationships with NWS (Speaker for CME courses) and participation in other activities with AAEM (chair of academic committee). Dr. Sprung disclosed relationships not related to this topic with Asahi Kasei Pharma America Corporation (consultant for Data Safety and Monitoring Committee), LeukoDx Ltd. (Principal investigator, Research study on biomarkers of sepsis), LeukoDx Ltd. (International Sepsis Forum Board member), and Continuing Education, Inc./University at Sea, Lecturer). The remaining authors have disclosed that they do not have any potential conflicts of interest.

For information regarding this article, E-mail: jlnates@mdanderson.org

Objectives: To update the Society of Critical Care Medicine's guidelines for ICU admission, discharge, and triage, providing a framework for clinical practice, the development of institutional policies, and further research.

Design: An appointed Task Force followed a standard, systematic, and evidence-based approach in reviewing the literature to develop these guidelines.

Measurements and Main Results: The assessment of the evidence and recommendations was based on the principles of the Grading

„ We suggest basing the decision to admit an elderly (> 80 yr) patient to an ICU on the patient's comorbidities, severity of illness, prehospital functional status, and patient preferences with regard to life-sustaining treatment, not on their chronological age“

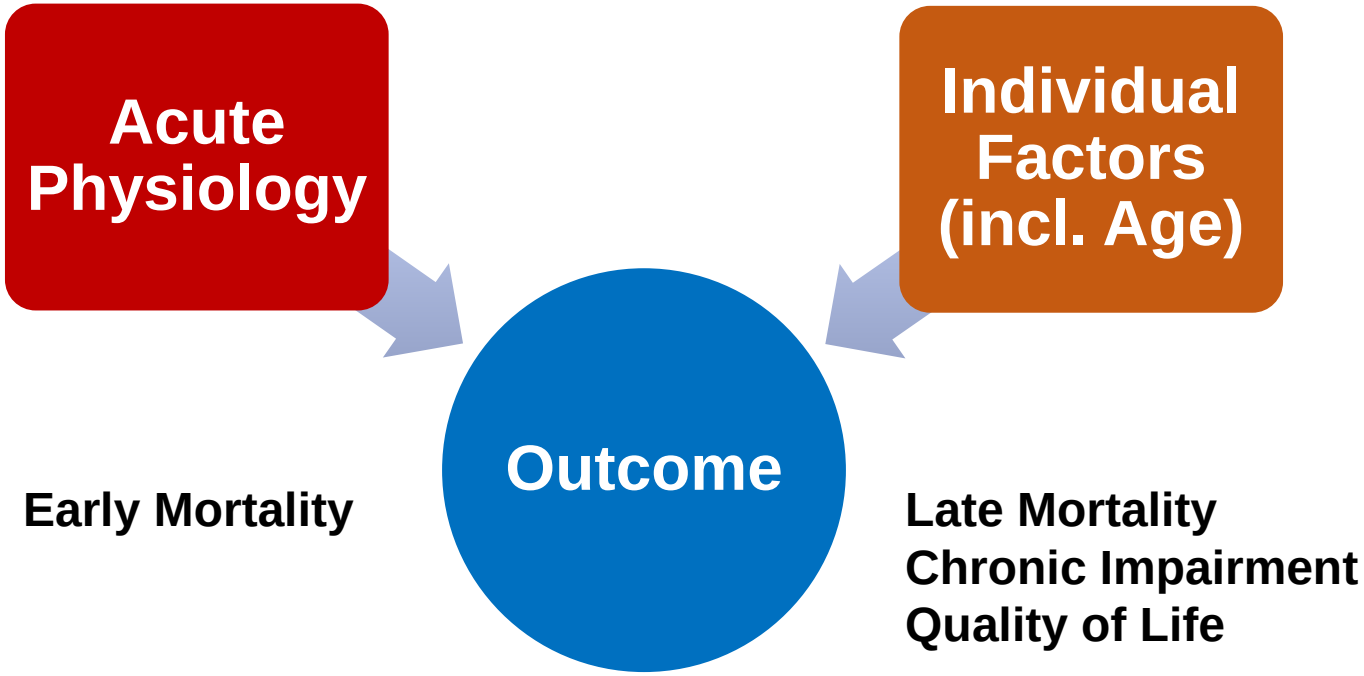
Nates et al. Crit Care Med 2016;44:1553-1602

Triage älterer Patienten

Einige methodologische Probleme…

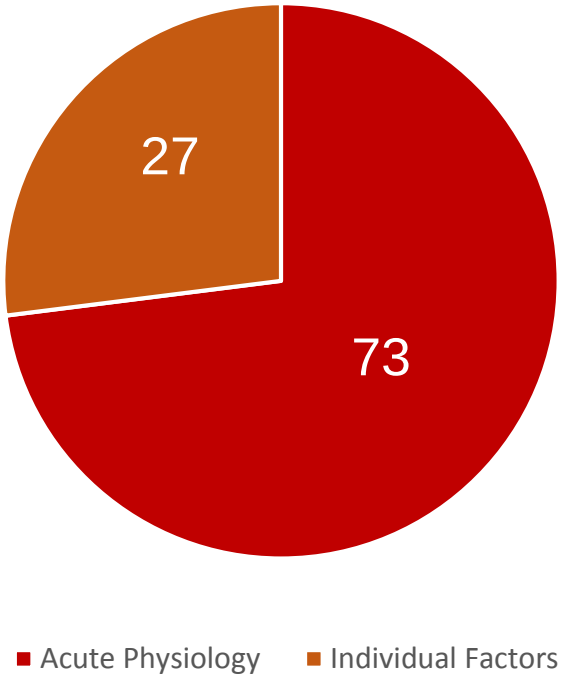
- Alter nicht einheitlich definiert
- IPS Indikationen variieren
- Einfluss von festgelegten Therapielimitationen ?
- Schwierige Identifikation der Personen, die von einem IPS Aufenthalt profitieren
- Scores: Keine Triageinstrumente
- **Keine randomisierten Studien zur Triage älterer Patienten auf die Intensivstation**

Determinanten des Outcomes älterer Patienten

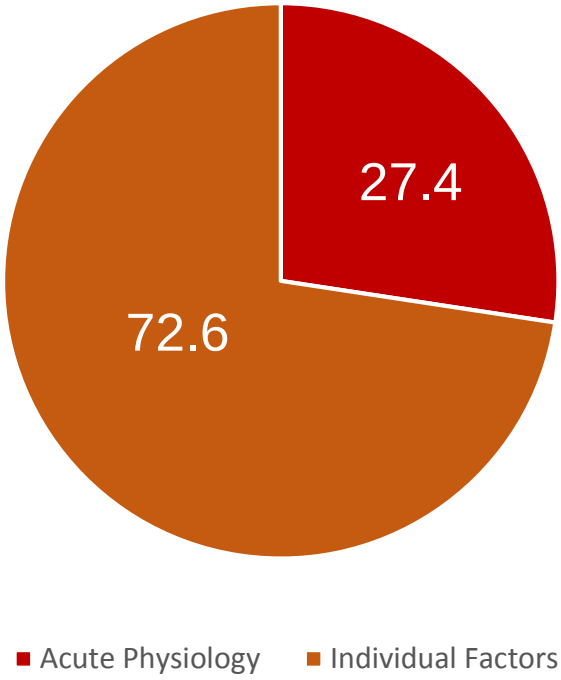


Stellenwert der akuten Erkrankungsschwere

APACHE III 1991



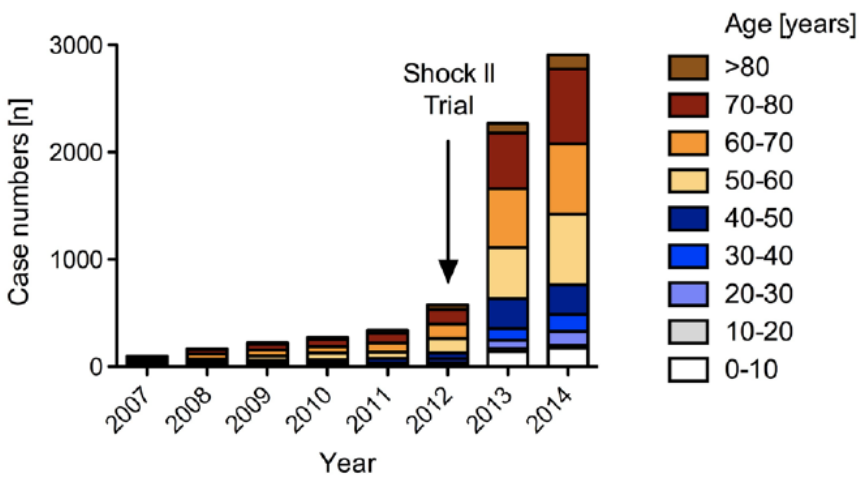
SAPS 3 2005

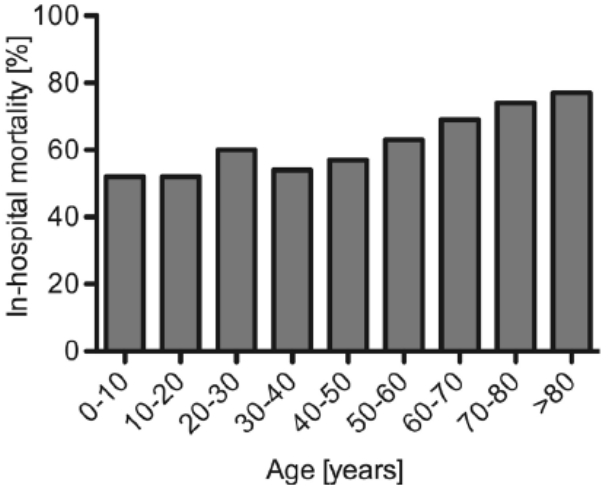


Knaus et al. CHEST 1991;100:1619-36

Moreno et al. Intensive Care Med 2005;31:1345-55

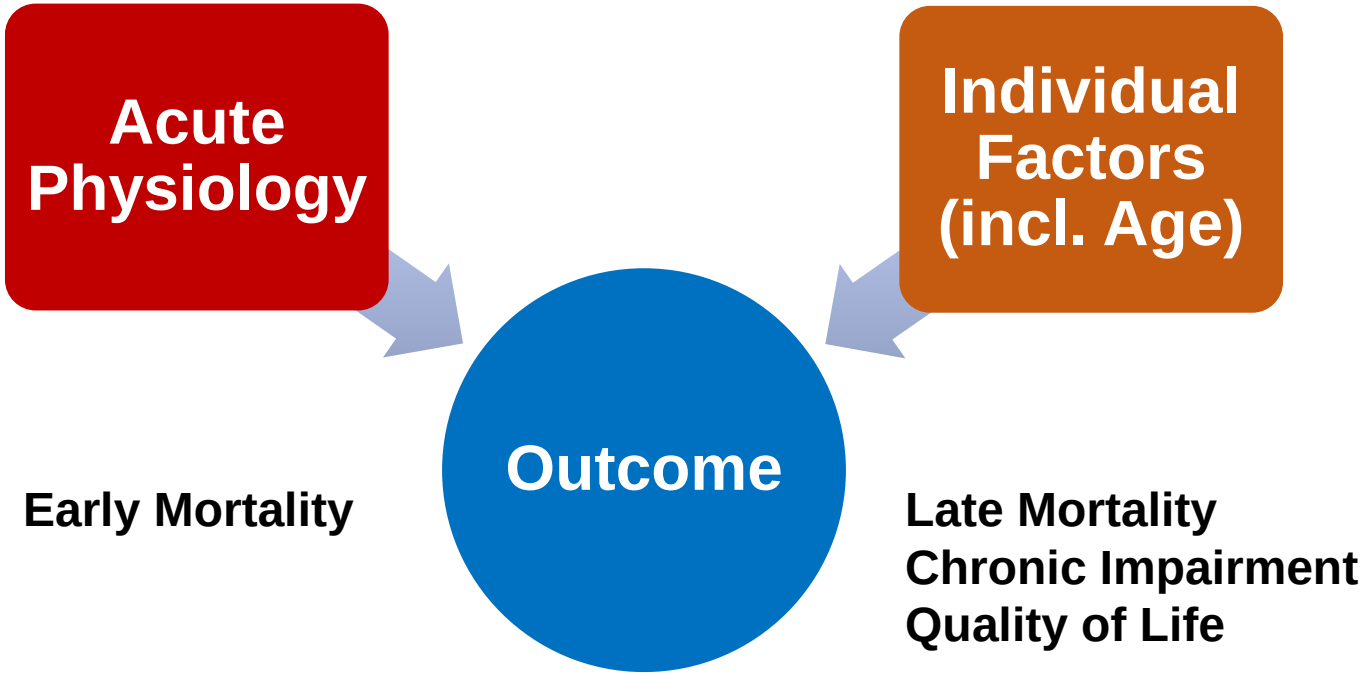
Extracorporeal membrane oxygenation: evolving epidemiology and mortality



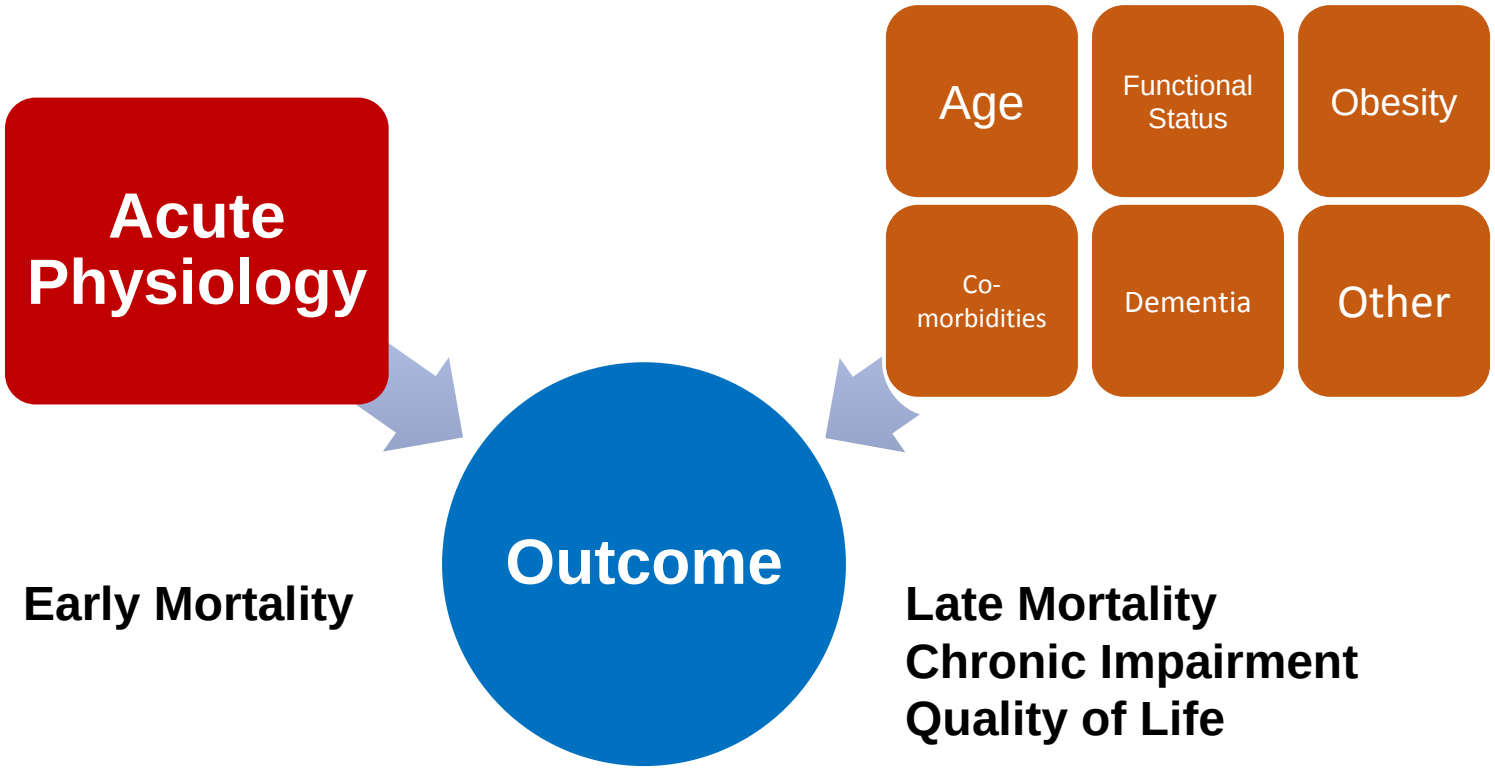


Karagiannidis et al. Intensive Care Med 2016;42:889-96

Determinanten des Outcomes älterer Patienten



Determinanten des Outcomes älterer Patienten



Determinanten des Outcomes älterer Patienten

The Gordian knot of age, comorbidities and frailty

Haas B, Wunsch H Curr Opin Crit Care 2016;22:500-05

Ansätze

- Führt eine systematische Aufnahme auf die Intensivstation zu einer Verbesserung des Überlebens ?

- Gibt es praktikable Instrumente zur Abschätzung des individuellen Risikos eines ungünstigen Verlaufs nach IPS Hospitalisation ?

ICE-CUB 2

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

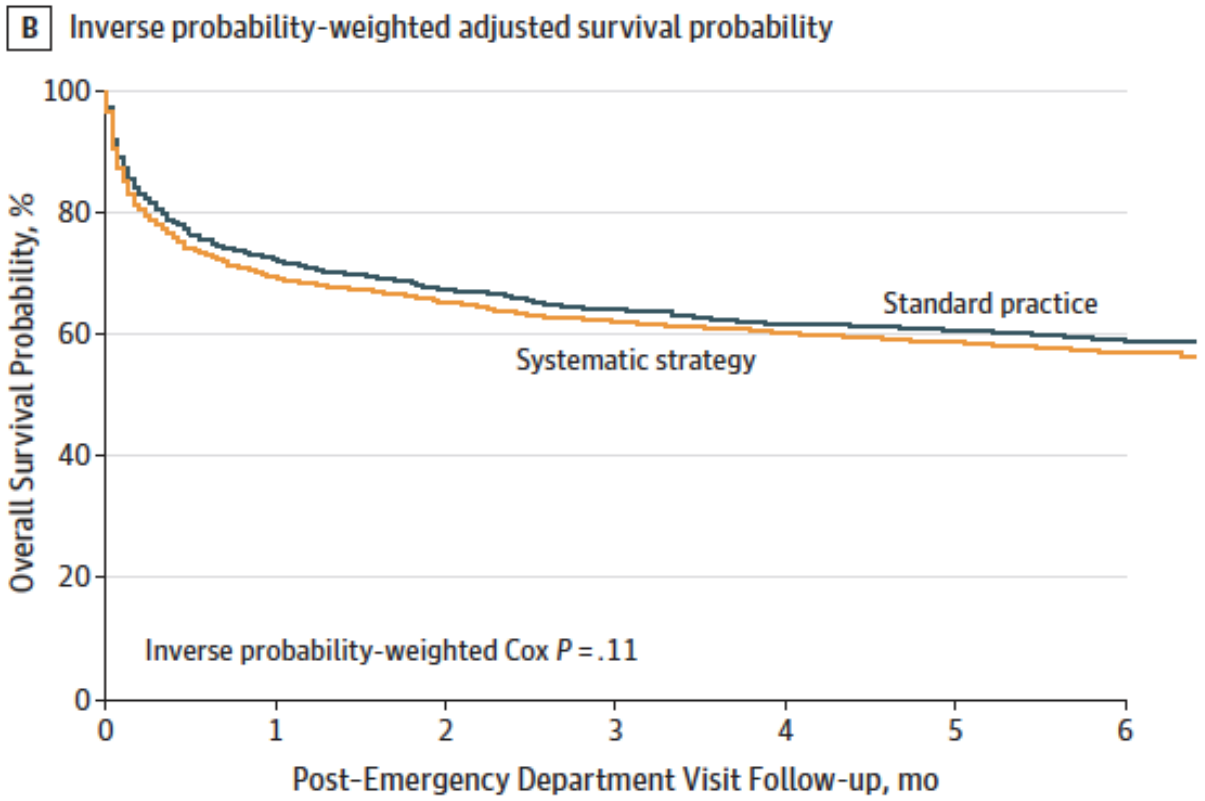
Systematische Aufnahmestrategie:

- Höhere IPS Aufnahmerate (61% vs. 34%)
- Aufnahme „kränkerer“ Patienten (SAPS 3 64 vs. 59)
- Häufigere Konsultation des Patienten/der Angehörigen (49% vs. 24%)
- Häufigeres Einverständnis des Patienten/der Angehörigen bezüglich IPS Therapie (88% vs. 66%)

Guidet et al. JAMA 2017;318:1450-59

ICE-CUB 2

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



Guidet et al. JAMA 2017;318:1450-59

Frailty

- a state of vulnerability to poor resolution of homoeostasis after a stressor event
- a consequence of cumulative decline in many physiological systems during a lifetime.
- This cumulative decline depletes homoeostatic reserves until minor stressor events trigger disproportionatechanges in health status
- **Not only in the old**

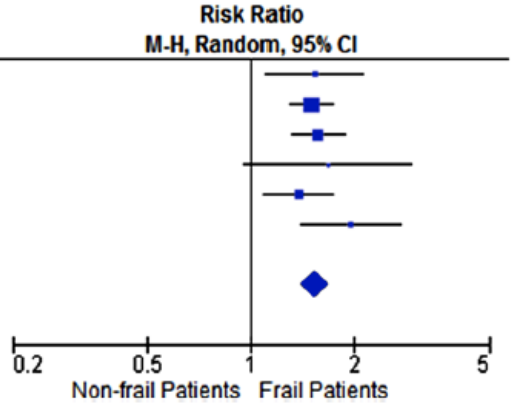
Clegg et al. Lancet 2013;381:752-62

Frailty in der Intensivmedizin

Langzeitmortalität (> 6 Monate) frail vs. Non-frail

Study or Subgroup	Frail Events	Frail Total	Nonfrail Events	Nonfrail Total	Weight	Risk Ratio M-H, Random, 95% CI
Bagshaw 2014	45	138	60	283	8.0%	1.54 [1.11, 2.14]
Brummel 2016	158	307	251	733	39.5%	1.50 [1.30, 1.74]
Heyland 2015	106	193	146	417	25.8%	1.57 [1.31, 1.88]
Hope 2017	15	34	16	61	2.7%	1.68 [0.96, 2.96]
Kizilarslanoglu 2016	22	26	59	96	16.6%	1.38 [1.10, 1.73]
Maguet 2014	27	46	45	150	7.3%	1.96 [1.39, 2.76]
Total (95% CI)		**744**		**1740**	**100.0%**	**1.53 [1.40, 1.68]**
Total events	373		577			

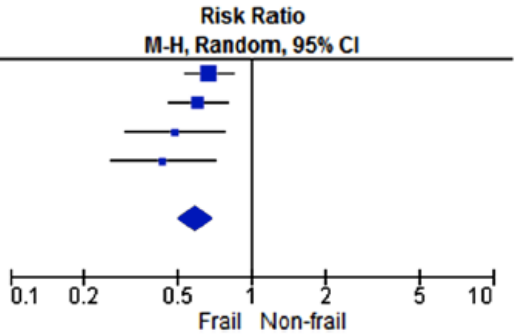
Heterogeneity: Tau² = 0.00; Chi² = 3.06, df = 5 (P = 0.69); I² = 0%
Test for overall effect: Z = 9.02 (P < 0.00001)



Entlassung ins häusliche Umfeld frail vs. Non-frail

Study or Subgroup	Frail Events	Frail Total	Nonfrail Events	Nonfrail Total	Weight	Risk Ratio M-H, Random, 95% CI
Bagshaw 2014	53	138	162	283	44.2%	0.67 [0.53, 0.85]
Heyland 2015	43	193	153	416	31.0%	0.61 [0.45, 0.81]
Maguet 2014	13	46	88	150	12.8%	0.48 [0.30, 0.78]
Mueller 2015	12	39	45	63	12.0%	0.43 [0.26, 0.71]
Total (95% CI)		**416**		**912**	**100.0%**	**0.59 [0.49, 0.71]**
Total events	121		448			

Heterogeneity: Tau² = 0.00; Chi² = 3.42, df = 3 (P = 0.33); I² = 12%
Test for overall effect: Z = 5.81 (P < 0.00001)



Muscedere et al. Intensive Care Med 2017;43:1105-22

Clinical Frailty Scale

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.

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

VIP 1

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

- 30 -Tage Mortalität 32.6%
- Frailty (CFS ≥ 5) vorhanden in 43.1% d. Patienten
- Hohe Korrelation CFS mit SOFA
- Akute Aufnahme, Frailty und SOFA Score: unabhängige Überlebensprädiktoren

- 23.8%: keine IPS-spezifischen Interventionen

Flaatten et al. Intensive Care Med 2017;43:1820-28

VIP 1

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

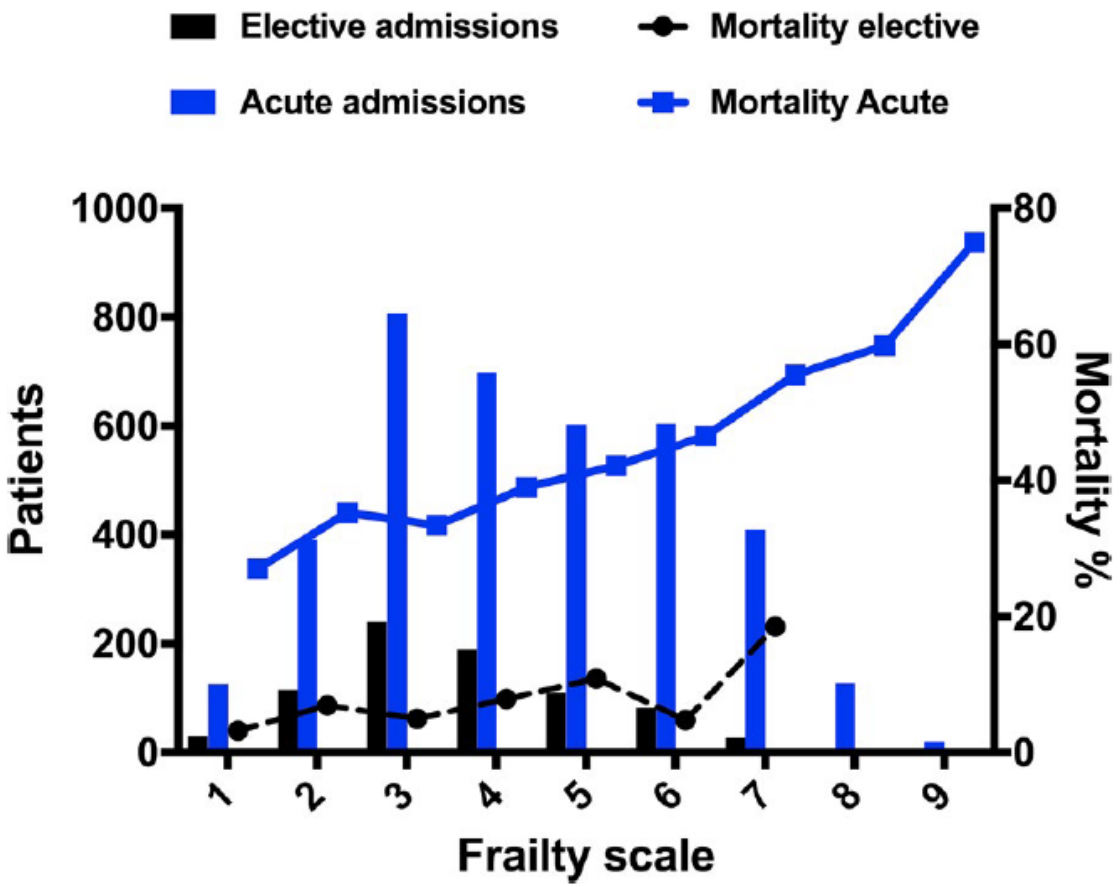
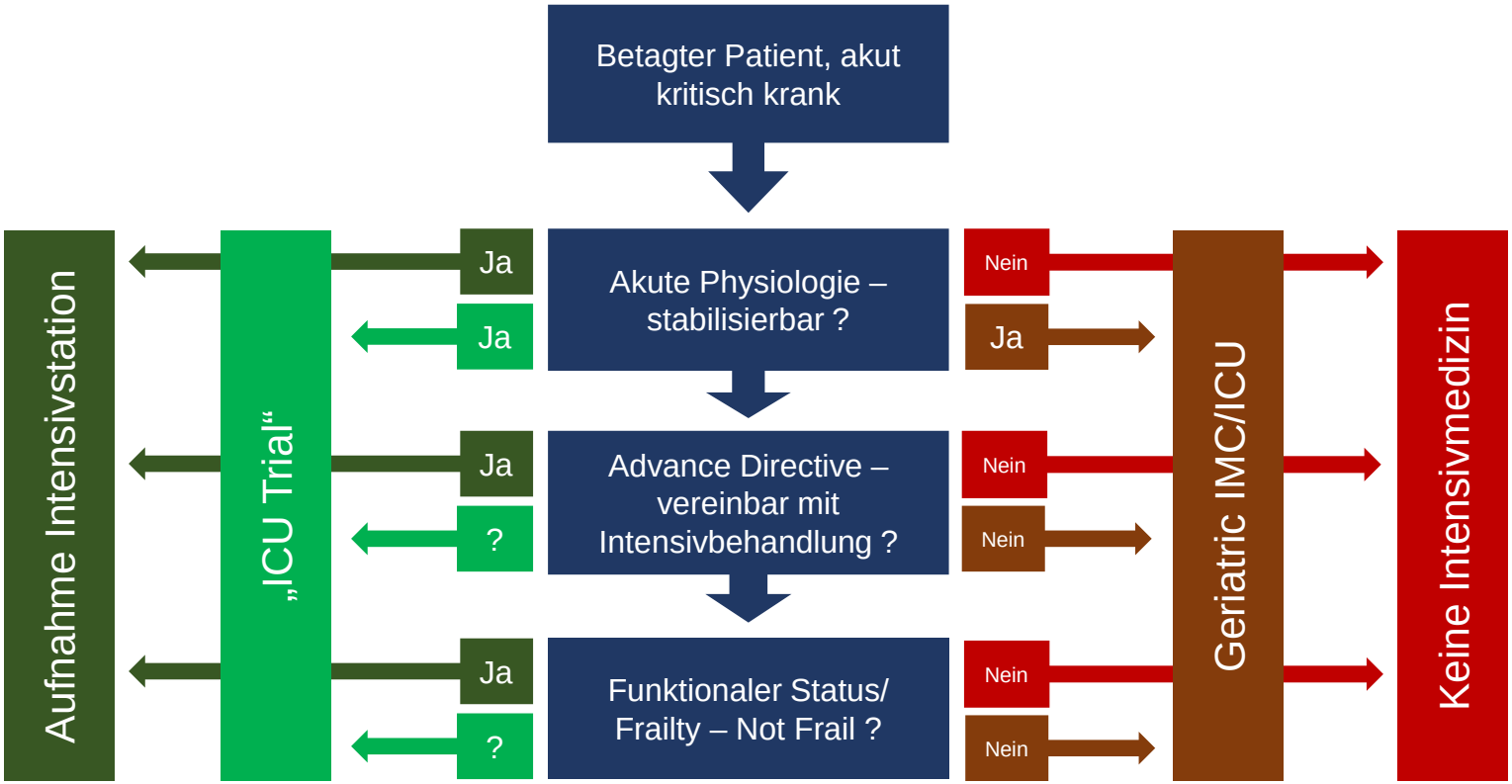


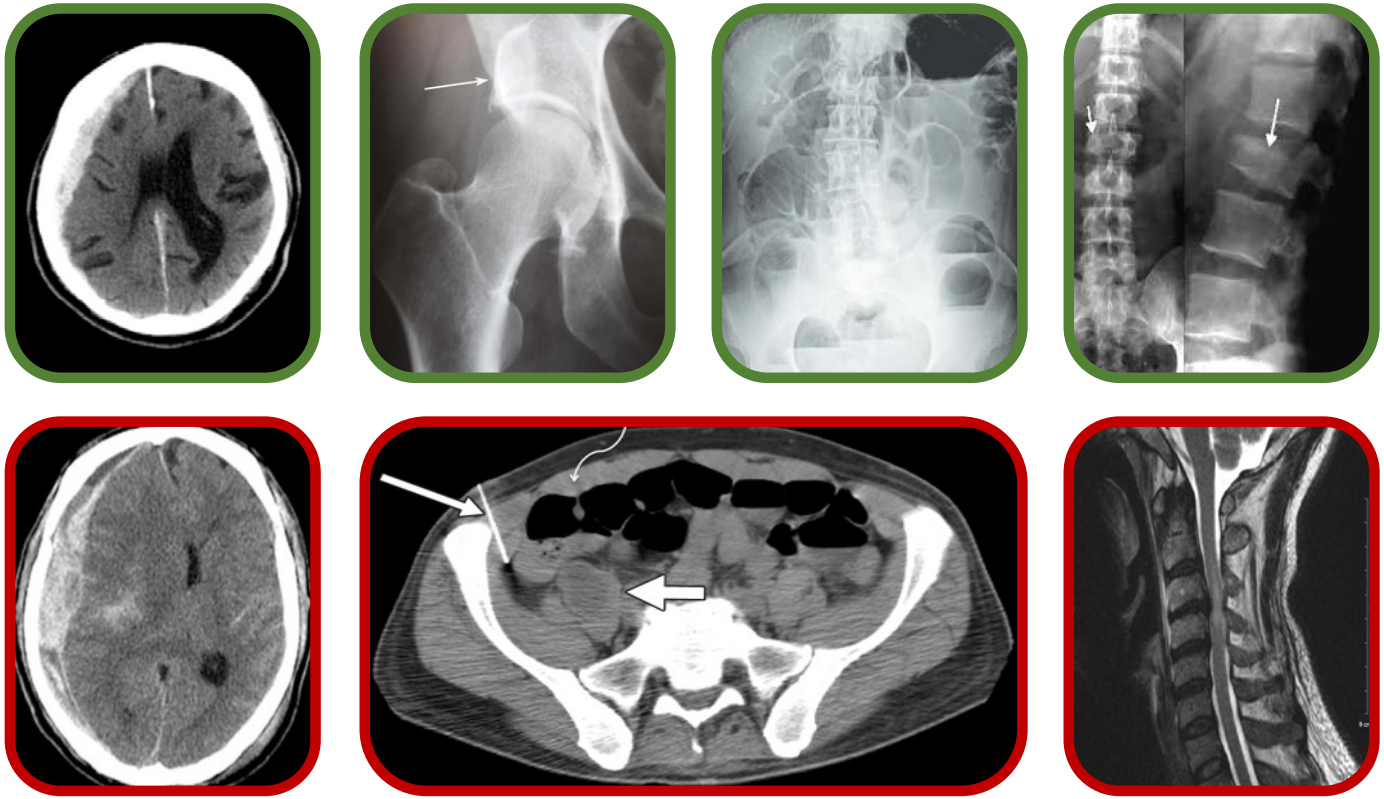
Fig. 2 Association between frailty scale and 30-day outcome

Flaatten et al. Intensive Care Med 2017;43:1820-28

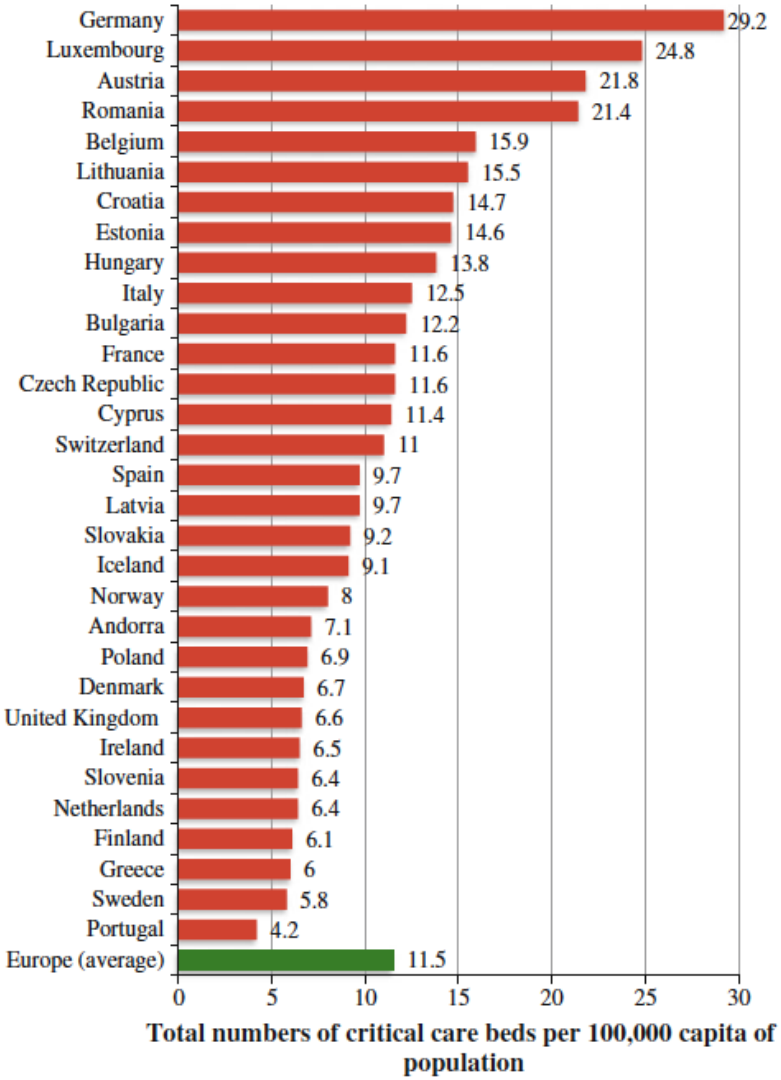
Triageprozess IPS (Modell)



Der ältere Traumapatient



Systemunterschiede



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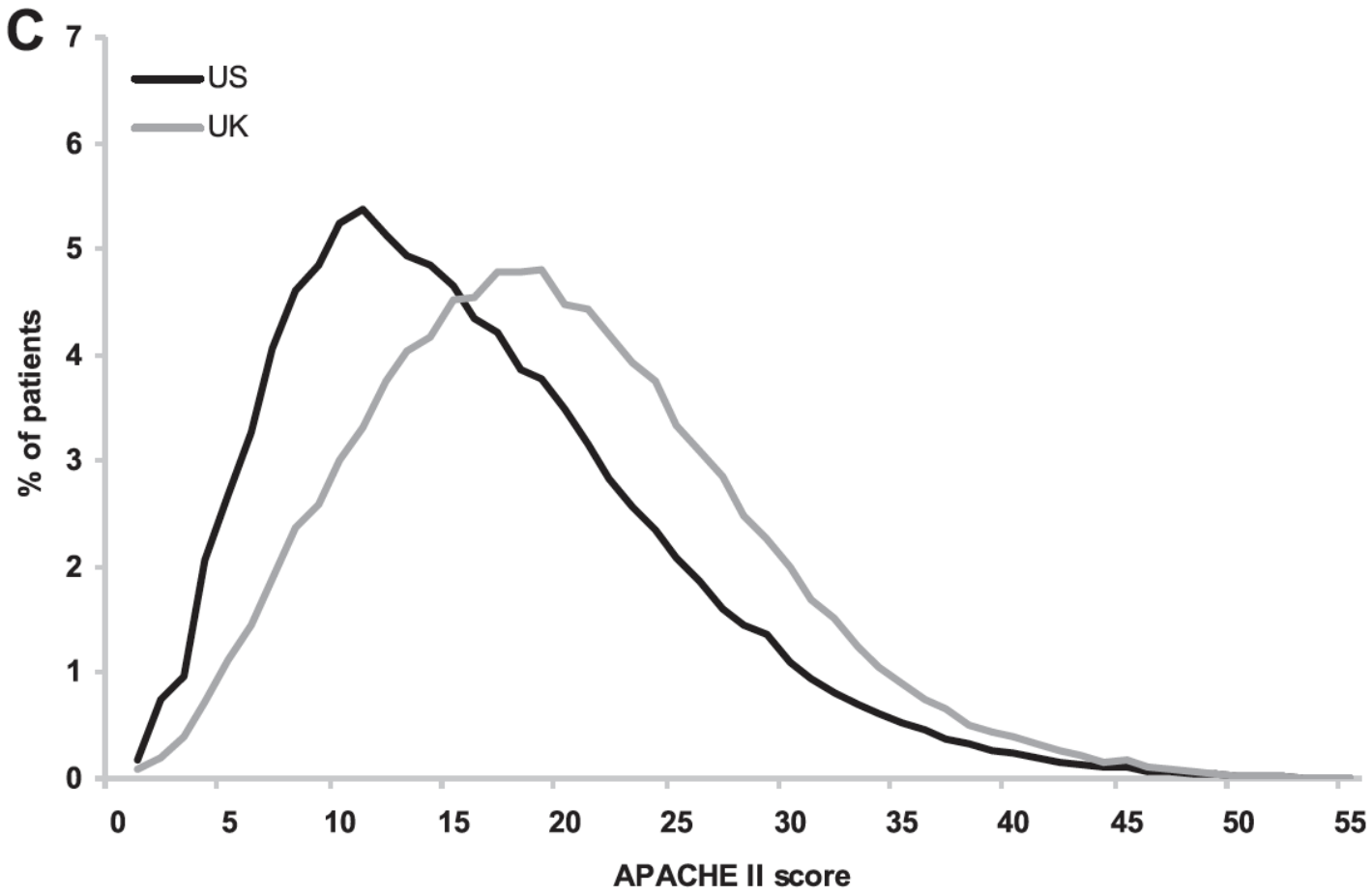
Systemunterschiede



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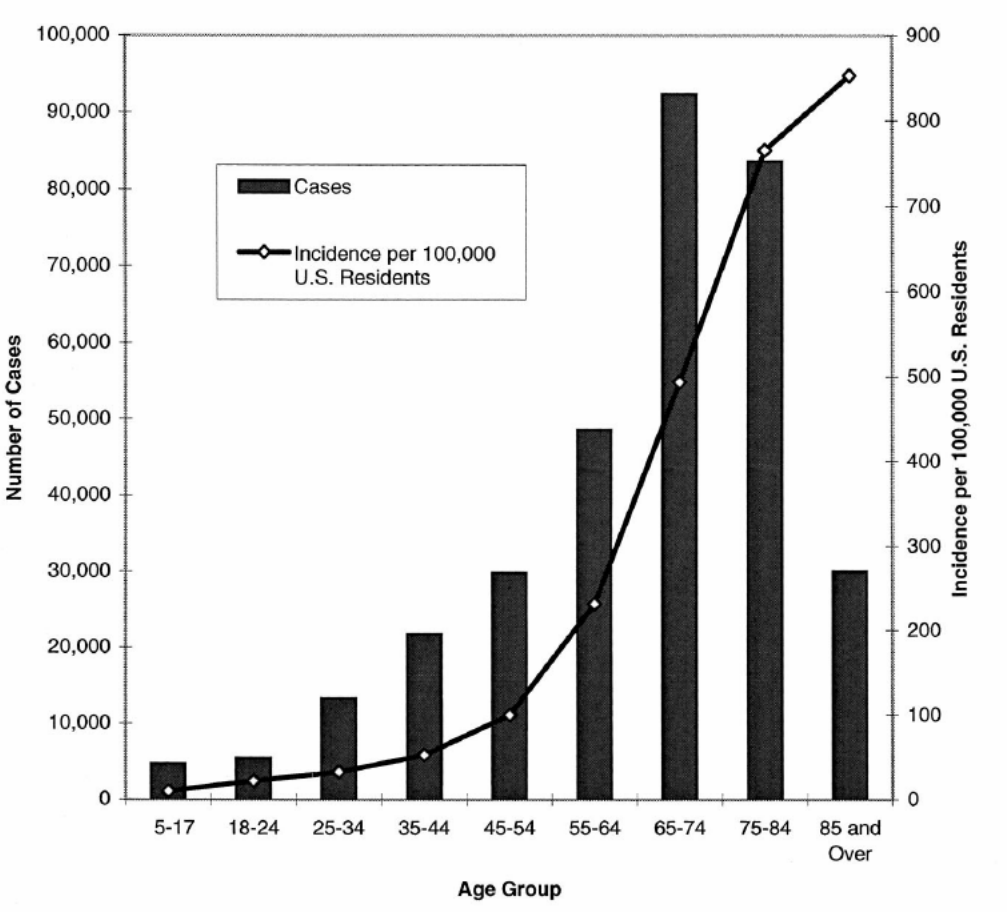
Systemunterschiede

Cases and incidence of ARF in the United States, 1994, by age



Behrendt CE CHEST 2000;118:1100-05

Conclusions

- Aktuelle demographische Entwicklungen erfordern eine Intensivmedizinische Triage älterer Patienten
- Systematische Prozesse erlauben zeitnahes, fachgerechtes, patientenzentriertes Assessment
- Limitierte Resourcen: Entscheidung „vor Ort“
- Zukünftige Entwicklungen:
  - Prognoserelevante Scoring-Systeme
  - Geriatrische Therapiekonzepte (Geriatric ICU/IMC)
  - Klinische Studien: adaptiert an lokale Prozesse, ICU vs. non-ICU, differenzierte Methodik bei ausgeprägter Heterogenität