Indikace k přijetí na jednotku intenzívní péče – pohled intenzivisty

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Nejsem v konfliktu zájmů

FN Ostrava:

- vysokoprahový UP
- 106 lůžek ARO/JIP pro dospělé (KARIM 24)

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Definice problému

1. vysoká obsazenost a nedostupnost lůžek ARO/JIP

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= odkládání elektivních výkonů… i výkonů akutních!

*„As a result, intensive care is an expensive and **high-demand resource** as of December 2019 there were approximately 4100 intensive care beds with an occupancy rate which regularly rises above 80%. The high demand on intensive care is shown by the cancellation of elective surgical procedures and in **December 2019 alone, 330 urgent procedures were cancelled due to lack of available intensive care bed**.“*

Stretch B, Surgery 2020

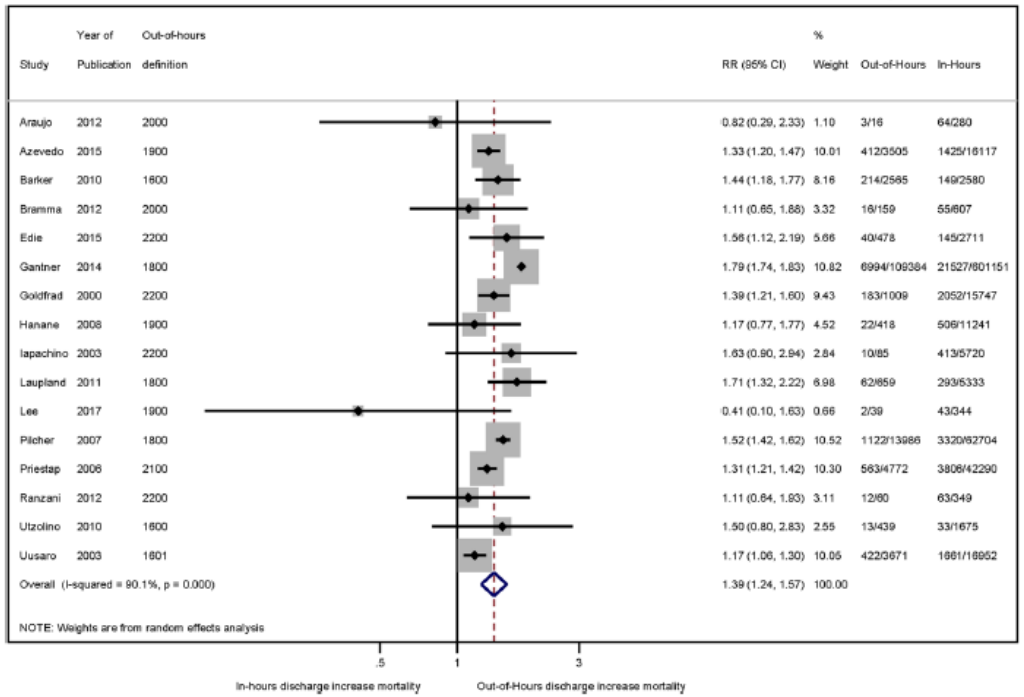
Definice problému

1. vysoká obsazenost a akutní nedostupnost lůžek ARO/JIP

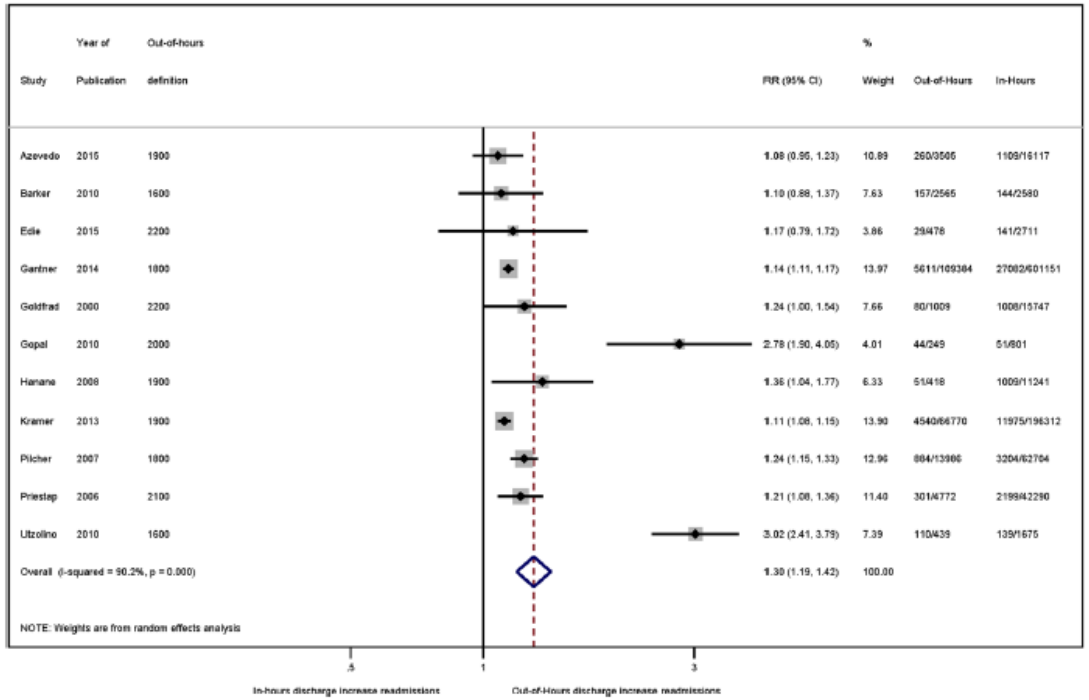
= „předčasné“ překlady pacientů

Out-of-hours discharge from intensive care, in-hospital mortality and intensive care readmission rates: a systematic review and meta-analysis

Impact of Out-of-hours Discharge on Mortality



Impact of Out-of-hours Discharge on Readmissions



…patients discharged out of hours had higher in-hospital mortality [relative risk (95% CI) 1.39 (1.24, 1.57) p < 0.0001] and readmission rates [1·30 (1.19, 1.42), p < 0.001] than patients discharged in hours.

Vollam S, Intensive Care Med 2018

Definice problému

2. vysoké ekonomické náklady

Growth of intensive care unit resource use and its estimated cost in Medicare*

Critically ill patients consume significant resources, reportedly as much as 14% of inpatient days, 1% of the gross domestic product, and 20% of hospital costs in the United States (1–6).

Milbrandt EB, Critical Care Medicine 2008

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1994-2004: nárůst nákladů na intenzivní péči o 36% !

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Milbrandt EB, Critical Care Medicine 2008

Cost comparisons and factors related to cost per stay in intensive care units in Belgium

- medián nákladů na hospitalizaci na ICU: €2,160 [1,545–3,221] / den na ICU
- hlavní faktory asociované s výškou nákladů:
  - Charlson score
  - kóma / křečové stavy / intoxikace
  - UPV, RRT, ECMO
  - hospitalizace v „academic hospital“
  - readmisie, úmrtí

Bruyneel A, BMC Health Service Research 2023

Definice problému

3. ICU jako „hospic“ pro pacienty v terminálním stádiu nemoci

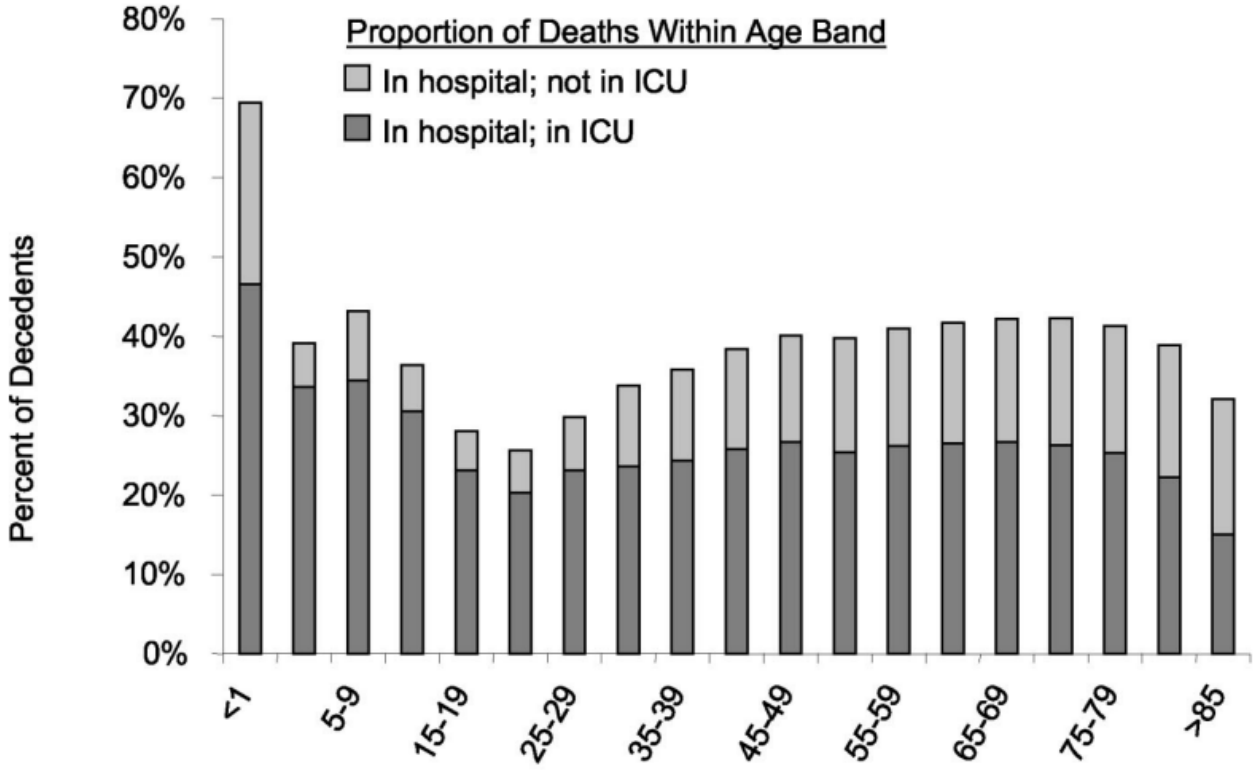
Use of intensive care at the end of life in the United States: An epidemiologic study*

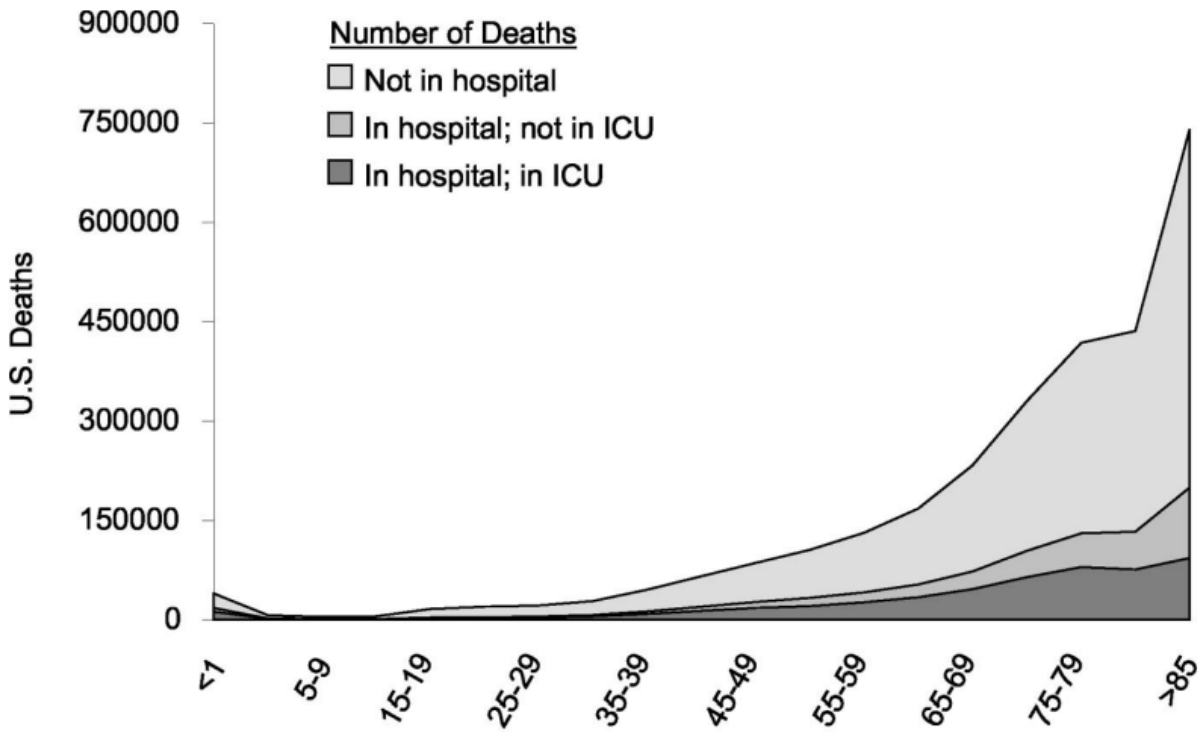
Table 1. Population, mortality, hospital, and intensive care unit (ICU) utilization in 1999

Variable	Six-State Sample	United States
Total population	60,255,699	272,691,000
Total hospitalizations[a]	8,208,848	35,938,367[b]
Total hospitalizations with intensive care[a]	1,585,443	6,725,259[b]
Deaths	552,157	2,391,399
Deaths in the hospital	211,273	917,204[b]
Deaths after ICU admission	123,723	540,132[b]

„We found that there were 552,157 deaths in the six states in 1999,
*of which **38.3% occurred in hospital** and **22.4% occurred after ICU admission**.*
Using these data to project nationwide estimates,
540,000 people die after ICU admission each year

Angus DC, Critical Care Medicine 2003





Angus DC, Critical Care Medicine 2003

Triage decisions for ICU admission: Report from the Task Force of the World Federation of Societies of Intensive and Critical Care Medicine

Torra LB, Journal of Critical Care 2016

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

Nates JL, Critical Care Medicine 2016

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

Level of Care	Priority	Type of Patient
ICU	Priority 1	Critically ill patients who require life support for organ failure, intensive monitoring, and therapies only provided in the ICU environment. Life support includes invasive ventilation, continuous renal replacement therapies, invasive hemodynamic monitoring to direct aggressive hemodynamic interventions, extracorporeal membrane oxygenation, intraaortic balloon pumps, and other situations requiring critical care (e.g., patients with severe hypoxemia or in shock)
	Priority 2	Patients, as described above, with significantly lower probability of recovery and who would like to receive intensive care therapies but not cardiopulmonary resuscitation in case of cardiac arrest (e.g., patients with metastatic cancer and respiratory failure secondary to pneumonia or in septic shock requiring vasopressors)
IMU	Priority 3	Patients with organ dysfunction who require intensive monitoring and/or therapies (e.g., noninvasive ventilation), or who, in the clinical opinion of the triaging physician, could be managed at a lower level of care than the ICU (e.g., postoperative patients who require close monitoring for risk of deterioration or require intense postoperative care, patients with respiratory insufficiency tolerating intermittent noninvasive ventilation). These patients may need to be admitted to the ICU if early management fails to prevent deterioration or there is no IMU capability in the hospital
	Priority 4	Patients, as described above but with lower probability of recovery/survival (e.g., patients with underlying metastatic disease) who do not want to be intubated or resuscitated. As above, if the hospital does not have IMU capability, these patients could be considered for ICU in special circumstances
Palliative care	Priority 5	Terminal or moribund patients with no possibility of recovery; such patients are in general not appropriate for ICU admission (unless they are potential organ donors). In cases in which individuals have unequivocally declined intensive care therapies or have irreversible processes such as metastatic cancer with no additional chemotherapy or radiation therapy options, palliative care should be initially offered

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„Prompt diagnosis and treatment are essential for critically ill patients, especially those who are neurologically decompensated or hemodynamically unstable and those who have signs of impaired tissue perfusion and oxygenation.
***Delayed ICU admission** from the ward or emergency department may **increase the risk of death**“*

Nates JL, Critical Care Medicine 2016

Základní pravidla příjmu na ICU

- identifikace intervencí které můžou být prováděny pouze na ICU
- personál kompetentní k poskytování výkonů intenzivní péče
- timing – minimalizování prodlev při umístění na lůžko IP!
- hodnocení objektivních a objektivizovatelných parametrů
- CAVE – limitovaná výpovědní hodnota skórovacích systémů!

*„Scoring systems may produce **inaccurate, invalid or non-transferable data** for a number of reasons. Firstly, a patient's high severity of physiological disturbance on admission may **respond** well to resuscitation, whereas some patients will die despite optimum treatment. Scoring systems do not measure **physiological reserve** which is determined by baseline functional status, biological age and extent of comorbidities. The underlying disease process causing critical illness is not taken into account, which is important when considering the **clinical trajectory** of a patient.„*

Základní pravidla příjmu na ICU

- prioritizace pacientů podle stavu, diagnozy a dostupnosti lůžek
- CAVE – „boarding“ (umístění pacienta na lůžko jiné specializace než je diagnoza vede ke zhoršení outcome!)
- zjevný potenciální benefit z postupů IP
- prognóza, autonomie pacienta
- CAVE **– ICU je prostředí vysoce stresující**! – riziko agresivního „overtreatmentu“, expozice nosokomiálním infekcím, psychickému dyskomfortu – akutní zhoršení kognitivních funkcí, PTSD...
- **etické aspekty** (eliminace diskriminace, vyhnout se over- and under-triage)


AUTONOMY
BENEFICENCE
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PILLARS OF MEDICAL
ETHICS

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„Patients who are very likely to die after ICU admission and those who will recover with care outside the ICU **should not be admitted**!“

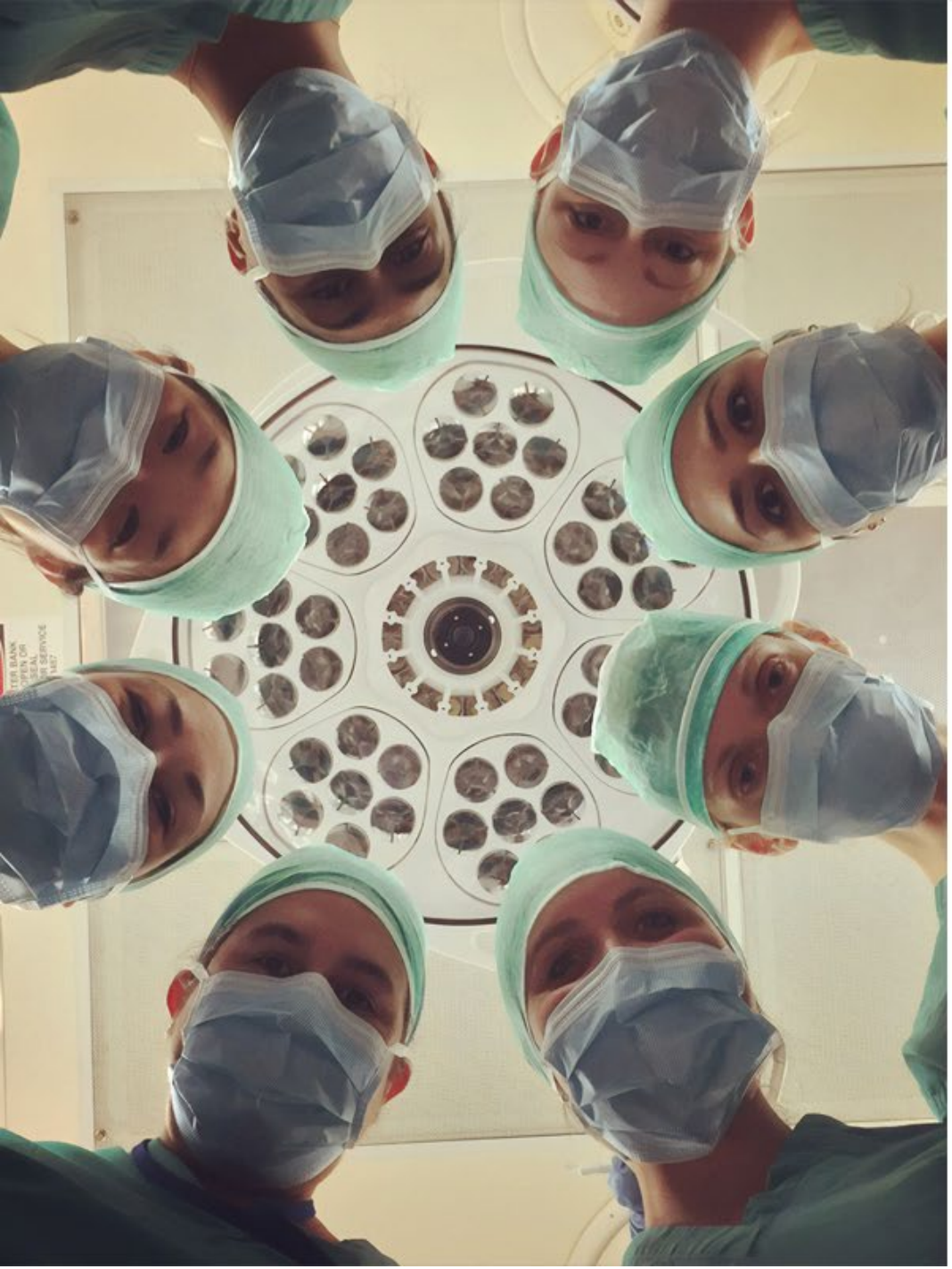
ICU bez bariér

Medical Emergency Team (MET), Rapid Response Team (RRT) a pod.

- edukace personálu standardních oddělení
- „insider“ z řad lékařů
- metaanalýza klinických studií zabývajících se efektivitou MET/RRT: *„Implementation of an RRT/MET was associated with a **significant decrease in hospital mortality** (relative risk [RR] 0.88, 95% confidence interval [CI]: 0.83-0.93, I2 5 86%, 3,478,952 admissions) and a **significant decrease in the number of non-ICU cardiac arrests** (RR 0.62, 95% CI:0.55-0.69, I2 5 71%, 3,045,273 admissions).„ (*Solomon RS, Journal of Hospital Medicine 2016*)*

Co musíme (i můžeme) udělat?

1. Kultura vnímání zdravotního systému populací
2. Vnímání stáří a umírání jako přirozených procesů
3. Komunikace – znalost priorit pacienta
4. **Eliminace alibismu na všech úrovních zdravotního systému při rozhodování o EOLD**
5. **MET / RRT = vzdělávání kolegů z jiných oborů, obecné povědomí zdravotníků o varovných příznacích vyžadujících neodkladnou konzultaci intenzivisty !**
6. Plánování následné péče



"Why is a doctor always calm? They have a lot of patients"