AER
ACTUALITÉS EN RÉANIMATION

Choc septique

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ASSISTANCE PUBLIQUE HÔPITAUX DE PARIS

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Liens d’intérêt

- **Mundipharma**
- **Viatris**


48.9 MILLION CASES
11 MILLION DEATHS
1 IN EVERY 5
DEATHS WORLDWIDE
ARE ASSOCIATED
WITH SEPSIS
85% OCCUR IN
LOW- OR
MIDDLE-INCOME
COUNTRIES
2 OUT OF
EVERY 5 CASES
ARE IN CHILDREN
UNDER 5

PubMed®

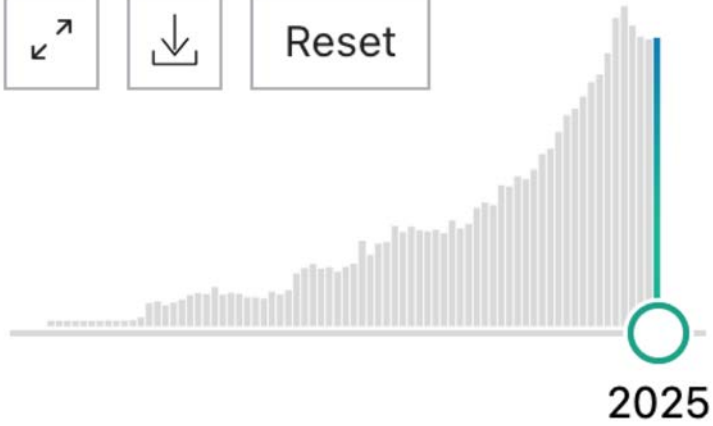
septic shock

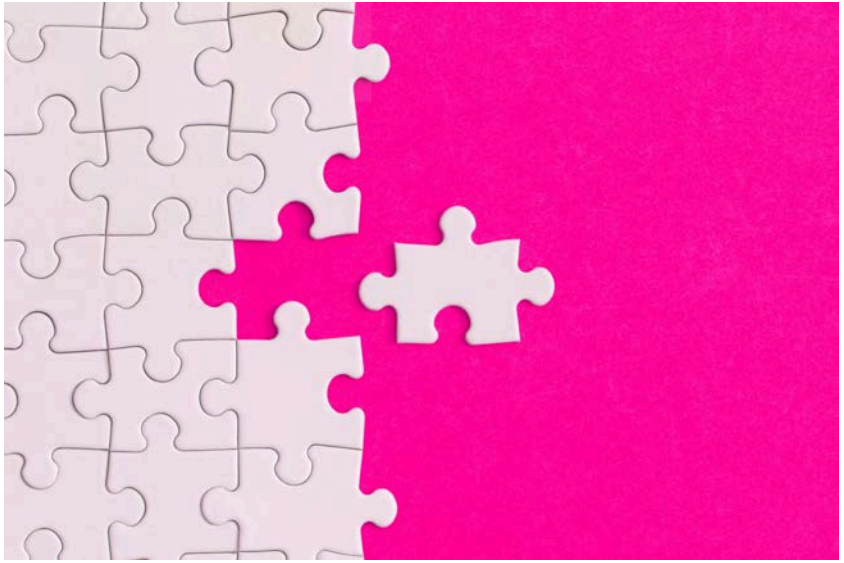
Advanced Create alert

2,069 results

RESULTS BY YEAR

Reset





c'est mon choix.

nature medicine

Article

https://doi.org/10.1038/s41591-025-03956-5

A consensus immune dysregulation framework for sepsis and critical illnesses

nature medicine

Article

https://doi.org/10.1038/s41591-025-03964-5

A consensus blood transcriptomic framework for sepsis

Emergency Medicine Practice

Evidence-Based Education
Practical Application

Updates and Controversies in the Early Management of Sepsis and Septic Shock (Infectious Disease CME and Pharmacc

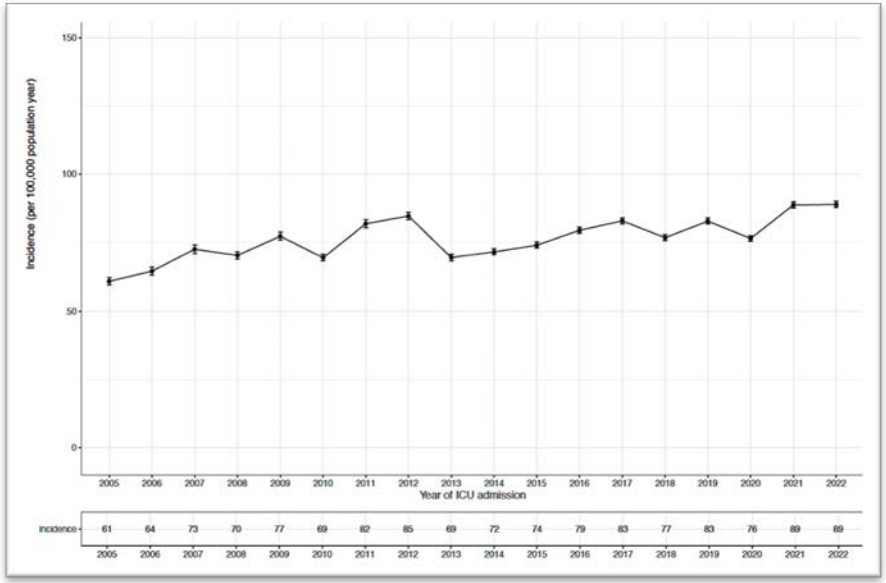
Insights Into the Pathophysiology of Catecholamine-Refractory Shock: A Narrative Review

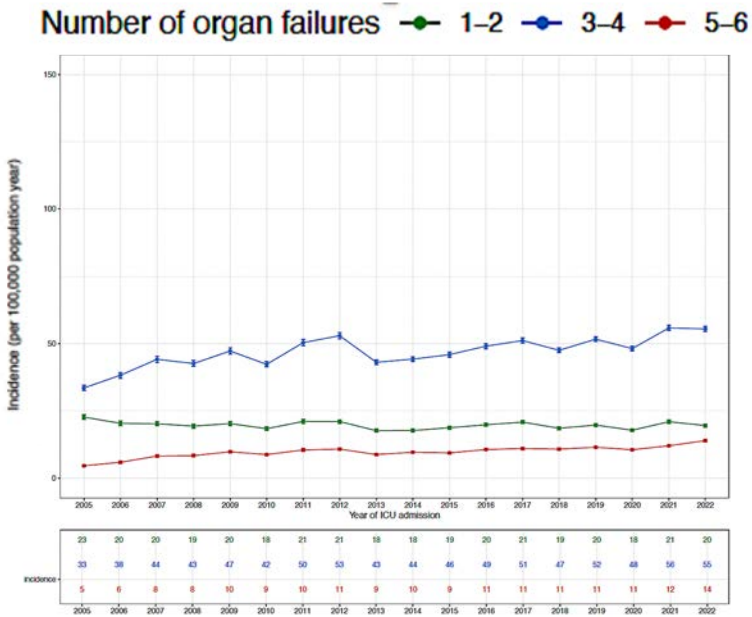
Ana Gonçalves [1], Filipa Gonçalves Pereira [2], Susana Fernandes [2, 3], João Gonçalves Pereira [1, 2]


Epidemiology

Mortality trends for sepsis and septic shock among critically ill adults in Australia and New Zealand

01/2000 → 06/2023 in 219 ICU
2,189,872 eligible ICU admissions → 303,389 sepsis-3 patients **13,9%**



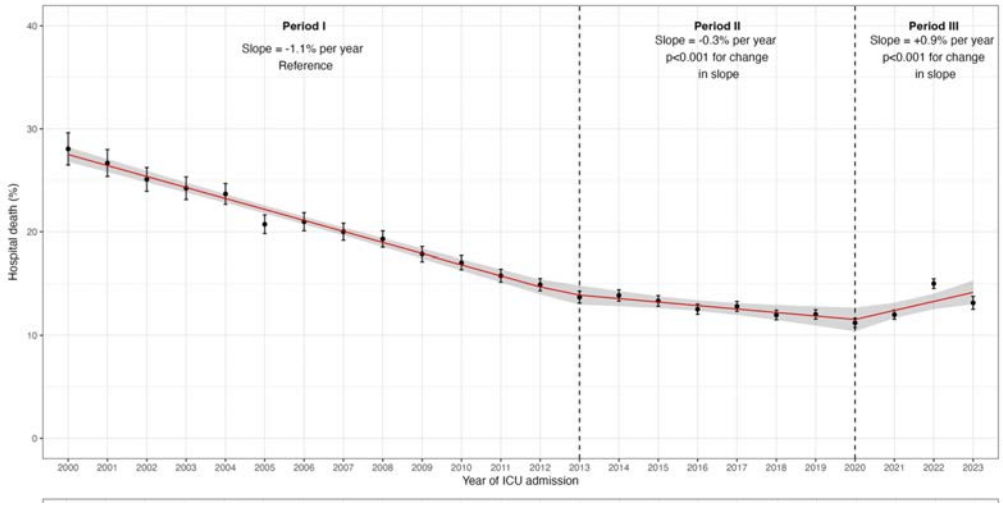


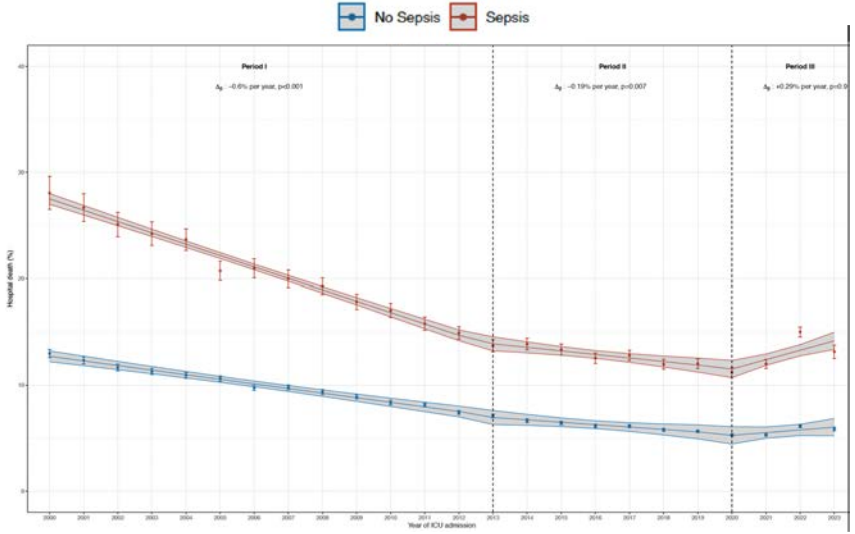
Medical sepsis: 75%

AP Poole, Intensive Care Med 2025

Mortality trends for sepsis and septic shock among critically ill adults in Australia and New Zealand

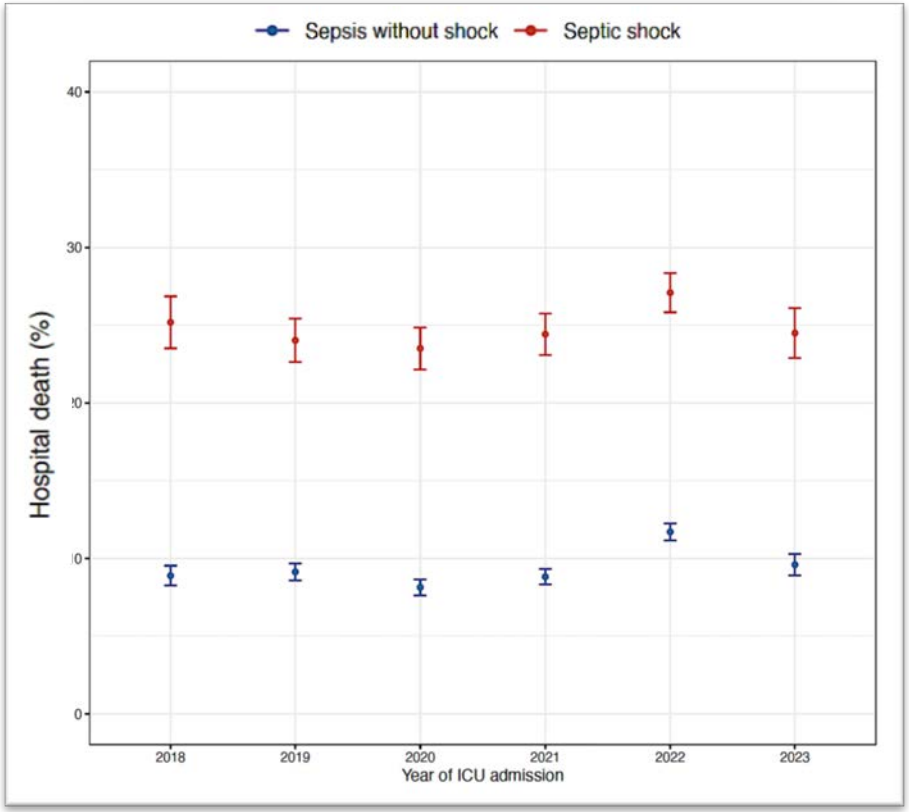
Mortality





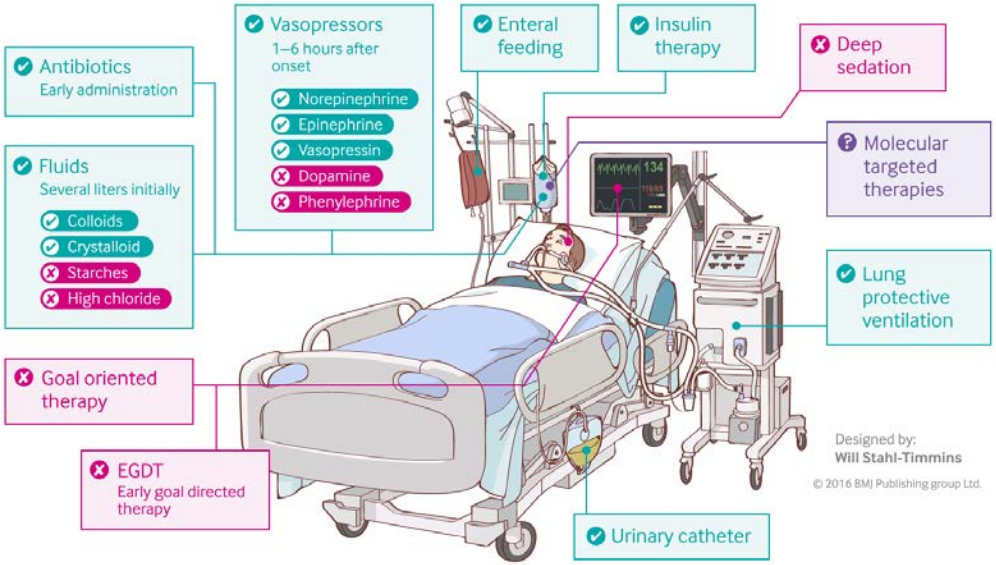
AP Poole, Intensive Care Med 2025

Mortality trends for sepsis and septic shock among critically ill adults in Australia and New Zealand

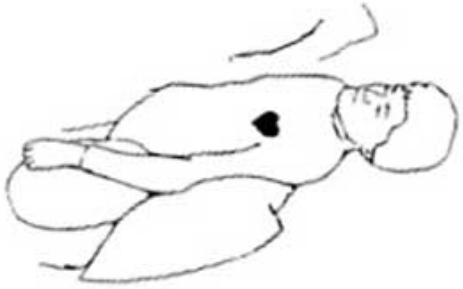


AP Poole, Intensive Care Med 2025

Treating sepsis: the latest evidence



CAPILLARY REFILL TIME (CRT)



STEP 1*: Place hand at heart level

STEP 2: Blanch the skin of the index finger for 10 seconds (use a microscope slide if available)

STEP 3: Release and time the skin's return to baseline color; > 3 seconds is abnormal

*Derived from ANDROMEDA-SHOCK trial

WHAT

CRT measures global and local tissue perfusion

HOW

CRT captures the degree of sympathetic activation and systemic inflammation in a perfusion crisis

WHY

Hemodynamic incoherence in septic shock obscures the relationship between blood pressure/cardiac output and tissue perfusion

FUTURE DIRECTIONS

Using CRT to guide resuscitation improves and individualizes septic shock management

Effect of a Resuscitation Strategy Targeting Peripheral Perfusion Status vs Serum Lactate Levels on 28-Day Mortality Among Patients With Septic Shock

The ANDROMEDA-SHOCK Randomized Clinical Trial

JAMA Network

QUESTION Does a resuscitation strategy targeting normalization of capillary refill time, compared with targeting serum lactate levels, reduce mortality in patients with septic shock?

CONCLUSION This randomized clinical trial of adults with septic shock found that use of a peripheral perfusion-targeted resuscitation strategy, compared with targeting serum lactate, did not significantly reduce mortality.

POPULATION

198 Men 226 Women

Adults in the ICU with septic shock

Mean age: 63 years

LOCATIONS

28 ICUs in 5 countries in South America

INTERVENTION

424 Patients randomized

212 **Peripheral perfusion group**

Resuscitation protocol of normalizing capillary refill time (measured in seconds)

212 **Lactate group**

Resuscitation protocol of normalizing or decreasing lactate levels (>20% per 2 hours)

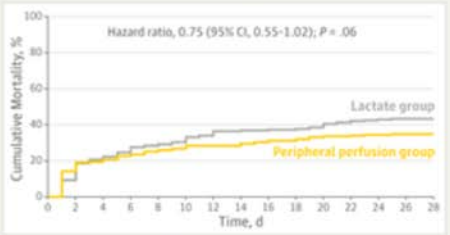
PRIMARY OUTCOME

All-cause mortality at 28 days

FINDINGS

All-cause mortality at 28 days

Peripheral perfusion group	Lactate group
34.9% (74 patients died)	43.4% (92 patients died)



No significant risk difference between groups:

-8.5% (95% CI, -18.2% to 1.2%),

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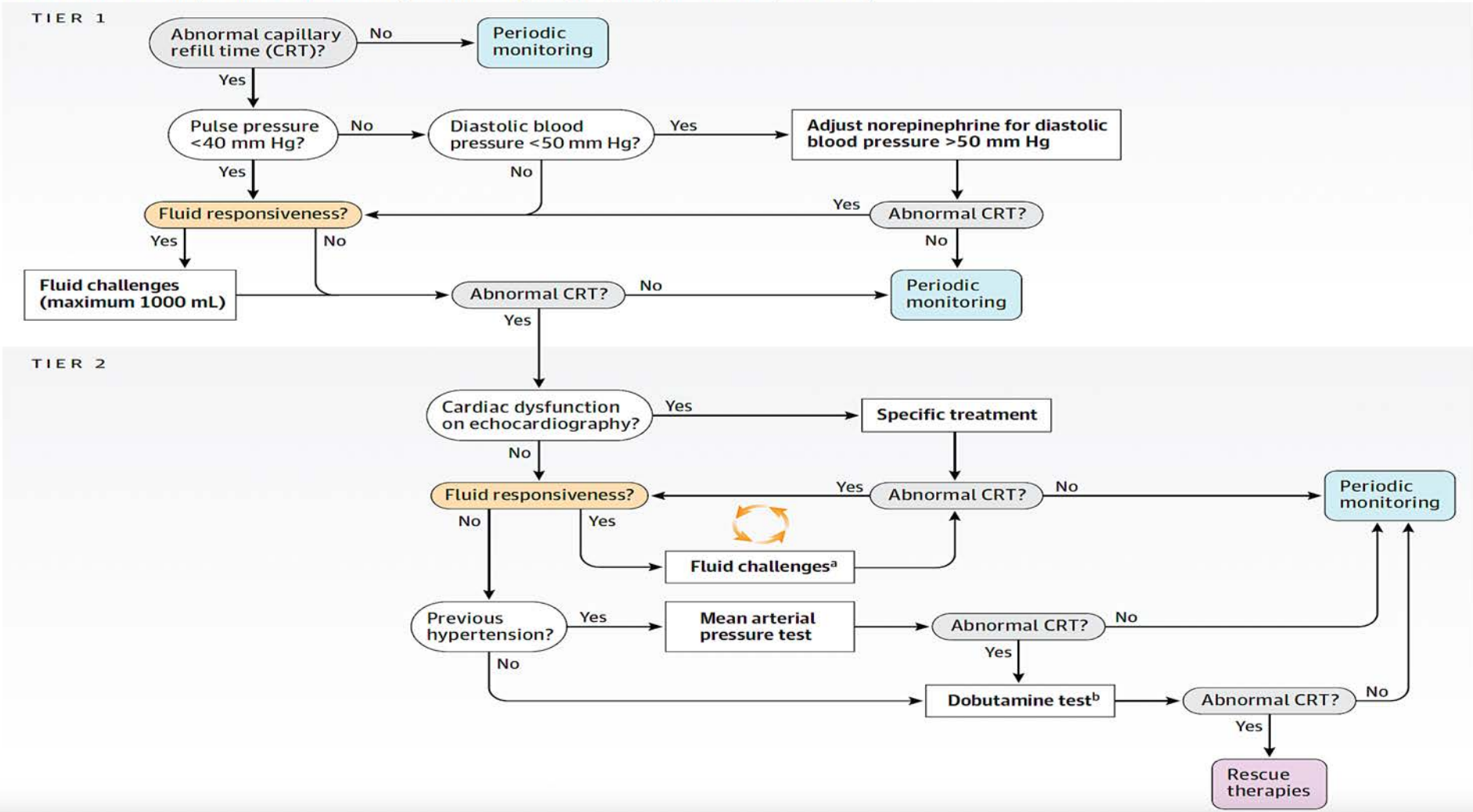
Hernández G, Ospina-Tascón GA, Petri Damiani L, et al. Effect of a resuscitation strategy targeting peripheral perfusion status vs serum lactate levels on 28-day mortality among patients with septic shock: the ANDROMEDA-SHOCK randomized clinical trial [published February 17, 2019]. *JAMA*. doi:10.1001/jama.2019.0071

Faster recovery of organ dysfunction

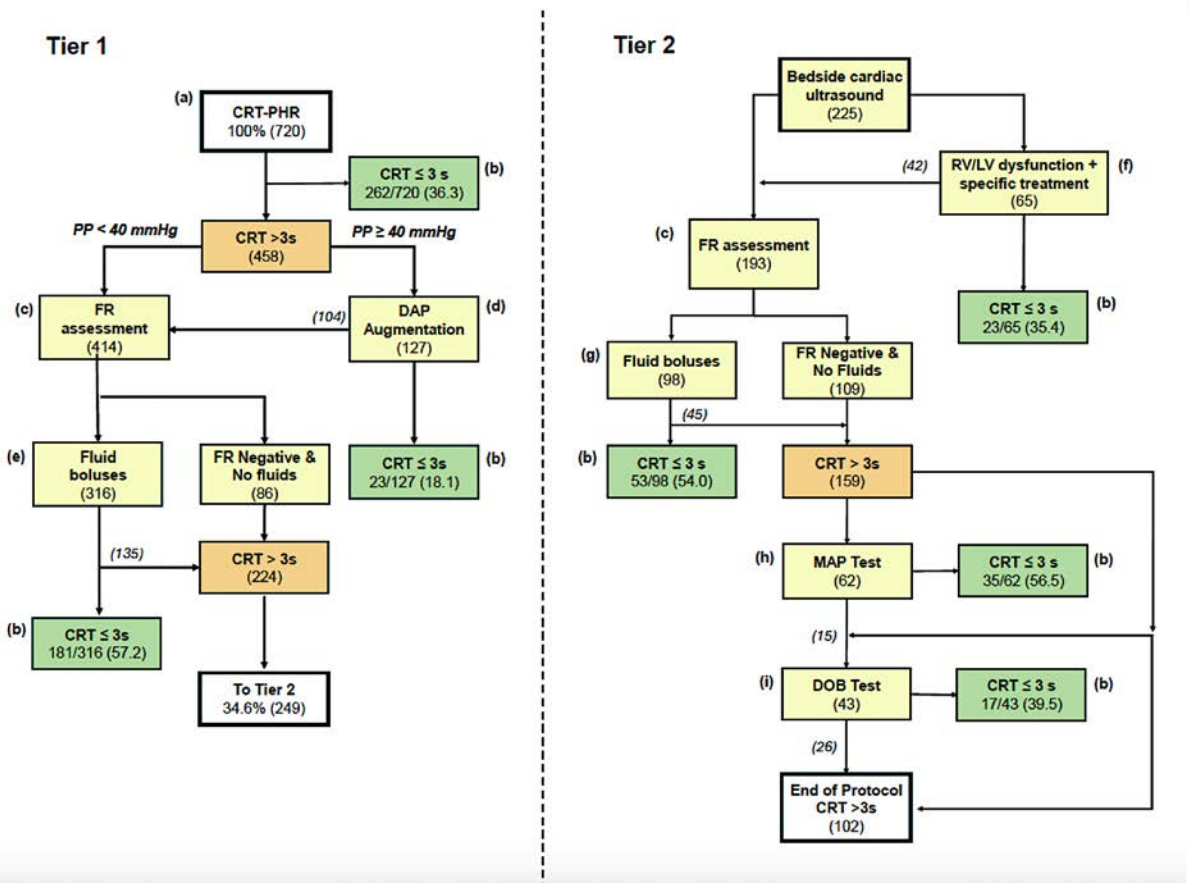
Less fluid administration

Hernandez G. JAMA 2019; 321: 654

Personalized hemodynamic resuscitation protocol targeting capillary refill time (CRT-PHR)



Personalized Hemodynamic Resuscitation Targeting Capillary Refill Time in Early Septic Shock
The ANDROMEDA-SHOCK-2 Randomized Clinical Trial



At 6H, normalization of CRT:
- **86 % CRT-PHR group**
- **62 % Control group**

JAMA

QUESTION Does a personalized hemodynamic resuscitation strategy targeting capillary refill time improve outcomes in patients with early septic shock vs usual care?

CONCLUSION In patients with early septic shock, a personalized hemodynamic resuscitation protocol targeting capillary refill time (CRT-PHR) was superior to usual care.

POPULATION

831 Men **636** Women

Adults 18 years or older with septic shock

Mean age: **66** years

LOCATIONS

86
Sites in
19 countries

INTERVENTION

1501 Patients randomized
1467 Patients analyzed

720
CRT-PHR
Underwent PHR targeted at normalizing CRT over a 6-hour period

747
Usual care
Treated according to local protocols or international guidelines over a 6-hour period

PRIMARY OUTCOME

Hierarchical composite outcome: all-cause mortality, duration of vital support, and length of hospital stay at 28 days as an overall win ratio

FINDINGS

Total No. of wins

CRT-PHR	Usual care
131 131 (48.9%)	112 787 (42.1%)

CRT-PHR was superior to usual care:

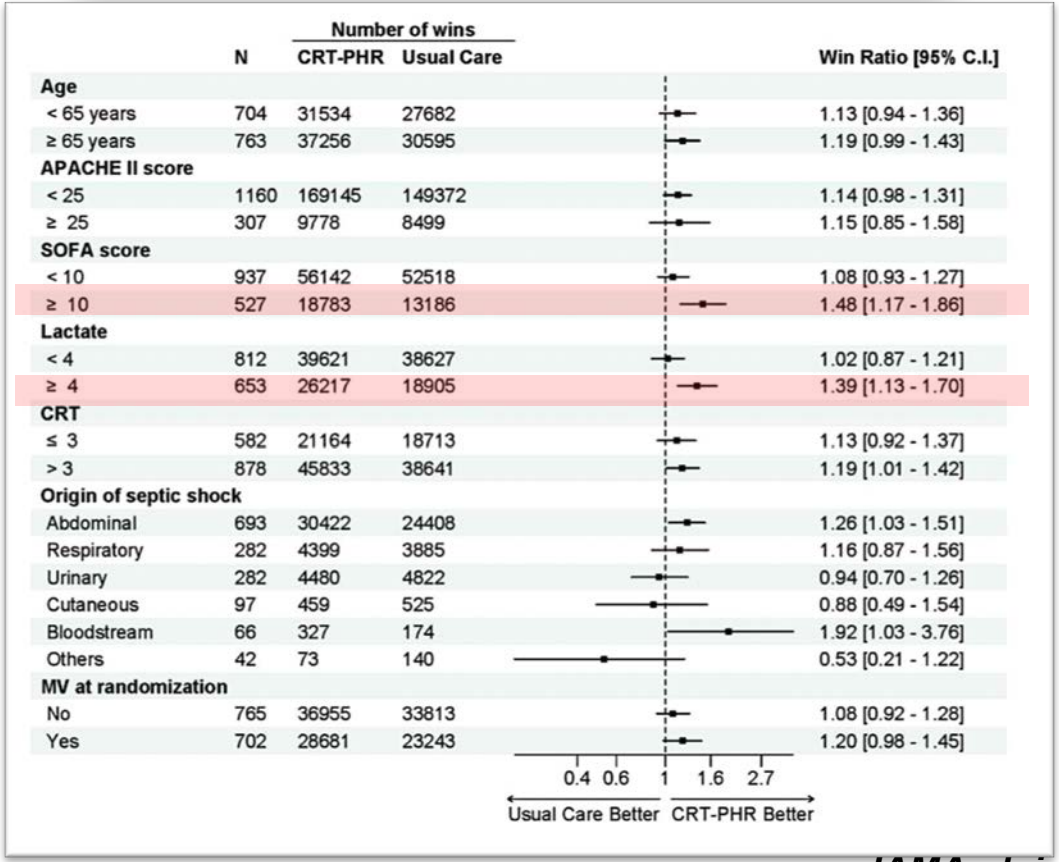
Win ratio, 1.16

(95% CI, 1.02 to 1.33; *P* = .04)

© AMA

The ANDROMEDA-SHOCK-2 Investigators. Personalized hemodynamic resuscitation targeting capillary refill time in early septic shock. *JAMA*.
Published online October 29, 2025. doi:10.1001/jama.2025.20402

Personalized Hemodynamic Resuscitation Targeting Capillary Refill Time in Early Septic Shock
The ANDROMEDA-SHOCK-2 Randomized Clinical Trial



JAMA. doi:10.1001/jama.2025.20402

Personalized Hemodynamic Resuscitation Targeting Capillary Refill Time in Early Septic Shock
The ANDROMEDA-SHOCK-2 Randomized Clinical Trial

Outcome	CRT-PHR group (n = 720)	Usual care group (n = 747)	Effect estimate (95% CI)	*P* value
Primary outcome through 28 d, total No. of wins (%)				
Hierarchical composite of death, duration of vital support, and length of hospital stay[a]	131 131 (48.9)	112 787 (42.1)	SWR, 1.16 (1.02 to 1.33)	.04
Secondary outcomes				
All-cause mortality within 28 d, No. (%)[b]	191 (26.5)	199 (26.6)	HR, 0.99 (0.81 to 1.21)	.91
Vital support–free days within 28 d[c]				
Mean (SD)	16.5 (11.3)	15.4 (11.4)	pOR, 1.28 (1.06 to 1.54)	NA
Median (IQR)	23.0 (0 to 25.0)	22.0 (0 to 25.0)		
Length of hospital stay up to day 28, d[d]				
Mean (SD)	15.3 (9.0)	16.2 (9.4)	MD, −0.85 (−1.80 to 0.10)	NA
Median (IQR)	13.0 (8.0 to 25.0)	15.0 (8.0 to 28.0)		

JAMA. doi:10.1001/jama.2025.20402

Minimally Invasive Resuscitation

Septic shock patients

- No sedation
- Non invasive ventilation
- High-flow nasal cannula
- Delayed hemodialysis
- Green ICU
- …

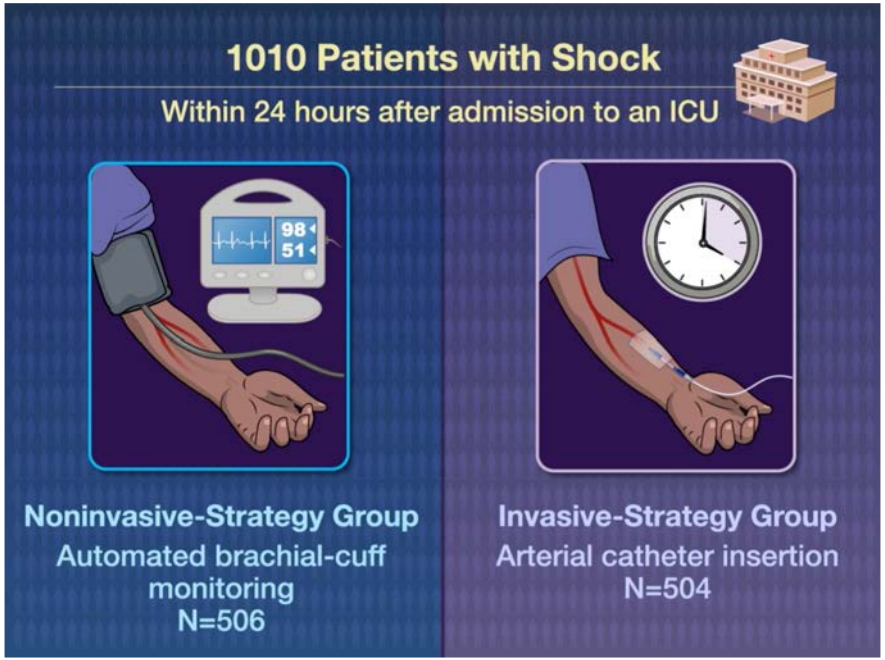
ESICM guidelines on circulatory shock and hemodynamic monitoring 2025

Question 3.3. When and how should one monitor arterial pressure in shock?

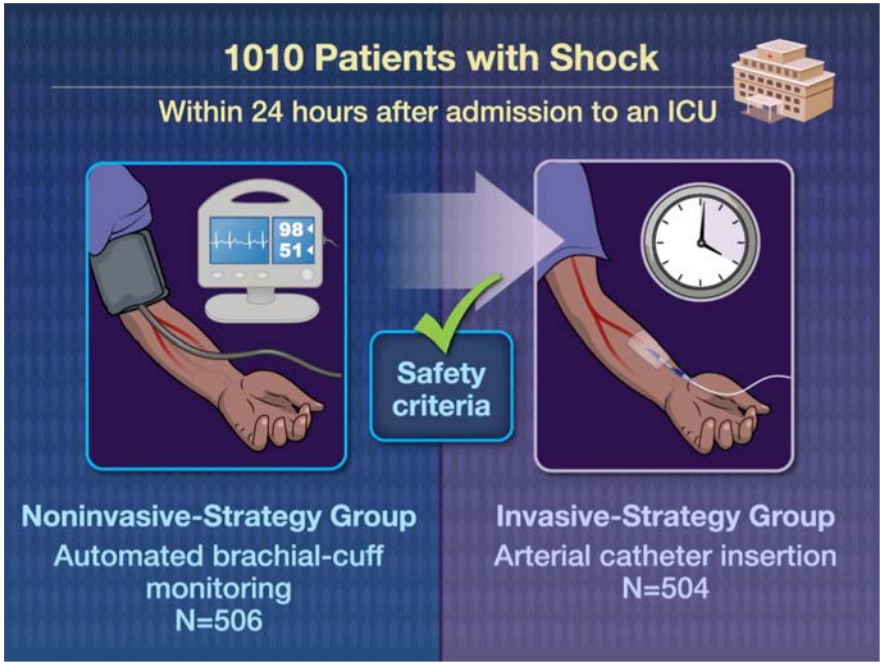
Recommendations 3.3
36. Arterial pressure should be monitored in patients with shock.
Ungraded good practice statement/Ungraded evidence/Strong agreement
37. Arterial pressure should be monitored with an arterial catheter in shock that is not responsive to initial therapy and/or requiring vasopressor infusion.
Ungraded good practice statement/Ungraded evidence/Strong agreement

Monnet X. Intensive Care Med 2025

Deferring Arterial Catheterization in Critically Ill Patients with Shock



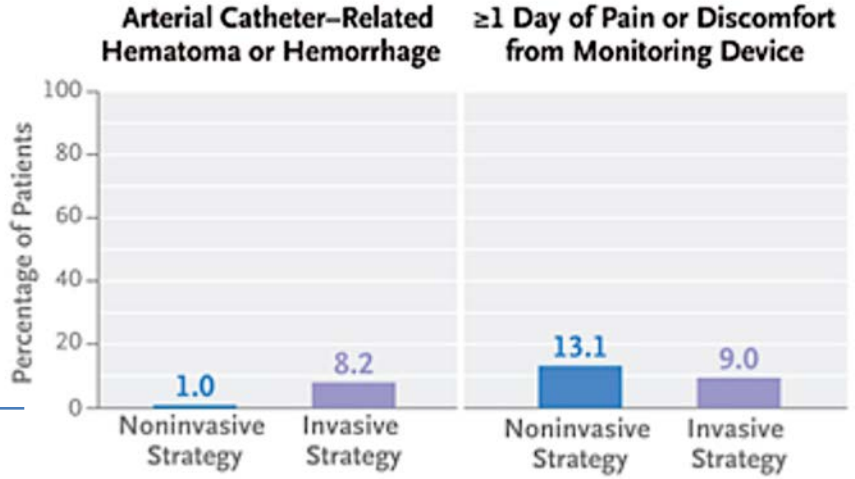
54% septic shock



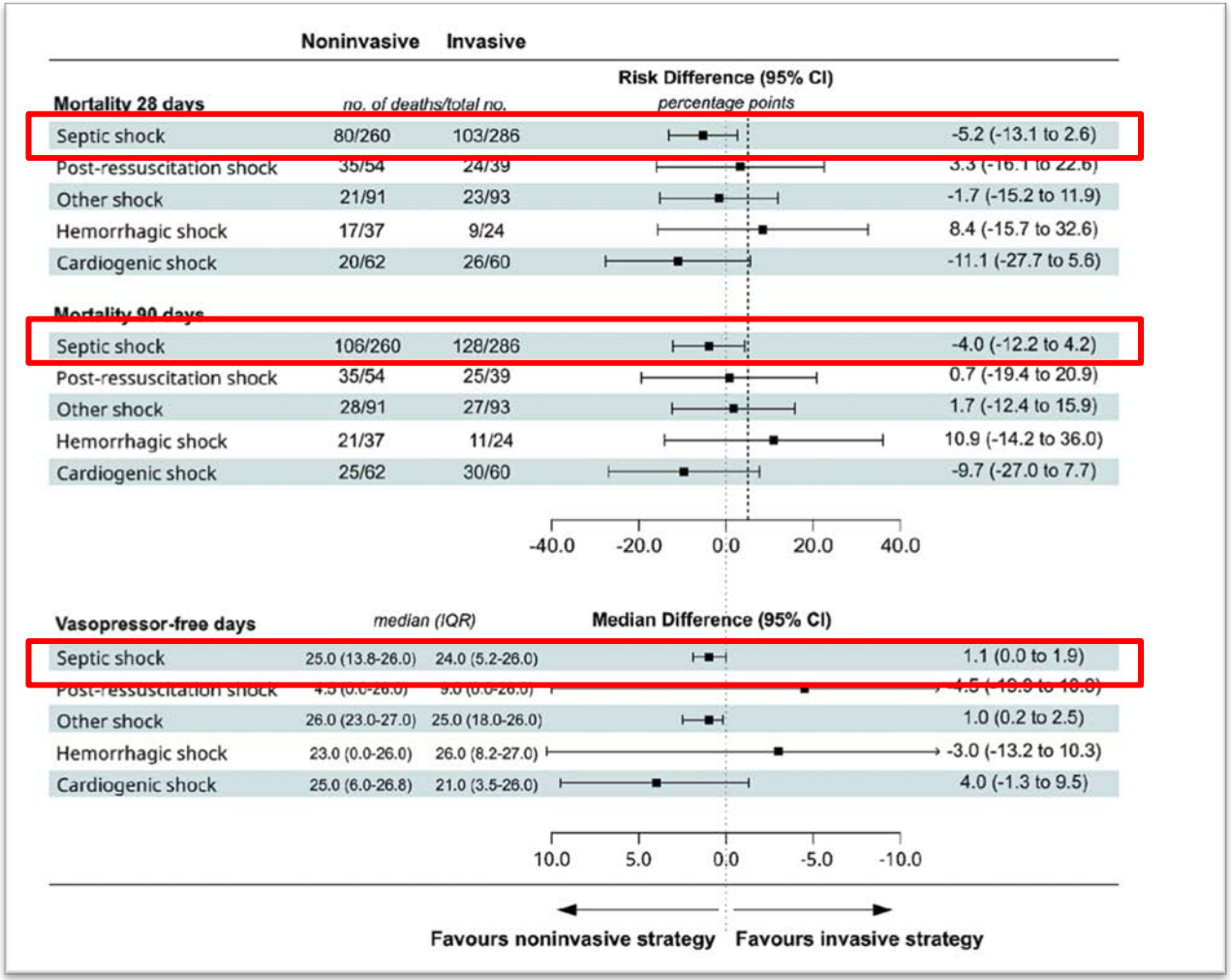
14,7%

Muller G. N Engl J Med 2025;393:1875

Deferring Arterial Catheterization in Critically Ill Patients with Shock



Muller G. N Engl J Med 2025;393:1875



Muller G. N Engl J Med 2025;393:1875

Peripheral Vasopressor Use in Early Sepsis-Induced Hypotension

CONCLUSIONS AND RELEVANCE:

In this prospective cohort study of the CLOVERS trial, peripheral administration of vasopressors was common and was associated with low complication rates.

These findings support the safety and feasibility of short-term peripheral vasopressor use in early sepsis resuscitation.

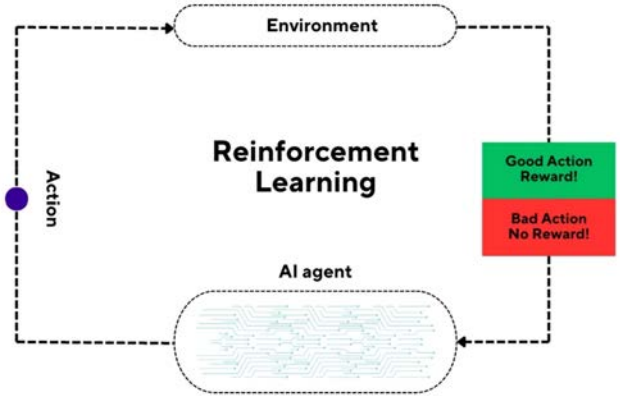
Munroe ES. JAMA Network Open. 2025;8(8):e2529148

The Use of Artificial Intelligence in Sepsis

Optimal Vasopressin Initiation in Septic Shock
The OVISS Reinforcement Learning Study

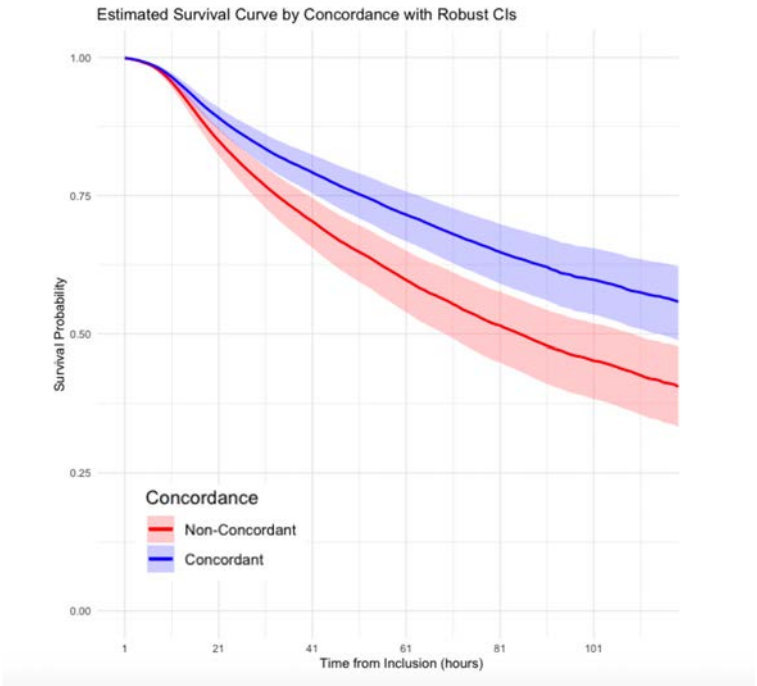
Derivation cohort (n = 3608) Validation cohorts (n = 10 217) 232 hospitals

	Overall
	Clinician-observed action
Patients with vasopressin started, No. (%)	3186 (31)
Norepinephrine dose, median (IQR), µg/kg/min	0.37 (0.17-0.69)
Time since shock onset, median (IQR), h	5 (1-14)
SOFA score, median (IQR)[a]	9 (6-12)
Serum lactate, median (IQR), mmol/L	3.6 (1.8-6.8)



Kalimouttou A, JAMA 2025; 333:1688

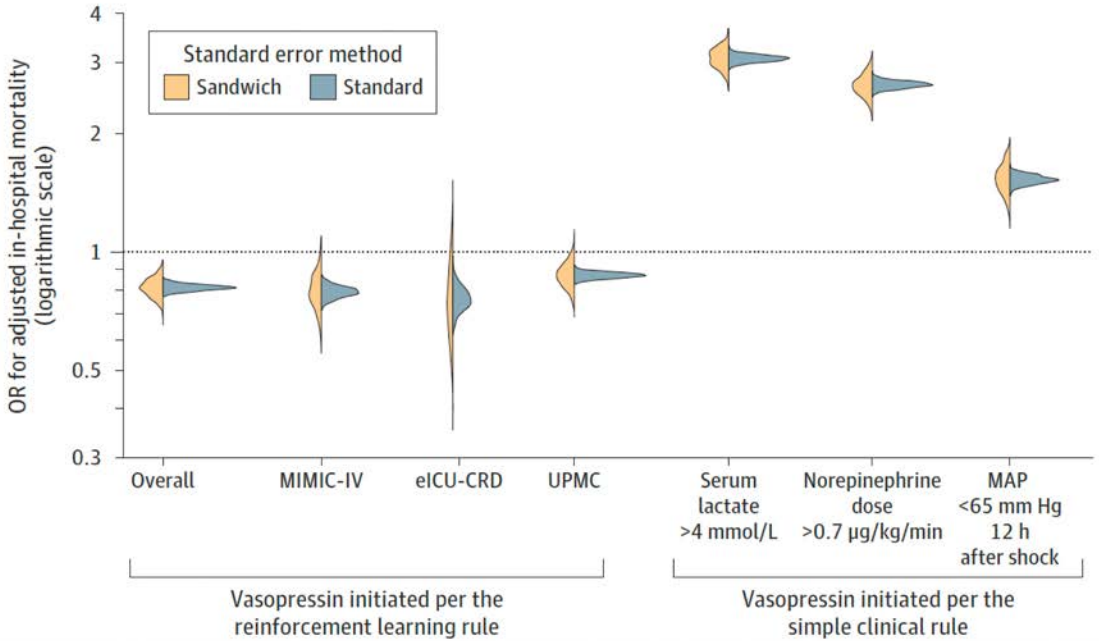
Optimal Vasopressin Initiation in Septic Shock
The OVISS Reinforcement Learning Study



	Overall validation set n = 10,217		
Outcome	**No of patient (%)**	**OR (95%CI)***	**E-value**
In-hospital Mortality	4147 (41)	0.81 (0.73-0.91)	1.46
Kidney **Replacement Therapy**	1923 (19)	0.47 (0.46-0.49)	2.28
Mechanical Ventilation	5431 (53)	1.00 (0.96-1.04)	1

Kalimouttou A, JAMA 2025; 333:1688

Optimal Vasopressin Initiation in Septic Shock
The OVISS Reinforcement Learning Study



Kalimouttou A, JAMA 2025; 333:1688

Early vasopressin plus norepinephrine versus delayed or no vasopressin in septic shock: A systematic review and meta-analysis

Isadora Mamede, MD [a,*], Lucas Arêa [b], Giulia Carvalhal [c], Rodrigo Bessa [d],

Vasopressin Initiation Timing and In-Hospital Mortality in Septic Shock: An Observational Study of Large Public Databases

Critical Care Explorations
September 2025 • Volume 7 • Number 9 • e1284

Vasopressin and its analogues in patients with septic shock: holy Grail or unfulfilled promise? Lajoye *et al. Critical Care* (2025) 29:333

Take home messages

1. Sepsis and septic shock are a daily problem in ICU
2. Mortality of septic shock decreases but is still unacceptable
3. Treatment of septic shock should be less invasive
4. Treatment of septic shock is complex and should be personalized
5. AI will be the next helpful step in septic shock diagnosis and treatment
6. 2026 new Survival Sepsis Campain guidelines

謝謝您