Νοσηλευτική αντιμετώπιση βαρέως πάσχοντα σε Κλινικό Τμήμα

Μαρία Καλαμπαλίκη

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Βαρέως πάσχων ασθενής – Critically ill patient

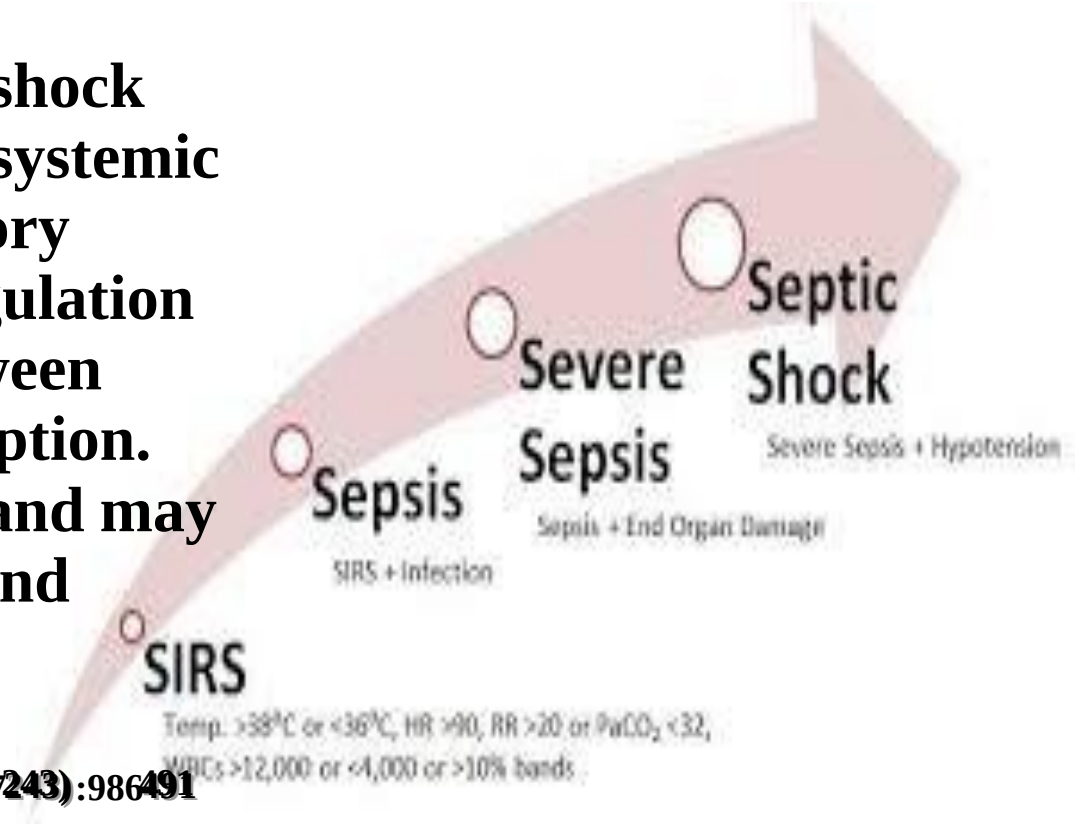
- Διατρέχει άμεσο κίνδυνο η ζωή του
- Η βαρύτητα της νόσου του οδηγεί σε παθοφυσιολογικές διαταραχές, που αν δεν αναγνωριστούν και αντιμετωπιστούν άμεσα οδηγούν σε ανεπάρκεια ή και θάνατο.

Early recognition and treatment of sepsis reduces mortality (Dellinger et al., 2008)

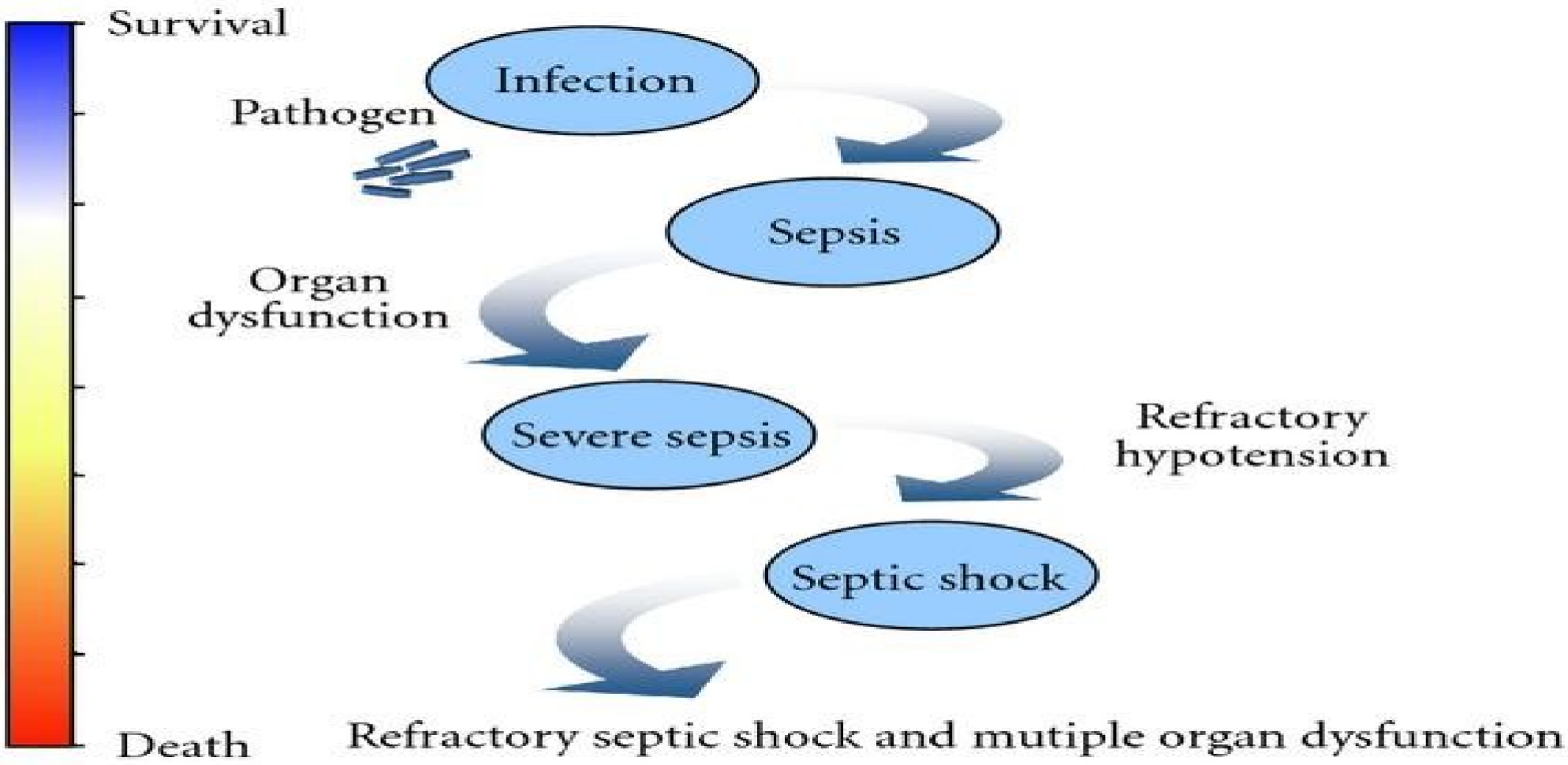
Ο ρόλος του νοσηλευτή είναι κρίσιμος στην πρόληψη, αναγνώριση και άμεση χορήγηση θεραπείας

J. TazbirPublished 2012 Medicine
Medsurg nursing : official journal of the Academy of Medical-Surgical Nurses – πηγή :www.acep.org

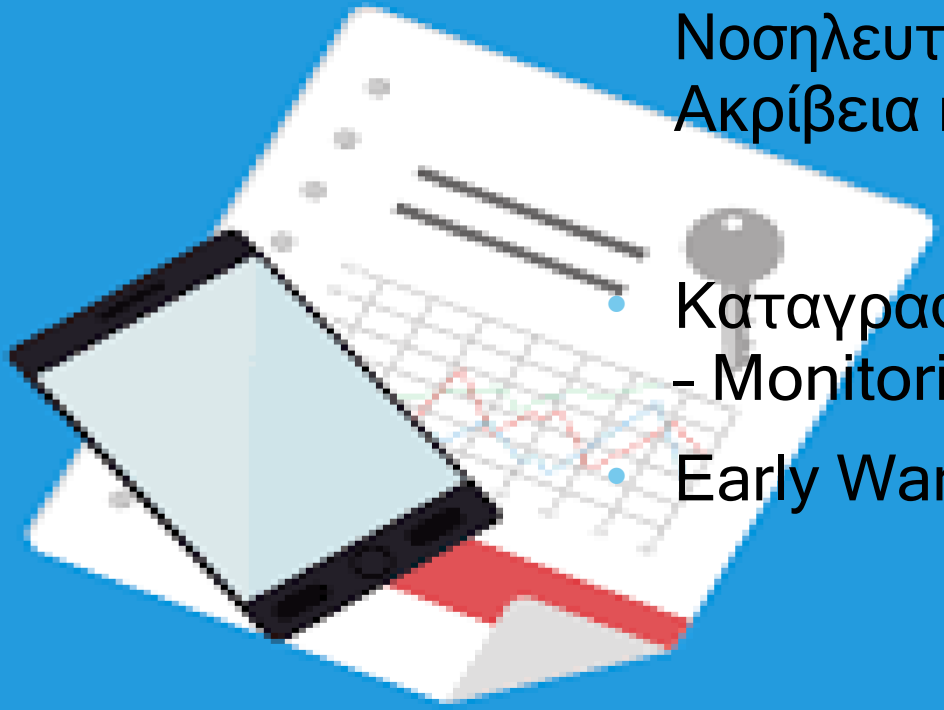
Continuum from infection to septic shock the initial response to pathogen is a systemic response, with release of inflammatory mediators and activation of the coagulation cascade, resulting in imbalance between oxygen delivery and oxygen consumption. Ultimately, tissue hypoxia develops and may lead to multiple organ dysfunction and irreversible shock.



May 2011Journal of Biomedicine and Biotechnology 2011(1110-7243):986491
DOI: 10.1155/2011/986491 SourcePubMed


Survival
Infection
Pathogen
Sepsis
Organ dysfunction
Severe sepsis
Refractory hypotension
Septic shock
Death
Refractory septic shock and mutiple organ dysfunction

Not Documented, Not Done



Νοσηλευτική Αξιολόγηση με Ακρίβεια και Επιμέλεια

- Καταγραφή Ζωτικών Σημείων – Monitoring
- Early Warning Systems

Πηγή :CPA HALL TALK

Φυσιολογικές Τιμές

HR	60 – 100 Beats per minute
BP	120/80 mmHg
RR	10 – 20 Breaths per minute
O_2	95 – 100%
Θ	36,5 - 38 ^{0}C

σφυγμοί

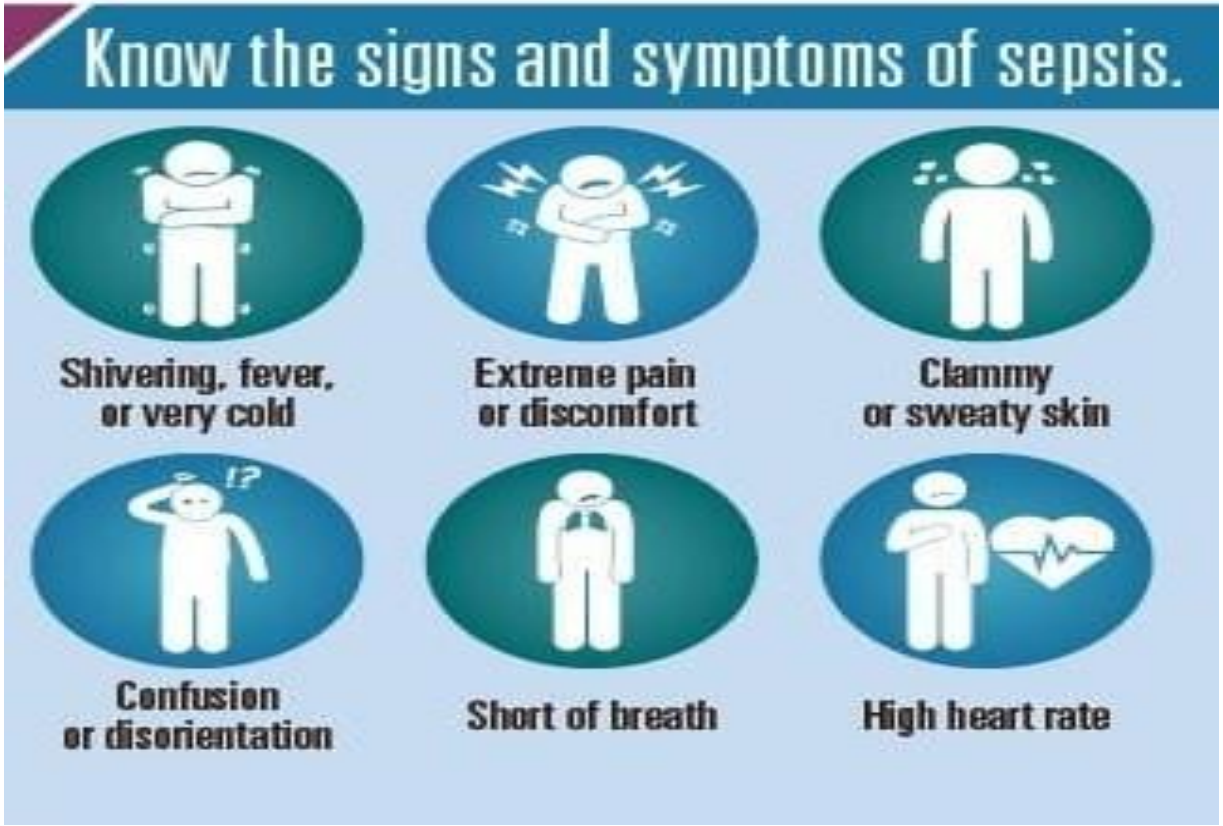
Αρτηριακή πίεση

Κορεσμός Ο2

αναπνοές

Θερμοκρασία


ALARM
depositphotos
Image ID: 173160440
www.depositphotos.com


Know the signs and symptoms of sepsis.
Shivering, fever, or very cold
Extreme pain or discomfort
Clammy or sweaty skin
Confusion or disorientation
Short of breath
High heart rate

Early warning systems

- early detect Deterioration
- trigger appropriate Clinical response

NATIONAL EARLY WARNING SCORE - NEWS

Physiological Parameters	3	2	1	0	1	2	3
Respiration Rate (BPM)	≤8		9-11	12-20		21-24	≥25
Oxygen Saturations (%)	≤91	92-93	94-95	≥96			
Any Supplemental Oxygen		Yes		No			
Temperature (°C)	≤35		35.1-36.0	36.1-38.0	38.1-39.0	≥39.1	
Systolic Blood Pressure (mmHg)	≤90	19-100	101-110	111-219			≥220
Heart Rate (BPM)	≤40		41-50	51-90	91-110	111-130	≥131
Level of Consciousness				A			V, P or U

NATIONAL EARLY WARNING SCORE - NEWS

NEWS Scores	Clinical Risk
0 Aggregate 1 - 4	Low
RED Score* (Individual parameter scoring 3) Aggregate 5 - 6	Medium
Aggregate 7 or more	High

NATIONAL EARLY WARNING SCORE - NEWS

NEWS SCORE	FREQUENCY OF MONITORING	CLINICAL RESPONSE
0	Minimum 12 hourly	• Continue routine NEWS monitoring with every set of observations
Total: 1-4	Minimum 4-6 hourly	• Inform registered nurse who must assess the patient; • Registered nurse to decide if increased frequency of monitoring and / or escalation of clinical care is required;

NATIONAL EARLY WARNING SCORE - NEWS

Total: **5 or more** **or** **3 in one parameter**	Increased frequency to a minimum of 1 hourly	• Registered nurse to urgently inform the medical team caring for the patient; • Urgent assessment by a clinician with core competencies to assess acutely ill patients; • Clinical care in an environment with monitoring facilities;
Total: **7** **or more**	Continuous monitoring of vital signs	• Registered nurse to **immediately** inform the medical team caring for the patient – this should be at least at Specialist Registrar level; • Emergency assessment by a clinical team with critical care competencies, which also includes a practitioner/s with advanced airway skills; • Consider transfer of Clinical care to a level 2 or 3 care facility, i.e. higher dependency or ITU;

MODIFIED EARLY WARNING SCORE - MEWS

Score	3	2	1	0	1	2	3
Respiratory rate		< 9		9 - 14	15 - 20	21 - 30	> 30
Saturation rate (with therapy)	< 90						
Heart frequency		< 40	40 - 50	51 - 100	101 - 110	111 - 130	> 130
Systolic blood pressure	< 70	70 - 80	81 - 100	101 - 200			
Temperature		< 35.1	35.1 - 36.5	36.5 - 37.5	> 37.5		
Consciousness				A	V	P	U
Urine production	< 75mL in the last 4 hours						
Nurse being worried	1 point						

A = Alert V = Response to verbal stimulation P = Response to painful stimulation U = Unresponsive

Early warning systems

Awake	Patient is awake
Verbal	Patient responds to a verbal stimulus
Pain	Patient responds to a pain stimulus
Unresponsive	Patient is unresponsive to stimulus

Πηγή:EMS1.com

Early warning systems

Identification of deteriorating patients on general wards; measurement of vital parameters and potential effectiveness of the Modified Early Warning Score

81% των ασθενών που παρουσίασαν σοβαρό ανεπιθύμητο σύμβαμα είχαν MEWS >3 στο προηγούμενο 48ωρο

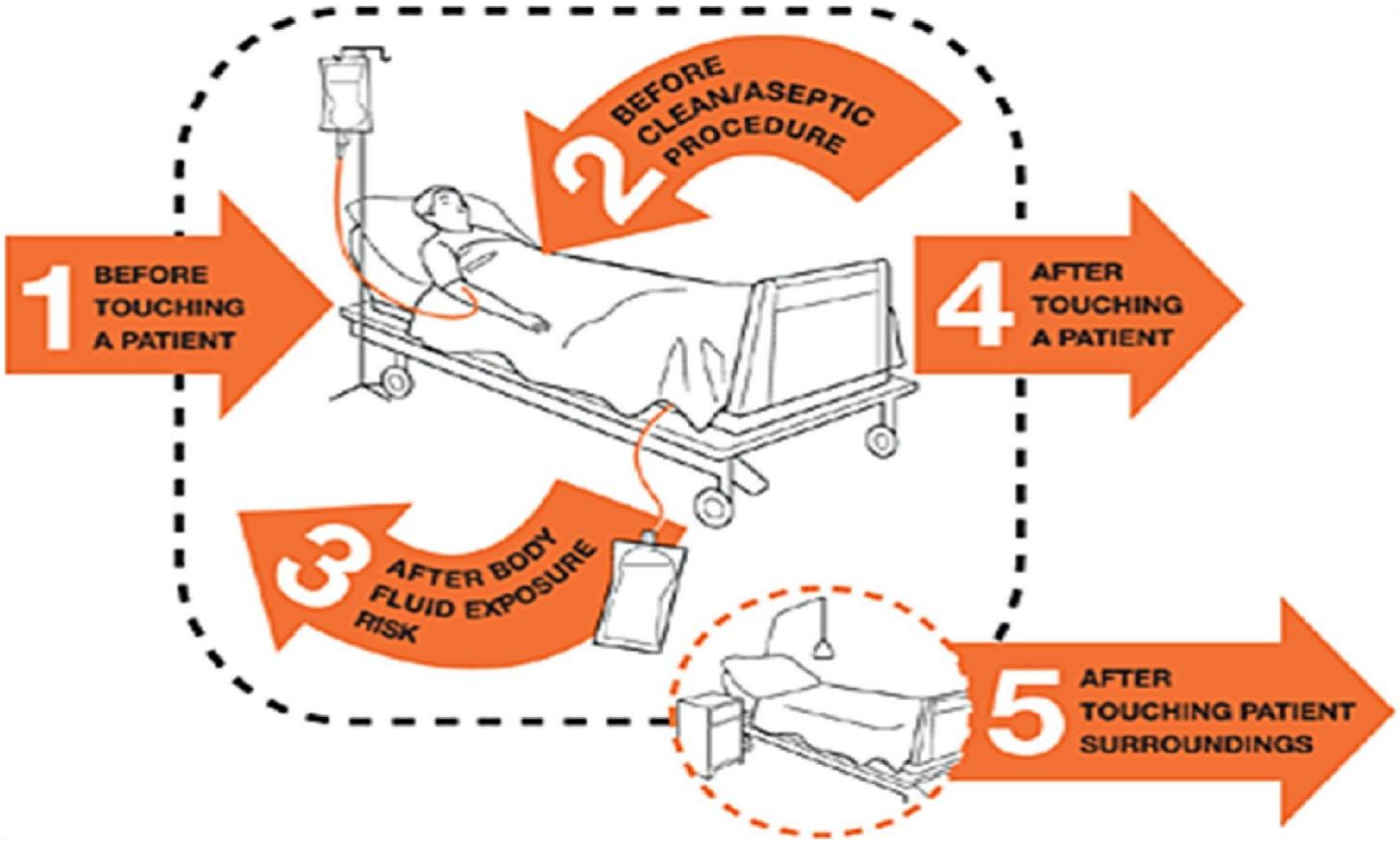
Journal of Critical Care
Volume 27, Issue 4, August 2012, Pages 424.e7-424.e13

Δέσμη Μέτρων - Care Bundle

Ο νοσηλευτής αξιολογεί

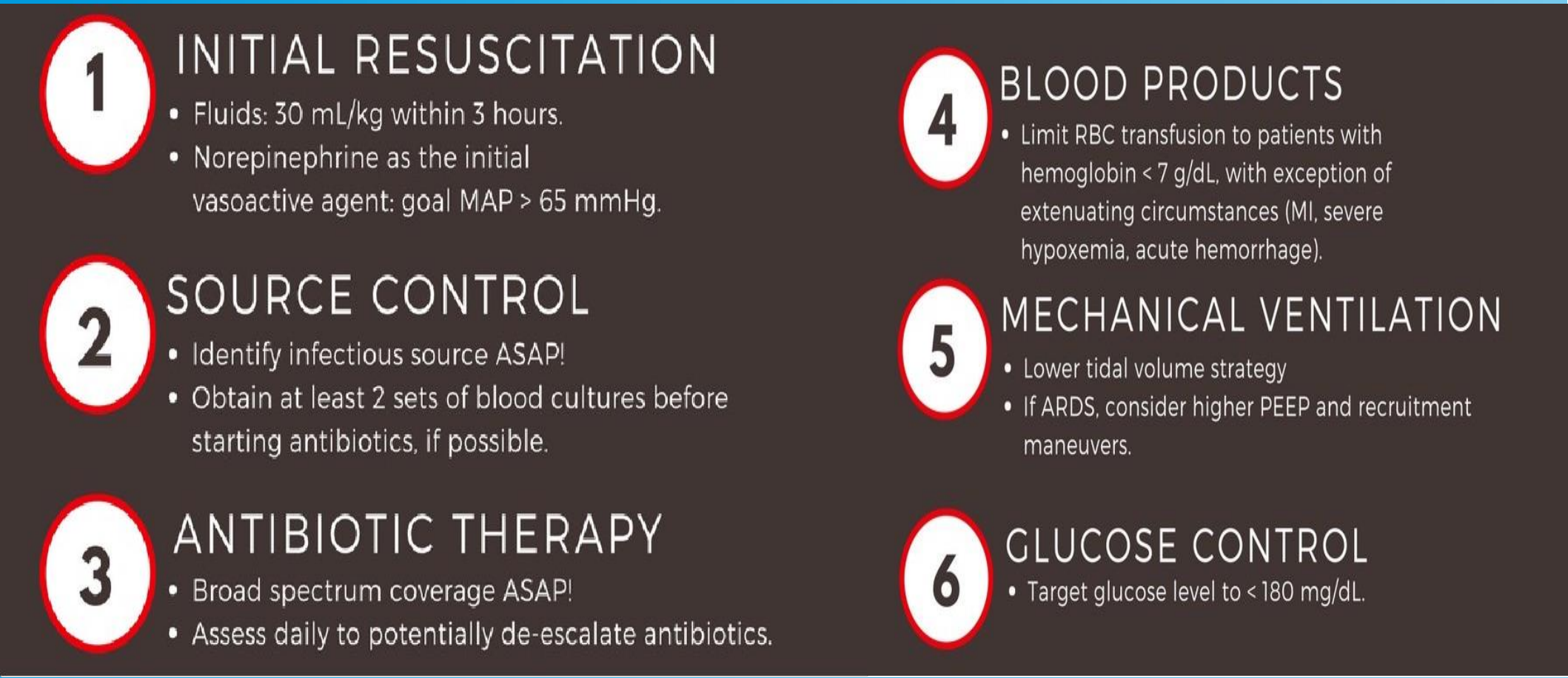
- Αιμοδυναμική κατάσταση
- Ισοζύγιο υγρών
- Διατροφική κατάσταση
- Εργαστηριακά αποτελέσματα και χορηγεί
- IV υγρά και φάρμακα

Δέσμη Μέτρων - Care Bundle

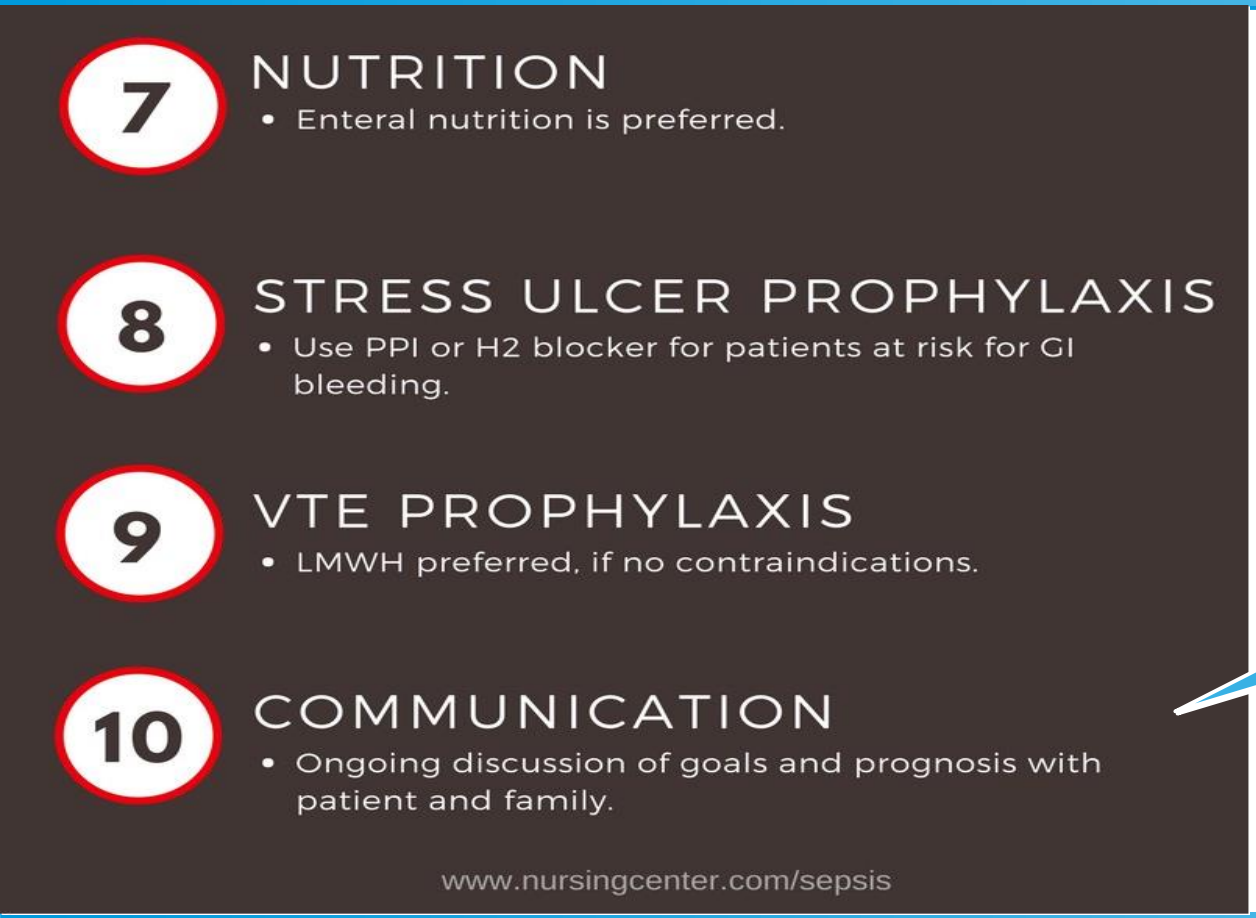


The 5 moments of Hand Hygiene

Δέσμη Μέτρων – Care Bundle – 10 tips



Δέσμη Μέτρων – Care Bundle – 10 tips



Hour-1
Surviving Sepsis Campaign
Bundle of Care

Δέσμη Μέτρων - Care Bundle

Οικογένεια

The European Consensus Statement on the Multi-disciplinary and patient-centred care

- Συναισθηματική φόρτιση
- Επαγρύπνηση δίπλα στον ασθενή
- Θέματα Θρησκείας
- Πληροφόρηση
- Φροντίδα
- Αξιοπρέπεια

Δέσμη Μέτρων - Care Bundle

- Υπόταση
- Ταχύπνοια
- Ταχυκαρδία
- Ρίγος / Πυρετός
- Σύγχυση
- Ισοζύγιο υγρών (?)

ΜΕΤΑΦΟΡΑ ΒΑΡΕΩΣ ΠΑΣΧΟΝΤΑ

INTENSIVE CARE UNIT

APACHE II

	Physiologic variable[b]	Point score								
		+4	+3	+2	+1	0	+1	+2	+3	+4
1	Temperature	⩾41°	39–40.9°	–	38.5–38.9°	36–38.4°	34–35.9°	32–33.9°	30–31.9°	⩽29.9°
2	Mean arterial pressure (mm Hg)	⩾160	130–159	110–129	–	70–109	–	50–69	–	⩽49
3	Heart rate	⩾180	140–179	110–139	–	70-109	–	55–69	40–54	⩽39
4	Respiratory rate(non-ventilated or ventilated)	⩾50	35–49	–	25–34	12–24	10–11	6-9	–	⩽5
5	Oxygenation:									
	a) $FiO_2 \geqslant 0.5$: use $A\text{-}aDO_2$	⩾500	350–499	200–349	–	<200	–	–	–	–
	b) $FiO_2 < 0.5$: use PaO_2 (mm Hg)	–	–	–	–	>70	61–70	–	55–60	<55
6	Arterial pH	⩾7.7	7.6–7.69	–	7.5–7.59	7.33–7.49	–	7.25–7.32	7.15–7.24	<7.15
7	Serum Na (mMol/L)	⩾180	160–179	155–159	150–154	130–149	–	120–129	111–119	⩽110
8	Serum K (mMol/L)	⩾7	6–6.9	–	5.5–5.9	3.5-5.4	3–3.4	2.5–2.9	–	<2.5
9	Serum creatinine (mg/dL): double point score for acute renal failure	⩾++++3.5	2–3.4	1.5–1.9	–	0.6–1.4	–	<0.6	–	––
10	Hct (%)	⩾60	–	50–59.9	46–49.9	30–45.9	–	20–29.9	–	<20
11	WBC (in 1000s)	⩾40	–	20–39.9	15–19.9	3–14.9	–	1–2.9	–	<1
12	Glasgow coma score (GCS)	Score = 15 minus actual GCS								
Acute physiology score is the sum of the 12 individual variable points										
Add 0 points for the age <44.2 points. 45–54 years: three points. 55–64 years: five points. 65–74 years: six points ⩾75 years										
APACHE II score = acute physiology score + age points + chronic health points. Minimum score = 0; maximum score = 71. Increasing score is associated with increasinf = g risk of hospital death										
Add chronic health ststus points: two points if elective postoperative patient with immunocompromise or history of severe organ insufficiency: five points for nonoperative patient or emergency postperative patient with immunocompromise or severe organ insufficiency[c]										
13[d]	Serum HCO_3(venous-mMol/L) use only if no ABGs52	⩾52	41–51.9	–	32–40.9	22–31.9	–	18–21.9	15–17.9	<15

Adapted from Knaus WA. Draper EA. Wagner DP. Zimmermam JB: APACHE II: A severity of disease classification system. *Critial care medicine* 13: 818–829. 1985.
Interpretation of APACHE II scores (predicted mortality rate).
0–4 = ~4% death rate 10–14 = ~15% death rate 20–24 = ~40% death rate 30–34 = ~75% death rate.
5–9 = ~8% death rate 15–19 = ~25% death rate 25–29 = ~55% death rate Over 34 = ~85% death rate.

[a] APACHE II Score = acute physiology score + age points + chronic health points. Minimum score = 0; maximum score = 71. Increasing score is associated with increasing risk of hospital death.

[b] Choose worst value in the past 24 h.

[c] Chronic health status: Organ sufficiency (e.g. hepatic, cardiovascular, renal, pulmonary) or immuno-compromised state must have preceded current admission.

[d] Optional variable: use only if no ABGs.

SOFA score

SOFA score	1	2	3	4
Respiration PaO_2/FiO_2 (mm Hg)	<400	<300	<200 (with respiratory support)	<100 (with respiratory support)
Coagulation 10^{-3}/platelets/mm	<150	<100	<50	<50
Liver Bilirubin mg/dL (μM)	1.2–1.9 (20–32)	2–5.9 (33–101)	6–11.9 (102–204)	>12 (>204)
Cardiovascular Hypotension	MAp < 70 mm Hg	Dopamine ≤ 5[b] or dobutamine (any dose)	Dopamine > 5 or epinephrine ≤0.1 or norepinephrine ≤ 0.1	Dopamine > 15 or epinephrine > 0.1 or norepinephrine > 0.1
CNS Glasgow Coma Score	13–14	10–12	6–9	<6
Renal Creatinine, mg/dL (μM) or urine output	1.2–1.9 (110–170)	2–3.4 (171–299)	3.5–4.9 (300–440) Or <500 mL/d	>5 (>440) or <200 mL/d

Abbreviations: CNS, central nervous system; SOFA, Sequential (Sepsis-Related) Organ Failure Assessment.
[a]Based on Vincent et al[53] and shows the potential values that contribute to the SOFA score.
[b]Catecholamine and adrenergic agents administered for at least 1 hour; doses in μg/kg/min.

Quick SOFA score

ALTERED MENTAL STATUS

FAST RESPIRATORY RATE

LOW BLOOD PRESSURE

The qSOFA score (also known as quickSOFA) uses three criteria

1. **Low blood pressure (SBP≤100 mmHg)**
2. **High respiratory rate (≥22 breaths per min)**
3. **Altered mentation (Glasgow coma scale<15)**

ΜΕΘ

- Πολυδύναμη 24ωρη παρακολούθηση και αντιμετώπιση
- Ενδεικτικές προδιαγραφές μιας σύγχρονης ΜΕΘ - Ελληνική Εταιρεία Εντατικής Θεραπείας & ESICM
- Συστήματα:κυκλοφορικό, αναπνευστικό, ουροποιητικό, πεπτικό, μυοσκελετικό
- Level of Care

ΜΕΘ - Level of Care

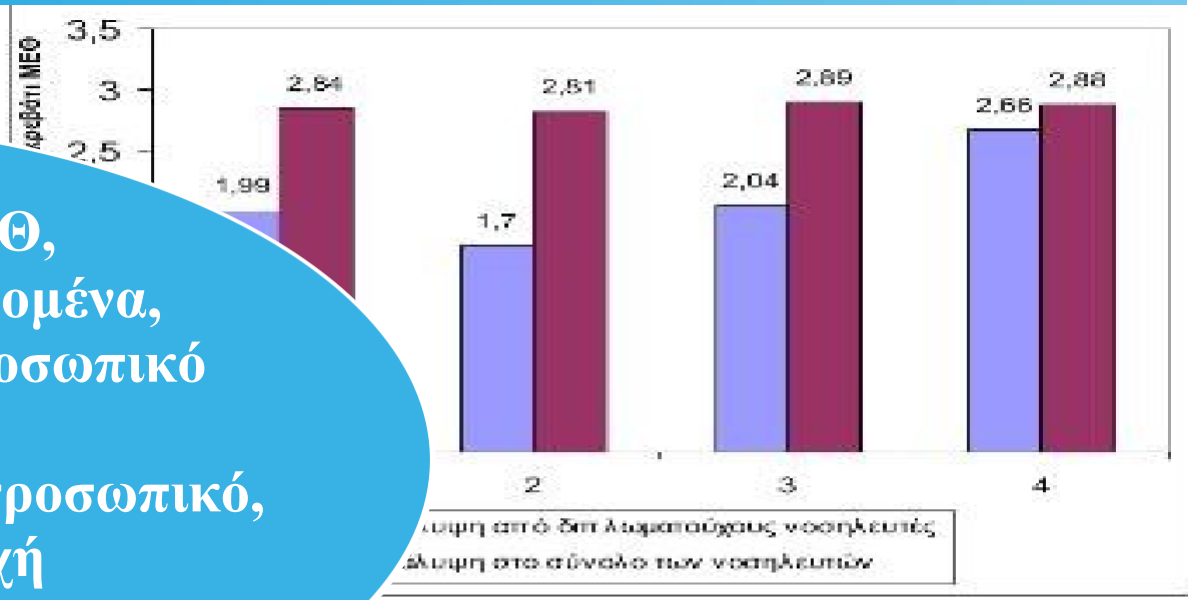
ΕΠΙΠΕΔΟ ΦΡΟΝΤΙΔΑΣ	ΝΟΣΗΛΕΥΤΗΣ/ΑΣΘΕΝΗ	ΣΥΝΟΛΟ ΝΟΣΗΛΕΥΤΩΝ/ΚΛΙΝΗ
ΧΑΜΗΛΟ ΕΠΙΠΕΔΟ	1 / 3	2
ΜΕΣΑΙΟ ΕΠΙΠΕΔΟ	1 / 2	4
ΥΨΗΛΟ ΕΠΙΠΕΔΟ	1 / 1	6

Chatman et al 2010, ICS 1999

ΜΕΘ - Level of Care

Στελέχωση

Η στελέχωση των ΜΕΘ,
σε σχέση με τα διεθνή δεδομένα,
είναι επαρκής σε ιατρικό προσωπικό
αλλά ανεπαρκής
σε νοσηλευτικό & βοηθητικό προσωπικό,
απαραίτητο για παροχή
σωστής εντατικής φροντίδας.
Πνεύμων 2001, 14 (1): 38-46



νοσηλευτική κάλυψη πολυδύναμων ΜΕΘ
ων ΜΕΘ, 2 = ΜΕΘ ΕΣΥ, 3 = πανεπιστημιακές ΜΕΘ, 4 =
ες ΜΕΘ.

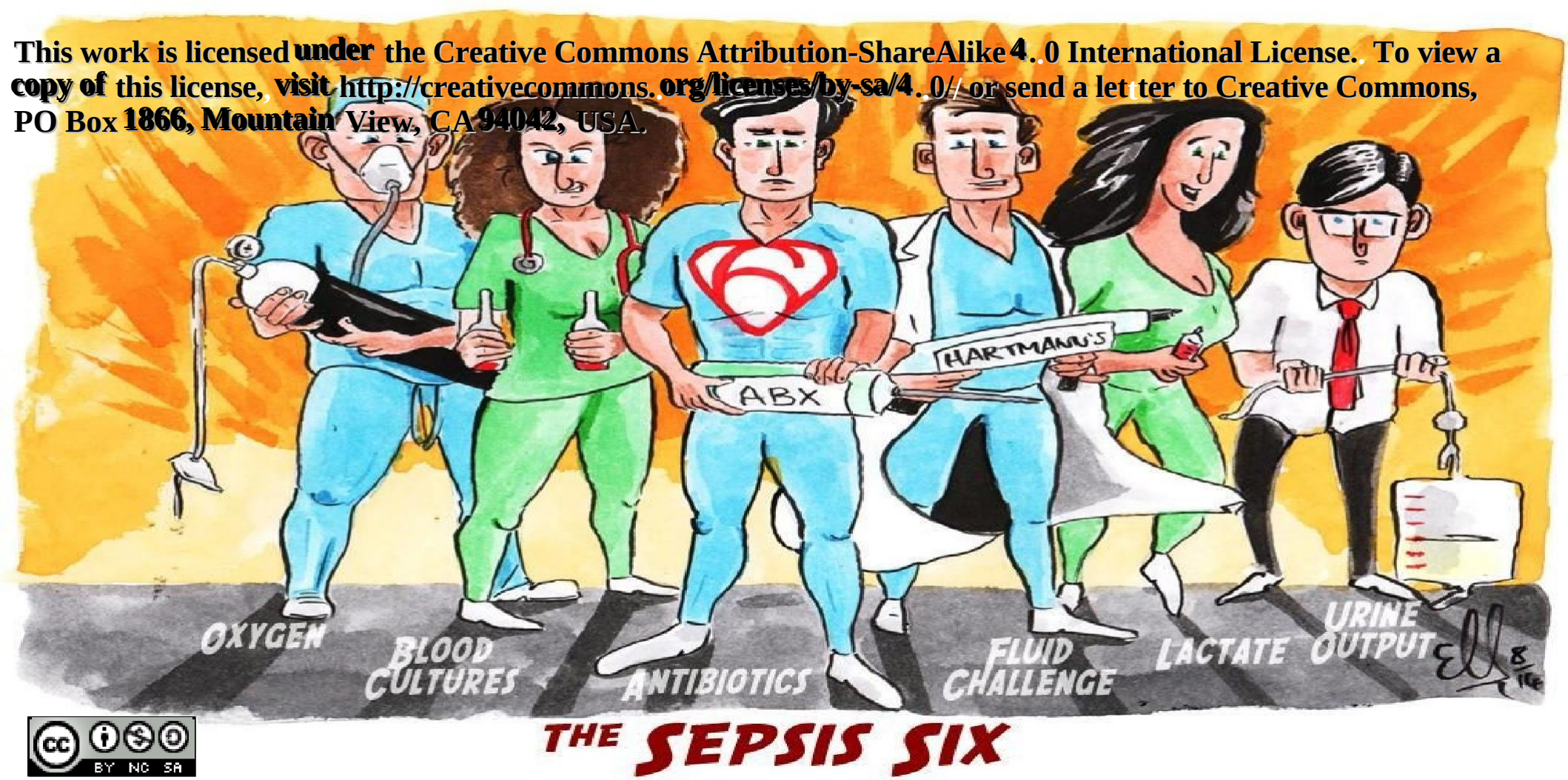
Στελέχωση πολυδύναμων Μονάδων Εντατικής Θεραπείας: Παρούσα κατάσταση
Π. Μυριανθεύς, και συν., 2001

The care of patients with septic shock

is

exceedingly complex

Bridges, E., & Dukes, S. (2005). Cardiovascular aspects of septic shock: pathophysiology, monitoring, and treatment. Critical care nurse, 25 2, 14-6, 18-20, 22-4



THE SEPSIS SIX