

Identificazione precoce dei pazienti con sepsi/shock settico nel dipartimento di emergenza

Dott.ssa Germana Ruggiano
U.O. Medicina d'Urgenza
USL Toscana Centro



H 21:01

TRIAGE

N.T. Uomo 35 aa

MOTIVO DI PRESENTAZIONE: Dal pomeriggio insorgenza di lesioni purpuriche al corpo e febbre nelle ultime 24 ore

TRIAGE

Parametri vitali:

- PA 140/90 mmHg,
- FC 140/min
- Sat 93%, FiO2 21%,
- FR 22/min
- VAS 4
- T 38.7 °C

CODICE DI PRIORITA': GIALLO







CASO 2

A.C. Donna 73 aa

MOTIVO DI PRESENTAZIONE: dolore inguinale sinistro da 2 settimane riacutizzato da 3 gg, il medico curante ha prescritto antibiotico con lieve miglioramento dei sintomi.

Paziende diabetica, ipertesa, recente intervento chirurgico per occlusione intestinale

Parametri vitali:

- PA 130/60 mmHg,
- FC 120,
- Sat 100%, FiO₂ 21%,
- FR 22/min
- VAS 4
- T 38.5 °C

Viene assegnato un codice



Viene visitata dopo 1 ora e e poi
ricoverata con diagnosi di
“sepsi in ampia raccolta in via di
organizzazione regione inguinocrurale
sinistra in recente intervento”

CASO 3

B.D. Donna 37 aa

MOTIVO DI PRESENTAZIONE: Febbre e dolore
loggia renale sinistra da alcune ore.
Non patologie ne' terapia domiciliare

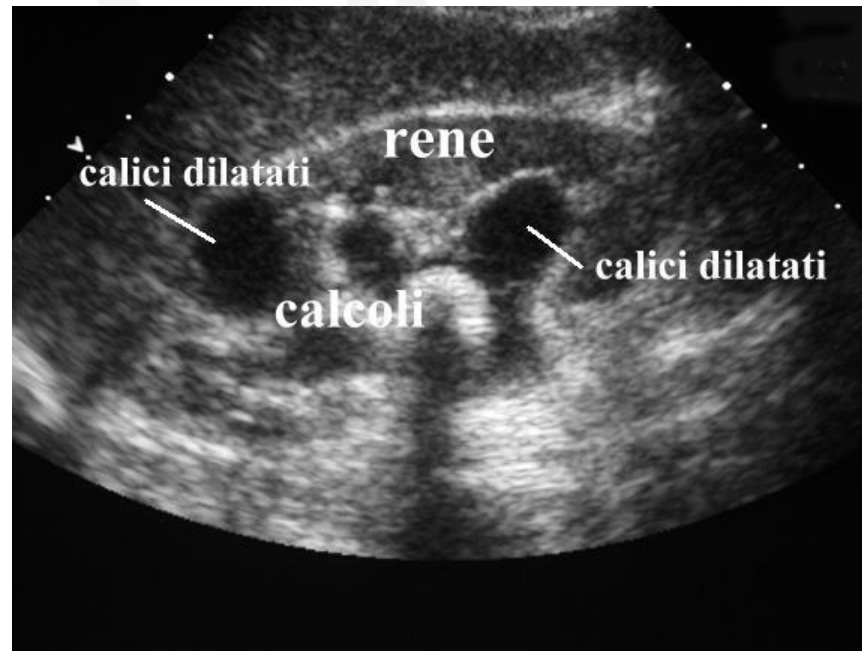
PARAMETRI VITALI:

- FC 115/min
- PA 95/50 mmHg
- T 38,2 °C
- SaO₂ 100%
- VAS 6

Viene assegnato un codice verde



Viene ricoverata con diagnosi di
“sepsi urinaria ostruttiva con calcolosi
ureterale sinistra”



Sepsis, Severe sepsis, Septic shock:

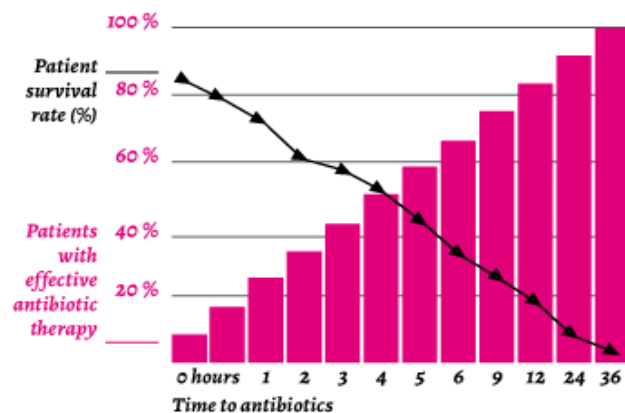


TIME-sensitive

Early identification: high clinical suspicion,
Early aggressive treatment, and
Early prognostic stratification

Don't miss the diagnosis of sepsis!

Kumar et Al. Crit Care Med 2014;18:529



Kumar et Al. Crit Care Med 2006;34:1589-96

Predictors of Patients Who Present to the Emergency Department With Sepsis and Progress to Septic Shock Between 4 and 48 Hours of Emergency Department Arrival

Capp et al. Crit Care Med 2015;43:983-8

Surviving Sepsis Campaign: International Guidelines for Management of Severe Sepsis and Septic Shock: 2012

Dellinger et al Critical Care Medicine February 2013 • Volume 41 • Number 2

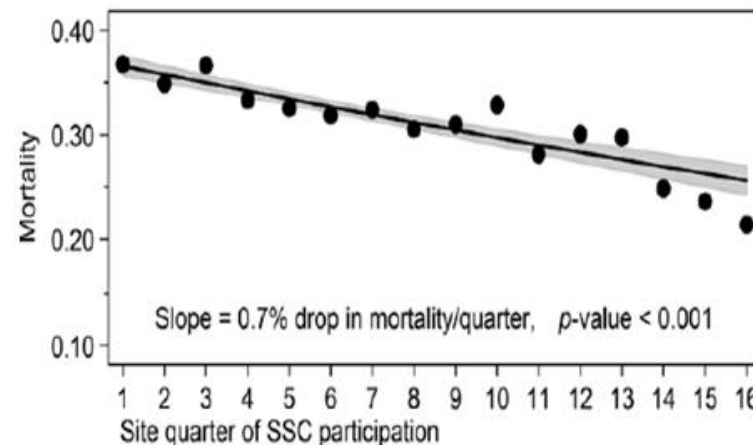


Updated Bundles

(Revised April 2015)

TO BE COMPLETED
WITHIN 3 HOURS
 OF TIME OF PRESENTATION:

1. Measure lactate level
2. Obtain blood cultures prior to administration of antibiotics
3. Administer broad spectrum antibiotics
4. Administer 30ml/kg crystalloid for hypotension or lactate ≥ 4 mmol/L



Levy et al. Crit Care Med 2015;43:3-12

Surviving Sepsis Campaign

La surviving sepsis campaign ha piu' volte sottolineato che il momento "zero" per la diagnosi di sepsi e' il triage:

TRIAGE= TEMPO 0

Identification of the severe sepsis patient at triage: a prospective analysis of the Australasian Triage Scale

Diane J Chamberlain, Eileen Willis, Robyn Clark, Genevieve Brideson

What is already known on this subject

- ▶ Patients with severe sepsis represent the population at the greatest risk of unchecked deterioration in our healthcare systems.
- ▶ Triage to the emergency department is the most critical time in the identification of evolving severe sepsis.
- ▶ Poor identification impacts on patient survival and the ability to implement appropriate resuscitation measures.

Il triage al DEU e' il momento piu' critico per l'identificazione della sepsi in evoluzione

La non identificazione ha un forte impatto sulla sopravvivenza del paziente e sulla possibilita' di applicare le strategie appropriate

Table 1 The ATS categories, MWT and ATS clinical descriptors that match descriptors of the consensus definition of severe sepsis

ATS category and MWT	ATS clinical descriptors that match the consensus definition descriptors of severe sepsis
ATS 1: immediately life-threatening— MWT nil requires immediate attention	Cardiac arrest Respiratory arrest Immediate risk to airway—impending arrest RR<10/min Extreme respiratory distress BP<80 (adult) or severely shocked child/infant Unresponsive or responds to pain only (GCS<9) Ongoing/prolonged seizure
ATS 2: imminently life-threatening— MWT 10 min important time-critical treatment or very severe pain deteriorating rapidly	Airway risk—severe stridor or drooling with distress Severe respiratory distress Circulatory compromise Clammy or mottled skin, poor perfusion HR<50 or >150 (adult) Hypotension with haemodynamic effects Very severe pain—any cause BGL<2 mmol/L Drowsy, decreased responsiveness any cause (GCS<13) Fever with signs of lethargy Moderate shortness of breath SaO₂ 90%–95% BGL >16 mmol/L Seizure (now alert) Any fever if immunosuppressed, for example, oncology patient, steroid Rx Persistent vomiting Dehydration Moderately severe pain—any cause—requiring analgesia Chest pain likely non-cardiac and moderate severity Abdominal pain without high risk features—moderately severe or patient age >65 years
ATS 3: potentially life-threatening or important time-critical treatment or severe pain, deterioration noted MWT 30 min	Foreign body aspiration, no respiratory distress Difficulty swallowing, no respiratory distress Moderate pain, some risk features Vomiting or diarrhoea without dehydration Swollen 'hot' joint Non-specific abdominal pain
ATS 4: potentially life-serious or situational urgency or significant complexity MWT 60 min	Minimal pain with no high risk features Low-risk history and now asymptomatic Minor symptoms of existing stable illness Minor symptoms of low-risk conditions
ATS 5: less urgent. MWT 125 min	

Identification of the severe sepsis patient at triage: a prospective analysis of the Australasian Triage Scale

Diane J Chamberlain, Eileen Willis, Robyn Clark, Genevieve Brideson

Sepsis identification and predictors of mortality

Patients who were identified with severe sepsis at triage were more likely to survive (OR 0.812, 95% CI 0.697 to 0.946, $p < 0.007$) than those who were not. A positive relationship was found between the increasingly urgent ATS category and in-hospital mortality (χ^2 for trend, (4df)=70.62, $p < 0.001$). ATS 1 patients had the highest mortality (OR 1.71, 95% CI 1.21 to 2.41, $p = 0.001$) with ATS 5 patients all surviving. All other ATS categories were not associated with mortality in the adjusted model as described in [table 5](#).

I pazienti che erano identificati come sepsi severa al triage avevano maggiori probabilità di sopravvivere

La compromissione circolatoria (cute pallida e marezzata),
la FC < 50 o > 150 /min
l'ipotensione
erano i maggiori predittori di aumentata mortalità intraospedaliera

The bias adjusted OR using the confounders of age, SOFA score and APACHE II score found the 'circulatory compromise' variable described in ATS 2 as 'clammy or mottled skin, poor perfusion, heart rate < 50 or > 150 bpm and hypotension with haemodynamic effects,' to be the strongest predictor of in-hospital mortality (OR 1.78, 95% CI 1.34 to 1.41, $p < 0.001$), as was lactate > 4 category (OR 1.63, 95% CI 1.10 to 2.89, $p < 0.001$) and the ATS 1 category (OR 1.55, 95% CI 1.09 to 2.35, $p = 0.005$).

SEPSIS RECOGNITION TOOL FOR TRIAGE



ONE OR MORE RISK FACTORS

- Immunocompromised
- Indwelling Medical Device
- Recent Surgery/ Invasive Procedure
- Hx of Fevers/ Rigors

OR

ONE OR MORE SYMPTOMS

- Skin: Cellulitis, Wound
- Urine: Dysuria, Frequency
- Abdomen: Pain, Peritonism
- Chest: Cough, SOB
- Neuro: Decreased Mental Alertness, Neck Stiffness, Headache

AND

2 OR MORE OF THE FOLLOWING CRITERIA

- RESPS ≤ 10 or ≥ 25
- SpO2 $< 95\%$
- SYSTOLIC BP $\leq 100\text{mmHg}$
- PULSE ≤ 50 or ≥ 120 BPM
- ALTERED LOC or CHANGE IN COGNITIVE STATUS
- TEMP $\leq 35.5\text{C}$ or $\geq 38.5\text{C}$

CAT 2



Septic?
2 or more SIRS?
Hypotensive?
OR Lactate ≥ 4.0
Last Physiological criteria met
a) within 2hrs AND
b) $< 6\text{hrs}$ from presentation

PHONE SENIOR REG ON
CALL FOR ICU A.S.A.P
PHONE 0414 193 232

DOES THE PATIENT HAVE ANY RED CRITERIA?

- SBP $\leq 90\text{mmHg}$
- LACTATE $\geq 4.0\text{mmol/L}$
- IMMUNOCOMPROMISED
- AGE ≥ 65 years
- BASE EXCESS < -5.0

RESUS

YES

NO

CONSIDER
MAIN ARENA

Evaluation of an Emergency Department Triage Screening Tool for Suspected Severe Sepsis and Septic Shock

Catherine Patocka, Joel Turner, Xiaoqing Xue, Eli Segal

Obiettivo dello studio: correlare l'uso dello strumento con il tempo di somministrazione degli antibiotici

**Il “ritardo” di
somministrazione degli
antibiotici si era ridotto del
21%**

Figure 1. The Jewish General Hospital Emergency Department Triage Tool

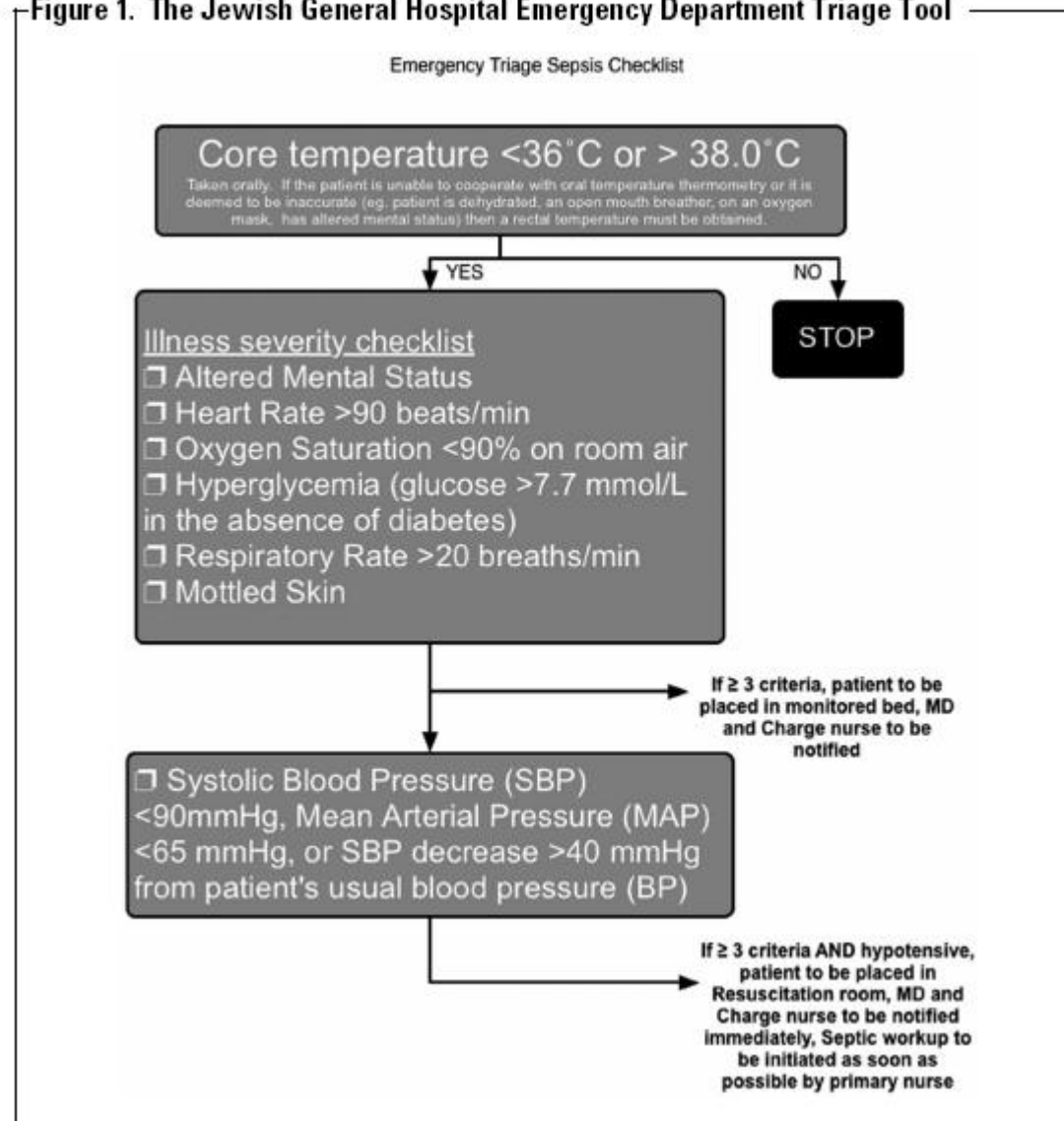


Figure 2. Percentage of Patients and Time to Antibiotics at Hourly Intervals Based on Time From Triage (as Recorded by the Nurse at the Beginning of Triage) to Administration of Antibiotics (as Recorded on the Medication Administration Sheet)

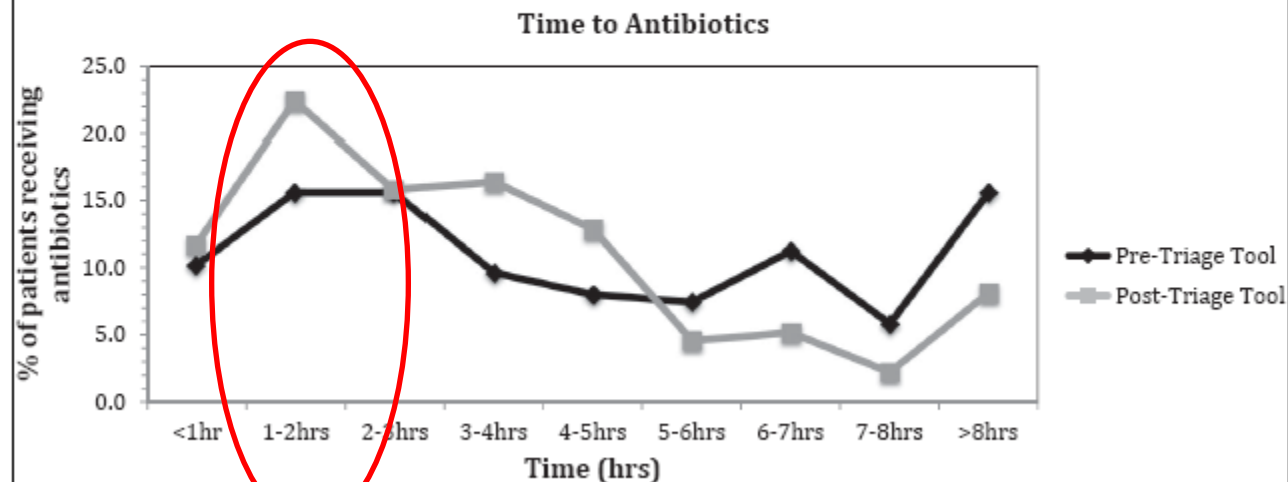


Table 3. Percent Change in Time Intervals Postimplementation of Triage Tool

Outcome	Independent Variable	Percent change (95% Confidence Interval)	p-Value
Time to antibiotics	Posttriage tool vs. pretriage	-21% (-6% to -33%)	.0074
	CTAS 1-2 vs. CTAS 3-4	-41% (-30% to -50%)	<.0001
Time to monitoring	Post triage tool vs. pretriage	-8% (-32% to 25%)	.450
	CTAS 1-2 vs. CTAS 3-4	-52% (-43% to -70%)	<.0001
Time to first bolus(>500 cc crystalloid)	Post triage tool vs. pretriage	-18% (-28% to 11%)	.596
	CTAS 1-2 vs. CTAS 3-4	-73% (-52% to -85%)	<.0001

L'utilizzo di uno strumento al triage riduceva i tempi di somministrazione dell'antibiotico e dei liquidi

Perche' non provare ad identificarli gia' sul territorio?

Open Access

Research

BMJ Open Identification of adults with sepsis in the prehospital environment: a systematic review

Michael A Smyth,^{1,2,3} Samantha J Brace-McDonnell,^{1,4} Gavin D Perkins^{1,4}

Conclusioni

- Il riconoscimento preospedaliero dei pazienti con sepsi e' scarso.
- L'utilizzo di uno strumento derivato dai criteri diagnostici della SSC potrebbe migliorare il riconoscimento preospedaliero.
- Sono stati sviluppati strumenti dai dati dell'EMS ma devono essere validati nella pratica clinica

A collaborative improvement project by an NHS Emergency Department and Scottish Ambulance Paramedics to improve the identification and delivery of sepsis 6.

Martin Carberry, John Harden

Studio condotto in un PS scozzese con 70000 accessi/anno:

Problema: identificazione precoce dei pz con sepsi

.Tempo di triage (identificazione) 17'

.Tempo triage-antibiotici 49'

.Adesione al "sepsis 6" 78% (obiettivo 95%)

A collaborative improvement project by an NHS Emergency Department and Scottish Ambulance Paramedics to improve the identification and delivery of sepsis 6.

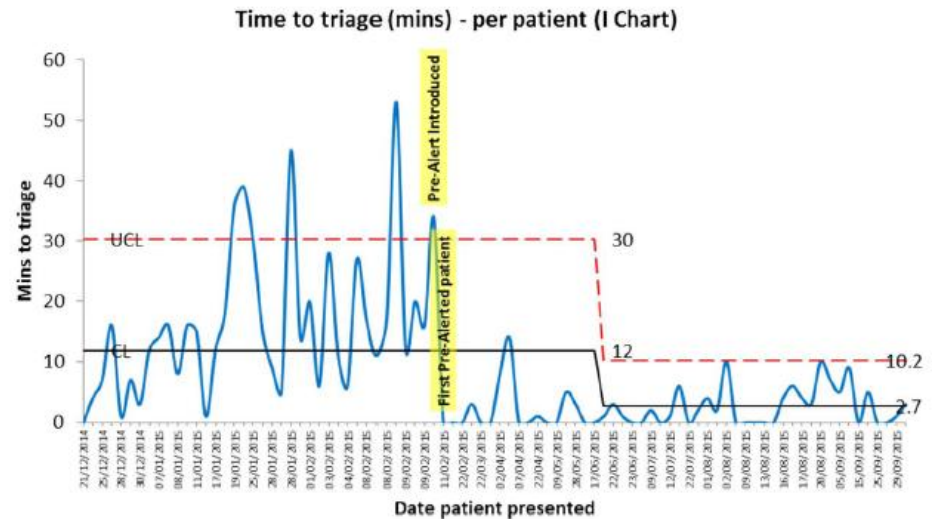
Martin Carberry, John Harden

Obiettivo:
riduzione del 20% nel tempo necessario all'identificazione dei pazienti potenzialmente settici e al loro trattamento attraverso un sistema di pre allertamento da parte dei paramedici del sistema di emergenza territoriale

Conclusioni

Uno strumento di preallerta usato da paramedici ha permesso di:

- migliorare il tempo di identificazione e quindi il tempo per la somministrazione degli antibiotici
- somministrare il “sepsis 6” per i pazienti che con sepsi in ambulanza nei 60’ previsti



Clinical Decision Support for Early Recognition of Sepsis

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1-8
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DOI: 10.1177/1062860614557636
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Robert C. Amland, PhD¹, and Kristin E. Hahn-Cover, MD²

Un sistema di supporto decisionale clinico (CDS), integrato con un sistema di allerta e un team di risposta rapida puo' facilitare il raggiungimento degli obiettivi (bundle a 3 h)

Caratteristiche ideali di un CDS:

- real time
- point of care
- Integrato con il sistema informatico

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Robert C. Amland, PhD¹, and Kristin E. Hahn-Cover, MD²

Obiettivi dello studio:

- . Valutare la performance di un cloud-based sepsis CDS
- . Valutare l'incidenza, prevalenza e outcome applicando il CDS

Sepsis CDS caratteristiche chiave:

- . Sistema computerizzato in real time
- . Criteri di SIRS/SIRS severa presi dalla cartella clinica informatizzata
- . Sistema di allerta automatico dopo identificazione

Criteri utilizzati:

1) *SIRS*: 3 o più tra

- temperatura $>38^{\circ}\text{C}$ o $<36^{\circ}\text{C}$,
- FC $>95/\text{min}$,
- FR $>22/\text{min}$, GR >12000 o <4000 ,
- glicemia 141-200 mg/dl

2) *SIRS* severa: 1 o più disfunzioni d'organo:

- Cardiovascolare PAS < 90 mmHg e/o PAM <65 mmHg,
- microcircolo: lattati >2 mmol/l,
- epatico: bilirubina totale > 2 mg/dl,
- renale: incremento creatinina $>0,5$ mg/dl rispetto ai valori di base

I pazienti della coorte A sono quelli individuati dal CDS prima del riconoscimento da parte del clinico

Table 5. Incidence and Outcomes for Patient Cohort A (Early Recognition by the Sepsis CDS).^a

n = 195	n	(%)	ICU		Mortality		LOS, days		Coded Diagnosis	
			n	(%)	n	(%)	Median [IQR]		n	(%)
SIRS (severe) of a noninfectious origin or insult	69	(36)	25	(36)	3	(4)	5.6	[3.1-8.8]	6	(9)
Sepsis	39	(20)	13	(33)	0	(0)	3.7	[2.8-6.7]	7	(18)
Severe sepsis	87	(44)	59	(68)	12	(14)	9.0	[5.0-17.8]	47	(54)
Initial vitals and electrolyte results										
↑Shock index and ↑↓SIDa	28	(32)	19	(70)	6	(22)	8.9	[5.5-14.4]	17	(63)
Number of organs failed										
One	31	(36)	14	(45)	0	(0)	7.9	[4.7-16.8]	11	(35)
Two	33	(38)	27	(82)	7	(21)	9.3	[5.4-19.9]	22	(67)
≥Three	23	(26)	18	(78)	5	(22)	10.2	[5.8-15.9]	14	(57)
Types of organs failed ^b										
Cardiovascular system	76	(87)	57	(75)	12	(16)	9.9	[5.3-18.2]	43	(57)
Tissue perfusion	41	(47)	31	(76)	7	(17)	8.4	[5.0-13.4]	26	(63)
Hepatic system	31	(36)	20	(65)	4	(13)	13.2	[6.0-19.8]	19	(61)
Renal system	28	(32)	21	(75)	8	(29)	11.2	[5.2-21.9]	16	(57)

Abbreviations: CDS, clinical decision support; ICD-9-CM, *International Classification of Diseases, Ninth Revision, Clinical Modification*; ICU, intensive care unit; IQR, interquartile range; LOS, length of stay; SIDa, apparent strong ion difference; SIRS, systemic inflammatory response syndrome.

^aICU admission anytime during hospitalization; mortality: in-hospital; a sepsis-related ICD-9-CM diagnosis code was assigned at discharge. SIDa indicates corrected SIDa.

^bTypes of organs failed: multiple responses per patient possible.

Clinical Decision Support for Early Recognition of Sepsis

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SAGE

Robert C. Amland, PhD¹, and Kristin E. Hahn-Cover, MD²

Conclusioni:

Il sepsis CDS integrato nella cartella informatizzata può favorire un riconoscimento precoce dei pazienti critici e attivare un alert che acceleri la diagnosi ed il trattamento

Il gruppo di studio prevede possibilità di miglioramento aggiungendo lo *shock index*, la carenza di basi

RESEARCH ARTICLE

Open Access



Prospective evaluation of an automated method to identify patients with severe sepsis or septic shock in the emergency department

Samuel M. Brown^{1,2,7*}, Jason Jones^{3†}, Kathryn Gibb Kuttler^{1,4}, Roger K. Keddington⁵, Todd L. Allen⁶ and Peter Haug⁴

Hanno sviluppato un modello probabilistico e lo hanno confrontato al triage infermieristico

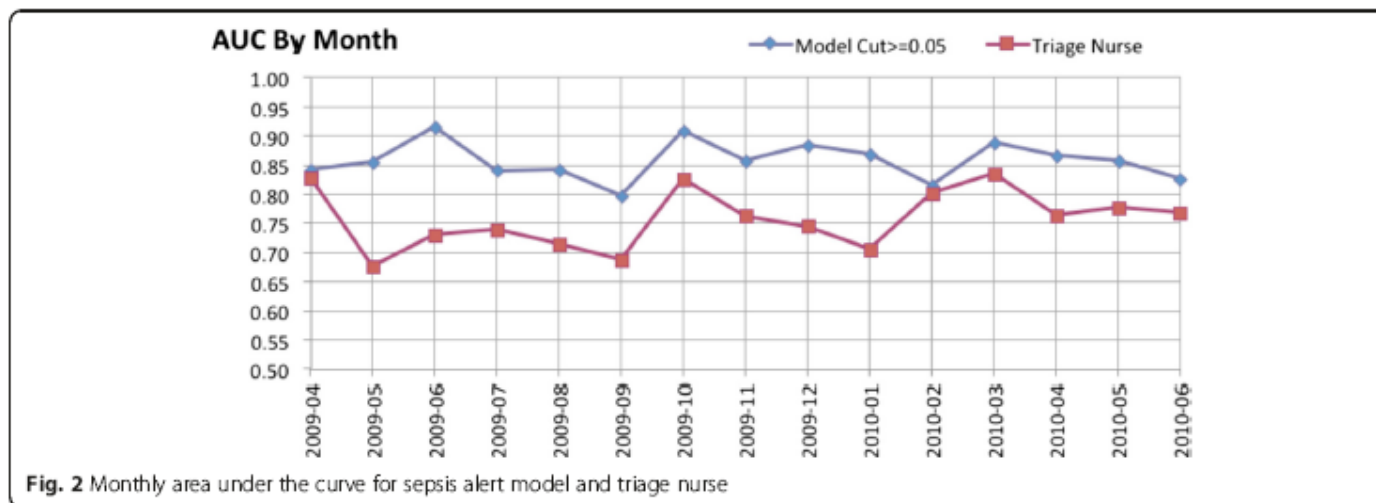
RESEARCH ARTICLE

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Il sistema automatizzato aveva una sensibilita' dell'80% e falsi positivi del 7,2%

Il sistema di triage infermieristico ha dimostrato una *maggior variabilita'*

Limite: ***Troppi falsi positivi.***

The Third International Consensus Definitions for Sepsis and Septic Shock (Sepsis-3)

Mervyn Singer, MD, FRCP; Clifford S. Deutschman, MD, MS; Christopher Warren Seymour, MD, MSc; Manu Shankar-Hari, MSc, MD, FFICM; Djillali Annane, MD, PhD; Michael Bauer, MD; Rinaldo Bellomo, MD; Gordon R. Bernard, MD; Jean-Daniel Chiche, MD, PhD; Craig M. Coopersmith, MD; Richard S. Hotchkiss, MD; Mitchell M. Levy, MD; John C. Marshall, MD; Greg S. Martin, MD, MSc; Steven M. Opal, MD; Gordon D. Rubenfeld, MD, MS; Tom van der Poll, MD, PhD; Jean-Louis Vincent, MD, PhD; Derek C. Angus, MD, MPH

Attenzione al danno d'organo

SOFA score > 2

SOFA (Sequential Organ Failure Assessment score)

Cognome _____ Nome _____ Data di nascita _____ Luogo di nascita _____ Età _____

	0	1	2	3	4	Valore
Respirazione PaO ₂ / FiO ₂ (mmHg)	>400	≤400	≤300	≤200 In ventilazione meccanica	≤100 In ventilazione meccanica	
Emostasi Piastrine (n/mm ³)	>150	≤150	≤100	≤50	≤20	
Fegato Bilirubina (mg/dL)	<1.2	1.2-1.9	2-5.9	6-11.9	>12	
Cardiovascolare		PAM <70mmHg	Dopamina ≤5 y/kg/min o Dobutallina	Dopamina >5 y/kg/min o Adrenalina o Noradrenalina ≤0.1 y/kg/min	Dopamina >15 y/kg/min o Adrenalina o Noradrenalina >0.1 y/kg/min	
Neurologico (Glasgow Coma Scale)	15	13-14	10-12	6-9	<6	
Renale Creatinina (mg/dl) Flusso Urinario		1.2-1.9	2-3.4	3.5-4.9 <500ml/24 ore	5 <200ml/24 ore	

Totale

The Third International Consensus Definitions for Sepsis and Septic Shock (Sepsis-3)

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Sepsi:

qSOFA score > 2

qSOFA (quick SOFA):

- PAS < 100 mmHg
- FR > 22/min
- alterazione dello stato di coscienza

Box 4. qSOFA (Quick SOFA) Criteria

Respiratory rate $\geq 22/\text{min}$

Altered mentation

Systolic blood pressure $\leq 100 \text{ mm Hg}$

The Third International Consensus Definitions for Sepsis and Septic Shock (Sepsis-3)

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Shock settico

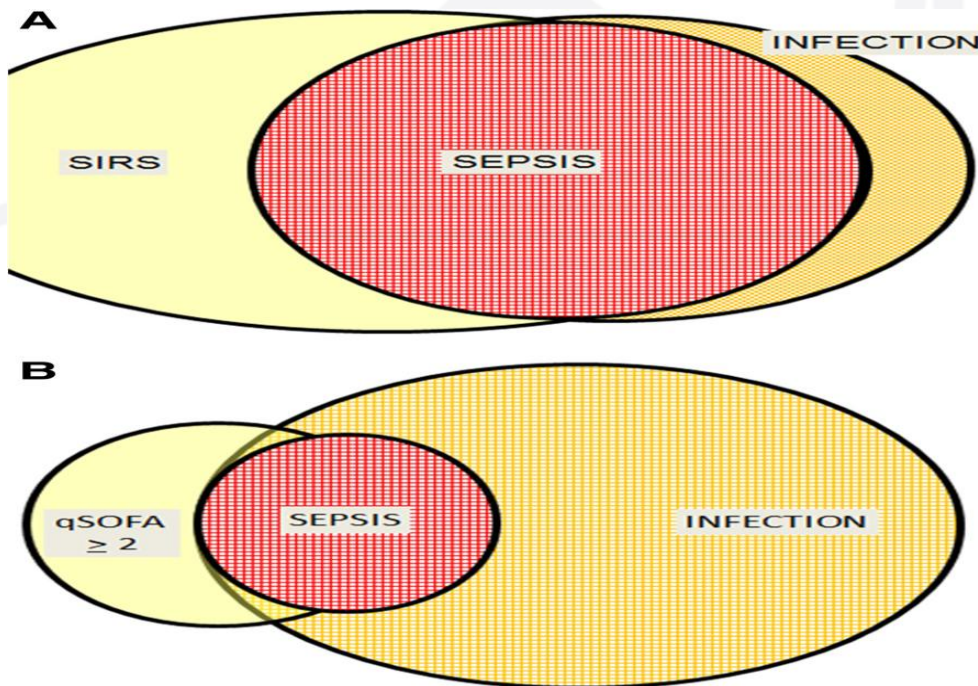
- Sepsi con ipotensione persistente che richieda l'uso di vasopressori per mantenere PAM > 65 mmHg
- lattati > 2 mmol/l

Mortalita' > 40%

Vincent et al. Critical Care 2016 (20) 210

qSOFA does not replace SIRS in the definition of sepsis

Jean-Louis Vincent^{1*}, Greg S. Martin² and Mitchell M. Levy³



❖ *non tutti i pazienti con sepsi hanno qSOFA ≥ 2*

❖ *non tutti i pazienti con qSOFA ≥ 2 hanno una sepsi*



GSA
GLOBAL SEPSIS ALLIANCE

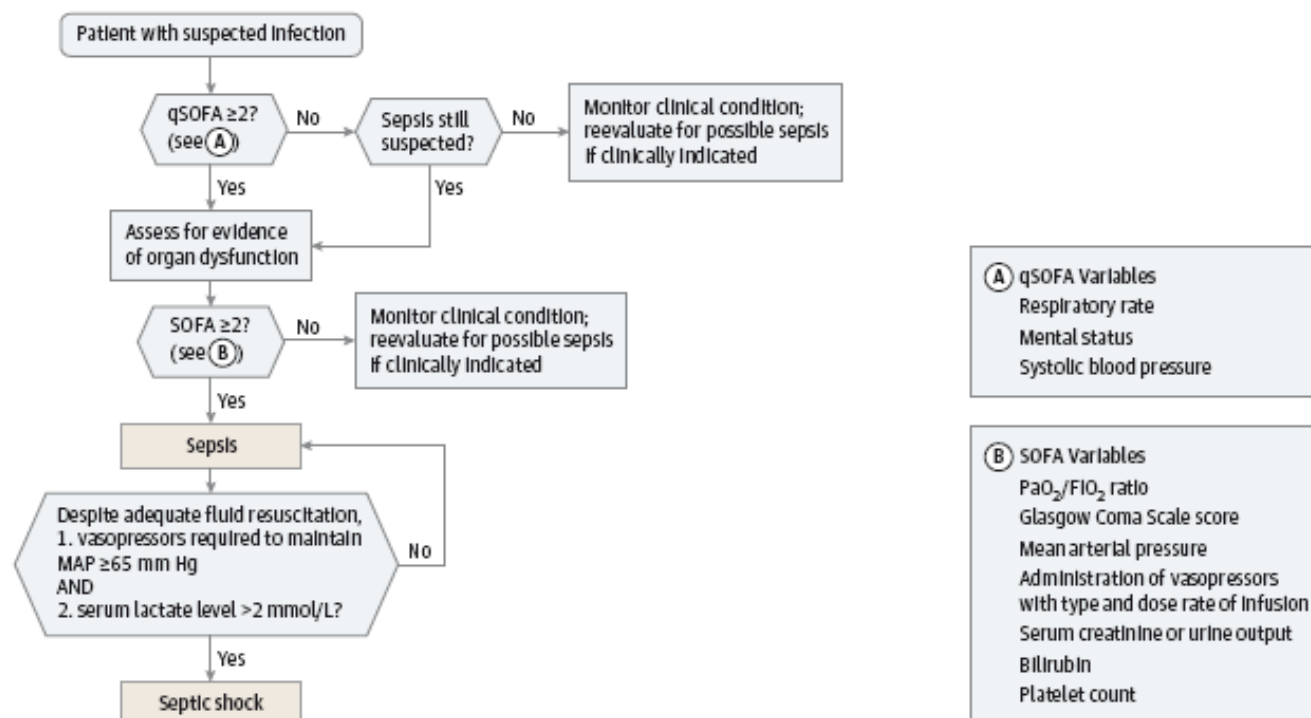
**Statement on the European Society of Intensive Care Medicine (ESICM) and the
Society of Critical Care Medicine (SCCM) Task Force Third International Consensus
Definitions for Sepsis and Septic Shock (Sepsis-3)**

- La Task force raccomanda una validazione all'interno ed all'esterno degli USA delle defizioni proposte
- Ne' il qSOFA ne' SOFA possono essere gli unici elementi nella defizione di sepsi. E' cruciale che se non vi sono 2 o piu' criteri di qSOFA o SOFA e persite il sospetto vengano comunque fatte tutte le indagini ed i trattamenti previsti
- La Task force inoltre sottolinea che i criteri di SIRS sono ancora utili nella identificazione dell'infezione

The Third International Consensus Definitions for Sepsis and Septic Shock (Sepsis-3)

Mervyn Singer, MD, FRCP; Clifford S. Deutschman, MD, MS; Christopher Warren Seymour, MD, MSc; Manu Shankar-Hari, MSc, MD, FFICM; Djillali Annane, MD, PhD; Michael Bauer, MD; Rinaldo Bellomo, MD; Gordon R. Bernard, MD; Jean-Daniel Chiche, MD, PhD; Craig M. Coopersmith, MD; Richard S. Hotchkiss, MD; Mitchell M. Levy, MD; John C. Marshall, MD; Greg S. Martin, MD, MSc; Steven M. Opal, MD; Gordon D. Rubenfeld, MD, MS; Tom van der Poll, MD, PhD; Jean-Louis Vincent, MD, PhD; Derek C. Angus, MD, MPH

Figure. Operationalization of Clinical Criteria Identifying Patients With Sepsis and Septic Shock

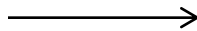


The baseline Sequential [Sepsis-related] Organ Failure Assessment (SOFA) score should be assumed to be zero unless the patient is known to have preexisting (acute or chronic) organ dysfunction before the onset of infection. qSOFA indicates quick SOFA; MAP, mean arterial pressure.

TEAM MULTIDISCIPLINARE (sepsis team Surviving Sepsis Campaign)

INFERMIERE

- INFORMATO



Conoscere e condividere protocolli
e bundles

- CONSAPEVOLE



Lavorare in parallelo:
·Eseguire serie di interventi volti alla
·Identificazione e al trattamento
·Tempestivo del pz settico

- FORMATO



Technical and non technical skills
·Eseguire manovre nei tempi previsti
·Lavorare in team



IMPLICATIONS OF THE NEW INTERNATIONAL SEPSIS GUIDELINES FOR NURSING CARE

By Ruth Kleinpell, RN, PhD, Leanne Aitken, RN, PhD, and Christa A. Schorr, RN, MSN

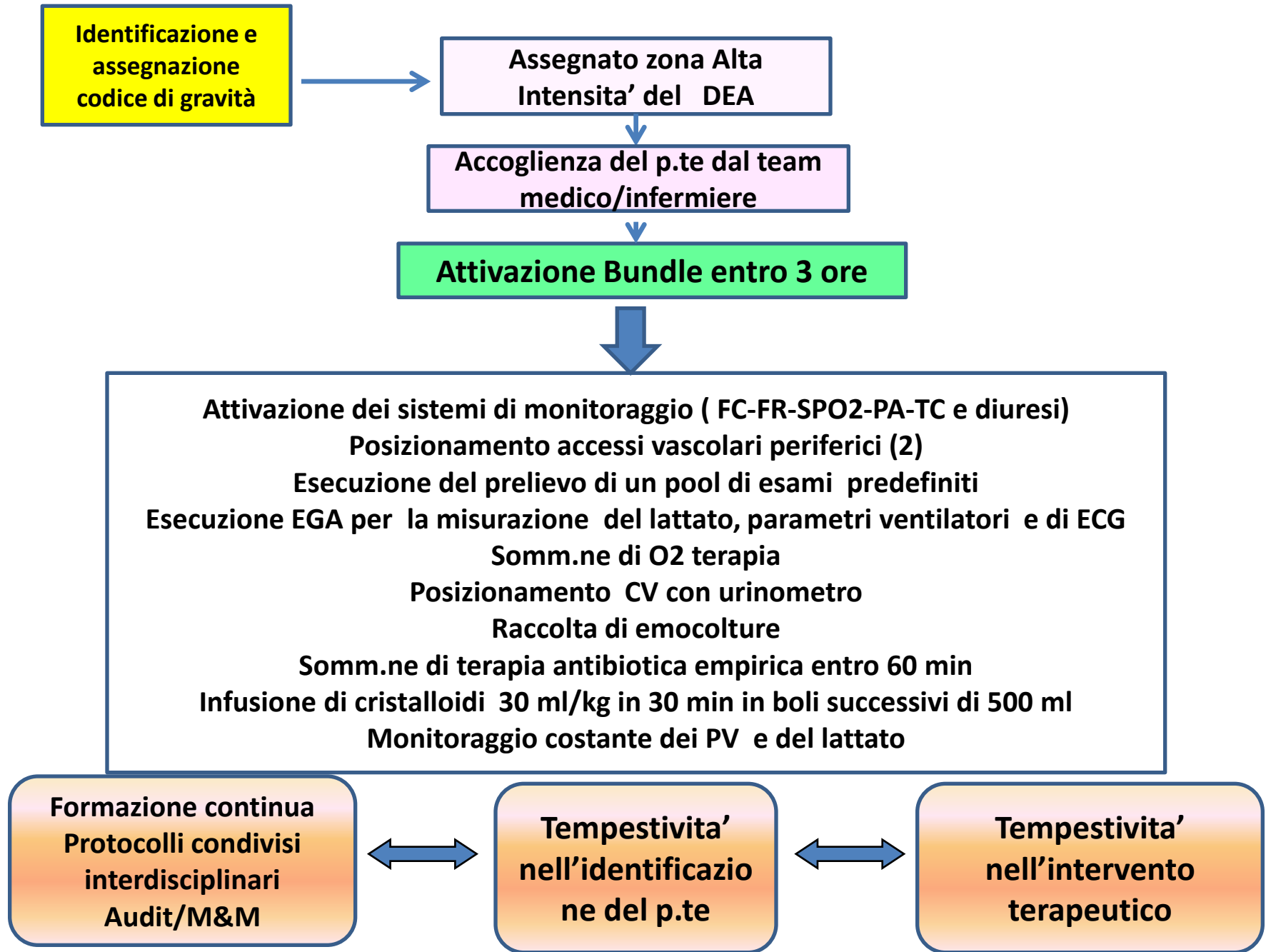
Requisiti fondamentali:

Ambiente attrezzato per il trattamento del p.te (zona alta Intensita' del DEA)

Algoritmi e protocolli condivisi con i seguenti obiettivi:

- **Applicazione dei primi interventi del bundle in autonomia da parte del personale infermieristico**
- **Attivazione immediata del medico seguendo alert codificati**

Percorso del pz con sepsi



Formazione continua dell'equipe multidisciplinare

- Aggiornamento rispetto alle novità della LG
- Implementazione delle LG all'interno della propria realtà
- Mantenimento di un livello di attenzione elevato
- Formazione del personale di nuovo inserimento

Septris: A Novel, Mobile, Online, Simulation Game That Improves Sepsis Recognition and Management

Kambria H. Evans, MEd, William Daines, MD, Jamie Tsui, Matthew Strehlow, MD, Paul Maggio, MD, and Lisa Shieh, MD, PhD

La formazione degli operatori puo' migliorare la diagnosi e il trattamento della sepsi:

L'universita' di Stanford ha sviluppato un videogioco fruibile on line:

<http://med.stanford.edu/septris/>

Septtris: A Novel, Mobile, Online, Simulation Game That Improves Sepsis Recognition and Management

Kambria H. Evans, MEd, William Daines, MD, Jamie Tsui, Matthew Strehlow, MD, Paul Maggio, MD, and Lisa Shieh, MD, PhD

The screenshot displays the SEPTRIS STANFORD simulation interface. At the top, the title 'SEPTRIS STANFORD' is visible on the left, and 'Score: 100' is on the right. Below the title bar, a notification states 'EKG results are in for patient Will'. The main content area is divided into two columns. The left column, labeled 'Matt', contains vital signs: SBP: 89, DBP: 40, HR: 141, Temp: 38.3, RR: 29, and Urine: 0.3. The right column, labeled 'Will', contains a table with two tabs: 'Chart' and 'H&P'. The 'Chart' tab is selected, showing patient information: Gender: Male, Age: 27, Chief Complaint: From the patient's mother: "Fever for 6 hours", History of Present Illness: History of AML diagnosed 2 weeks ago, received induction chemotherapy at this hospital, starting 1.5 weeks ago. WBC has been trending down with treatment. Pain at RUE PICC line. Past Medical History: Depression. Physical Exam: Day of admit: 39.3. Pulse 112, resp 18, BP 108/45. Somnolent but arousable. Site of RUE PICC: erythema, induration, purulent drainage. Diaphoretic. Tachycardic, but otherwise normal cardiac exam. Normal lung exam. Remainder of exam normal. At the bottom, there is a navigation bar with icons for Labs, Imaging, Treat, Consult, and Cultures.

SEPTRIS STANFORD		Score: 100	
EKG results are in for patient Will			
Matt		SIRS + Sepsis Severe + Shock	
SBP:	89	Temp:	38.3
DBP:	40	RR:	29
HR:	141	Urine:	0.3
Chart		H&P	
Gender: Male			
Age: 27			
Chief Complaint:			
From the patient's mother: "Fever for 6 hours"			
History of Present Illness:			
History of AML diagnosed 2 weeks ago, received induction chemotherapy at this hospital, starting 1.5 weeks ago. WBC has been trending down with treatment. Pain at RUE PICC line.			
Past Medical History:			
Depression			
Physical Exam:			
Day of admit: 39.3. Pulse 112, resp 18, BP 108/45. Somnolent but arousable. Site of RUE PICC: erythema, induration, purulent drainage. Diaphoretic. Tachycardic, but otherwise normal cardiac exam. Normal lung exam. Remainder of exam normal.			

Key messages I

- Utilizzare al triage strumenti semplici (il qSOFA e magari lo Shock Index) integrati nella cartella informatizzata
- *Prevedere un sistema di allerta automatico*
- Mantenere elevato il sospetto di infezione (i criteri di SIRS possono essere utili)
- Tenere sempre presente i fattori di rischio per infezioni gravi (PIRO)

Key messages II

- Nella gestione dei pazienti con sepsi il “team work” e' fondamentale

Identificazione dei pazienti al triage

Lavoro in parallelo su protocolli condivisi

Key messages III

- Fondamentale la formazione continua degli operatori sanitari

Riunioni di aggiornamento

Simulazione

M&M e Audit clinici



Grazie.

Germana Ruggiano