

**Table 1**  
Risk factors that predisposed older patients to psychosocial emergencies.

>5 medications	47.5%
Comorbidity	35.5%
Hospitalization in past 6 months	30.7%
Social isolation	28.3%
History of diabetes	25.4%
Living alone	25.1%
Functional disability	20.6%
Memory impairment	18.8%
Recent decline in function	16.1%
Terminal illness	15.2%
Premorbid need for help	13.1%
Extreme age	10.4%
Alcohol/drug use	8.6%
Poor nutrition	7.5%
Depression	6.8%
Poor self-related health	6.6%
Lack of transportation	5.8%
Language barrier	1.3%
Homeless	0.8%
Info transfer problems	0.8%

**Table 2**  
Spectrum of psychosocial problems in elderly patients.

Year	2013–2014 (N = 1309)	1988–1989 (N = 354)
Caregiver relief	70%	61%
Medication assistance	60%	4%
Emotional distress	30%	16%
Isolation	30%	10%
Self-neglect	25%	21%
Psychiatric	25%	5%
Alcohol/drugs	13%	9%
Terminal illness	9%	4%
Housing	7%	3%
Access to medical/dental care	6%	3%
Medical equipment	5%	2%
Transportation	4%	5%
Nutrition	4%	7%
Financial assistance	4%	2%
Abuse/caregiver neglect	3%	4%
Public housing assist	1%	3%
Marital issues	1%	<1%
Legal assistance	1%	<1%

During the past 24 years at our institution, the number and spectrum of psychosocial emergencies in older patients has significantly changed. Identifying patient needs and barriers to care after discharge from the ED is of high importance. Previous studies have found that patients encounter unanticipated needs or have problems which emerged after discharge and that interventions to ensure post-hospitalization follow-up may improve patient outcomes [7]. We found that there are greater numbers of “high-risk” elderly dealing with caregiver exhaustion, financial constraints, functional decline, depression, self-neglect, and social isolation. Although community-based services can be effective in addressing many of these needs, a growing proportion of elderly with psychosocial emergencies require a change in their living situation upon discharge from the ED. This functions as an added stressor, and the needs and mental state of the patient and their families or caregivers must be taken into account. It is also essential that vital information regarding functional status, cognitive status, medication lists and other directives are easily accessible by healthcare workers to properly support any transitional care both within and outside the ED [8]. Instruction prior to discharge and increased follow-up after discharge may help alleviate some barriers to care and reduce the numbers of patients necessitating admission or readmission to healthcare facilities.

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22 May 2018

<https://doi.org/10.1016/j.ajem.2018.05.051>

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## Fluid resuscitation in pre-hospital patients with septic shock: One size does not fit all



To the editor:

We read the enchanting article by Jouffroy [1] et al., which is about fluid resuscitation in pre-hospital management of septic shock. We have some questions and different views after reading the article.

First of all, there are some mistakes in the study, as Table 1 in the commented paper [1] shows, the deceased patients at Day 28 had the same mean value of diastolic blood pressure as systolic blood pressure (both are  $58 \pm 19$  mm Hg), it is nearly unbelievable. What is more,

Abbreviations: IBW, ideal body weight; SSC, Surviving Sepsis Campaign; CVP, central venous pressure; MAP, mean arterial pressure; ScvO<sub>2</sub>, Superior vena cava oxygenation saturation; SvO<sub>2</sub>, mixed venous oxygen saturation.

according to the data provided from the alive group and deceased group in Table 1, the mean value of mean blood pressure, systolic blood pressure, diastolic blood pressure, heart rate, pulse oximetry in the overall population should be 66, 79, 56, 116 and 88 respectively, rather than 72, 99, 60, 121 and 83 respectively, so we suggest the authors check their data again.

Secondly, Jouffroy [1] et al. claimed they defined optimal fluid expansion as  $>20$  ml/kg ideal body weight (IBW) according to 2012 version [2] of Surviving Sepsis Campaign (SSC) guidelines, however, we do not agree with this viewpoint. As a matter of fact, the 2012 version [2] of SSC guidelines recommended a minimum of 30 ml/kg of crystalloids should be administered as an initial fluid challenge in patients with septic shock, while, the 2012 SSC guideline [2] recommended to deliver a bolus of 20 ml/kg of crystalloids over 5–10 min for pediatric septic shock patients not for the adults! The inadequate initial fluid resuscitation in adults may contribute mostly to the conclusion in the study [1] that fluid volume expansion indexed on IBW  $>20$  ml/kg was associated with decreased mortality. Thus, we suggest the authors divide the 3 resuscitation groups according to the cut-offs of “ $<30$  ml/kg IBW”, “30 ml/kg–40 ml/kg” and “ $>40$  ml/kg”, which would be more scientific than the cut-offs of “ $<10$  ml/kg IBW”, “10 ml/kg–20 ml/kg” and “ $>20$  ml/kg”.

Thirdly, fluid resuscitation is essential and necessary for septic shock patients, but overzealous fluid administration can do harm too. One size does not fit all for fluid resuscitation in pre-hospital patients with septic shock. For patients with acute lung injury [3], acute respiratory distress syndrome or congestive heart failure second to septic shock, conservative fluid strategy should be applied, as sometimes positive fluid balance is associated with an increased risk of mortality in septic shock [4]. Multiple methods can be combined to assess the volume status and fluid responsiveness of the septic shock patients, including physical examination (mottled, clammy or dry skin, oliguria, altered mental state), laboratory parameters (blood lactate, blood urea nitrogen/creatinine ratio, urinary sodium), bedside ultrasound, chest X-ray, central venous pressure (CVP), passive leg-raising test, fluid challenge and etc. [5], though some are unavailable in the pre-hospital environment, the importance of assessing the volume status and fluid responsiveness should not be forgotten or ignored.

Fourthly, as the 2012 SSC guideline [2] stressed, not only fluid resuscitation was vital for reducing the mortality of septic shock patients, but also obtaining blood cultures, administration of antibiotics, measuring lactate levels, applying vasopressors if needed and achieving the resuscitation goals (CVP 8–12 mm Hg, mean arterial pressure (MAP)  $\geq 65$  mmHg, urine output  $\geq 0.5$  ml/kg/h, Superior vena cava oxygenation saturation (ScvO<sub>2</sub>)  $\geq 70\%$  or mixed venous oxygen saturation (SvO<sub>2</sub>)  $\geq 65\%$ ) correlated closely with the mortality of the patients, and these vital elements had been integrated as 3 h/6 h bundles and got worldwide spread through the dissemination of SSC guidelines. Nevertheless, in the multivariate analysis of factors associated with mortality at Day 28 of septic shock patients in the commented paper [1], only age, immunosuppression, pre-hospital duration and volume of fluid were adjusted as covariables, disease severity and the aforementioned vital elements of bundles had not been included into the analysis, thus, we are afraid that the results may not be quite accurate.

At last, we appreciate Jouffroy et al. for their innovative and meaningful study, but the interpretation of their work should be cautious and further rigorous studies are warranted.

## Declarations

### Ethical Approval and Consent to Participate

Not applicable.

### Consent for Publication

Not applicable.

## Availability of Supporting Data

Not applicable.

## Competing Interests

The authors declare that they have no competing interests.

## Funding

None.

## Acknowledgments

None.

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6 May 2018

<https://doi.org/10.1016/j.ajem.2018.05.056>

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## Reply to Zhou et al.: “fluid resuscitation in pre-hospital patients with septic shock: one size does not fit all”



### Dear Editor,

We thank Dr. Zhou et al. [1] for their interest and relevant comments about our article [2].

First, as they underlined in their manuscript [1], typing errors are present in Table 1 of our article [2]. We apologize for these typing errors and we submit a corrected version of the Table 1 to the Editor.