Table 1
Healthcare professional comparison of mean weight by practice type.

Practice	Actual weight[a]	Weight guessed[a]	Years practice[b]	N	Range[a]	Sig.[c]
Attending	166	155	14.3	4	−45 to 0	0.033
Resident	191	173	2.6	5	−66 to 1	0.007
Nurse	160	152	8.6	5	−70 to 0	0.224

Comparison between the 3 groups did not reveal a significant difference in average weight guessed ($p = 0.37$).
Nurses found to be most accurate with average 8.83 lbs under actual weight estimation. Attendings found to be most precise with narrowest range of 45 lbs under to 0.
[a] Weight in mean lbs.
[b] Years practice averaged per provider.
[c] Paired samples test.

We further analyzed by practice type. Comparison between the 3 subgroups no difference in average weight guessed compared to actual weight ($p = 0.37$, Table 1).

Attending physicians were found to be the most precise yet farthest off by 45 lbs and nurses were found to be the most accurate (8.83 lbs average guess under bodyweight).

When assessed subjects were analyzed by body type (normal vs overweight) healthcare professionals guessed on average 7.6 lbs under actual weight ($p = 0.06$) and 19.0 lbs under actual weight ($p < 0.001$) respectively. They were most accurate at estimating the normal bodyweight females with a mean error of −1.7 lbs ($p = 0.63$, Table 2).

Healthcare professionals with <10 years of experience guessed on average 14 lbs under actual weight ($p = 0.005$) and those with >10 years guessed 8.3 lbs under actual weight ($p = 0.28$).

While we were closer to estimating for normal subjects, this poses a concern for our overweight patients. Estimates that deviate >10% from actual weight could make treatment itself life threatening [3]. One such example is with administration of alteplase. While there is a larger fear of overdosing, one study shower under dosing alteplase is associated with unsuccessful mechanical thrombectomy [4].

We found no significant difference between attending physicians, residents, and nurses or their years of experience.

However, groups with greater experience demonstrate greater accuracy and precision (Table 2).

Of note, we were nowhere near as effective at guessing weight as the trained professional. The carney had 2 seasons of training, working 8 h a day, for 2 months per season. While we could likely become more effective at guessing weight with experience, this much training would not be plausible for providers. These findings support use of emergency gurneys with built in scales. While an added expense, they may lower the risk of mis-dosing drug administration, especially in overweight patients.

A study limitation is with the calculation of BMI by applying an average US height to males and females. This inferred BMI may bias our subgroup analysis.

Our study findings do suggest that healthcare professionals are quite inaccurate at visually estimating weight thus supporting the use of more objective weight measurement in the emergency department.

Table 2
Error (accuracy) by all healthcare professionals based on weight and gender subgroups.

Body habitus	Mean error[a]	CI[a]	Sig.[b]
Overweight			
Male	−20.8	3.5–12.5	0.001
Female	−16.4	3.8–28.5	0.022
Normal weight			
Male	−15.1	8.5–21.6	0.005
Female	1.7	−12.1-8.6	0.636

[a] Weight in lbs.
[b] 2 tailed paired samples test.

J. Orlando, DO
V.A. LaBond, MD*
Genesys Regional Medical Center, One Genesys Parkway, Grand Blanc, MI 48439, United States
*Corresponding author.
E-mail address: james.orlando@ascension.org (J. Orlando), labond248@comcast.net (V.A. LaBond).

15 May 2018

https://doi.org/10.1016/j.ajem.2018.06.014

References

[1] Pennsylvania Patient Safety Authority. Medication errors: significance of accurate patient weights. Pa Patient Saf Advis 2009;6:10–5.
[2] Herout PM, Erstad BL. Medication errors involving continuously infused medications in a surgical intensive care unit. Crit Care Med 2004;32:428–32.
[3] Chung LS, Tkach A, Lingenfelter EM, et al. tPA prescription and administration errors within a regional stroke system. Journal of Stroke And Cerebrovascular Diseases: The Official Journal of National Stroke Association 2016;25(3):565–71.
[4] Tissue Plasminogen Activator for Acute Ischemic Stroke. The national institute of neurological disorders and stroke rt-PA stroke study group. N Engl J Med 1995;333:1581–7.

QSOFA score in identifying the septic patients according to Sepsis 1.0 or Sepsis 2.0, putting new wine into old bottles?

To the editor:

We read the interesting article by Barbara et al. [1], who conducted a retrospective chart review study and found that emergency medical services (EMS) patients with positive quick sequential organ failure assessment (qSOFA) were more likely to be septic upon admission to the emergency department (ED). Though this study sounds scientific, we still have some questions and different views after reading the article [1].

First of all, Barbara et al. [1] aimed to study whether EMS patients who qualified for all the qSOFA criteria correlated with an ED identification of sepsis, in fact, the qSOFA score is composed of 3 basic elements — respiratory rate (RR) ≧22 beats/min, altered mentation and systolic blood pressure (SBP) ≦100 mm Hg according to the Sepsis 3.0 [2], however, in the second paragraph of 'Methods' section in the commented paper [1], RR > 22 beats/min and SBP < 90 mm Hg was regarded as two components of qSOFA score, how to explain this discordance? Furthermore, Barbara et al. [1] required all the 3 basic elements of qSOFA score to be satisfied to define a positive qSOFA score, while the original Sepsis 3.0 study [2] claimed that any 2 of the 3 elements of qSOFA score were met could be defined as positive qSOFA score, thus how to interpret the difference?

Secondly, in Table 2 of the commented paper [1], lactate concentration was classified as one criteria of Systemic Inflammatory Response Syndrome (SIRS), as a matter of fact, though blood lactate is vital in the diagnosing and treating of sepsis, blood lactate is not a part of SIRS [3] all the time, incorporating blood lactate as one criteria of SIRS will make it easier to achieve ≥2 SIRS criteria and thus generate more patients with 'sepsis'. Furthermore, the percent of immature neutrophils ("bands") is one criteria of SIRS but omitted by Table 2.

Thirdly, there had not been a golden standard for sepsis existed though the international definition for sepsis had gone through 3 versions (Sepsis 1.0 [3], Sepsis 2.0 [4] and Sepsis 3.0 [2]) from 1991 to 2016, the newest version (Sepsis 3.0) developed and recommended qSOFA score to prompt more rapid identification of sepsis, nevertheless, the commented paper [1] chose the SIRS criteria as its diagnostic criteria and investigated the ability of positive qSOFA in recognizing the 'septic' patients, in other words, the authors want to compare different diagnostic criteria for the same patients without golden standard existing as a reference, which just like putting new wine into old bottles, so what is the significance and value of doing like this? Our understanding of sepsis has gone further since 25 years has passed by, sepsis is now defined as life-threatening organ dysfunction caused by a dysregulated host response to infection which is associated with an in-hospital mortality ≧10% as per Sepsis 3.0 [2], while, in the article by Barbara et al. [1], 'sepsis' was associated with only 6.3% ED mortality per Sepsis 1.0 [3] or Sepsis 2.0 [4], thus the new criteria had an obvious superiority than the old criteria in picking out the patients who will have the highest morality, differentiating sepsis from uncomplicated infection and being in accord with the meaning of "life-threatening" [5].

Fourth, the 3 basic elements(RR, SBP and level of consciousness) of qSOFA score all can change with time, thus the time window of qSOFA score calculation is important, the original study [6] which developed qSOFA score chose the time window of '48 hours before to 24 hours after the onset of infection', however, the commented study [1] had no limits in the time window of qSOFA score calculation, thus we are afraid that qSOFA score might have a biased discerning power of 'sepsis'.

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

Abbreviations

EMS	emergency medical services
qSOFA	quick sequential organ failure assessment
ED	emergency department
RR	respiratory rate
SBP	systolic blood pressure
SIRS	systemic inflammatory response syndrome

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.

Xianshi Zhou
Emergency Department, Guangdong Provincial Hospital of Chinese Medicine, Guangzhou 510120, China

Fanwei Wu
Famous doctor hall, Bao' an TCM hospital group, Shenzhen 518133, China
Corresponding author: Famous doctor hall, Bao'an TCM hospital group, at Number 25 in the 2nd Yu'an Road, Bao'an District, Shenzhen 518133, China.
E-mail address: wfwiso9000@21cn.com.

3 June 2018

https://doi.org/10.1016/j.ajem.2018.06.017

References

[1] Barbara P, Graziano C, Caputo W, et al. The quick sequential organ failure assessment (qSOFA) identifies septic patients in the out-of-hospital setting. Am J Emerg Med 2018;36:1022–6. https://doi.org/10.1016/j.ajem.2018.01.073 (PMID: 29426799).
[2] Singer M, Deutschman CS, Seymour CW, et al. The third international consensus definitions for sepsis and septic shock (Sepsis-3). JAMA 2016;315:801–10. https://doi.org/10.1001/jama.2016.0287 (PMID: 26903338).
[3] Bone RC, Balk RA, Cerra FB, et al. Definitions for sepsis and organ failure and guidelines for the use of innovative therapies in sepsis. Chest 1992;101:1644–55. https://doi.org/10.1378/chest.101.6.1644 (PMID: 1303622).
[4] Levy MM, Fink MP, Marshall JC, et al. 2001 SCCM/ESICM/ACCP/ATS/SIS international sepsis definitions conference. Crit Care Med 2003;31:1250. https://doi.org/10.1097/01.CCM.0000050454.01978.3B (PMID: 12682500).
[5] Zhou X, Ye Y, Li J, et al. Infection should be an essential element of sepsis and the superiority of the newest sepsis definition. Am J Emerg Med 2017;35:797–8. https://doi.org/10.1016/j.ajem.2017.02.019 (PMID: 28209391).
[6] Seymour CW, Liu VX, Iwashyna TJ, et al. Assessment of clinical criteria for sepsis: for the third international consensus definitions for sepsis and septic shock (sepsis-3). JAMA 2014;315:762–74. https://doi.org/10.1001/jama.2016.0288 (PMID: 26903335).

Emergency department utilization by newly pregnant adolescents: A community-based study

Teen pregnancy and birth rates in the United States remain among the highest of industrialized nations, with approximately 25% of girls becoming pregnant before age 20 [1]. Early diagnosis of pregnancy in this age group is of utmost importance. Adolescents are at an increased risk for many complications during pregnancy such as high blood pressure, anemia, having low birthweight babies and premature birth, and adolescents also tend to have lower rates of prenatal care [2, 3]. Delayed or absence of prenatal care for pregnant adolescents has been shown to correlate with higher rates of preterm birth, increased infant mortality rates, and other adverse pregnancy outcomes [4, 5]. Early detection and diagnosis of pregnancy in adolescents helps to decrease perinatal risks, and teenage women presenting to the emergency department (ED) with a variety of specific or nonspecific complaints should be routinely screened for pregnancy. Some teens may present with classic pregnancy symptoms of amenorrhea, nausea, vomiting, breast tenderness and/or weight gain, while others may present with vague symptoms suggestive of other ailments such as dizziness, abdominal pain, or simply feeling unwell [5]. Given the need to better understand and diagnose teen pregnancy in the ED, the primary objective of this