

RCEM COVID-19 CPD Journal club  
Weekly top 5 papers

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The RCEM Top 5 COVID-19 papers are compiled from expert recommendations, weekly systematic searches, and contributions from the FOAMeD community. We have distilled the torrent of research down into 5 bite-size reviews, but if you have the head space for ten more fantastic papers check out the Director's Cut. If an interactive live journal club captures your interest then checkout the webinar Tuesdays at 11:00, [click here to register](#).

The following papers have been split into 3 categories that will allow you to focus on those that are most vital to your practice.

- Worth a peek: interesting, but not yet ready for prime time
- Head Turner: new concepts
- Game Changer: this paper could/should change practice

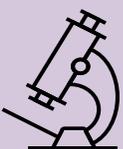
**Presenting Characteristics, Comorbidities, and Outcomes Among 5700 Patients Hospitalized With COVID-19 in the New York City Area by Richardson et al <sup>1</sup>**

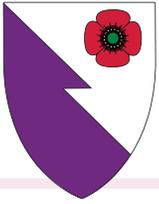
Topic: Pathophysiology

Rating: Head turner

Scout: Professor Simon Carley

New York has been hit hard by Covid-19. This paper looks at the records of 5700 hospitalised patients and whilst observational and retrospective there are some really interesting findings here. In common with Chinese and Italian data, Male sex, advancing age, hypertension, diabetes and obesity are associated with poor outcomes. 14.2% of patients ended up on ITU and 12.2% were ventilated, although thresholds for admission and ventilation may be different in the USA and so that may not reflect practice here. For those ventilated the mortality reported to be 88% but, like many papers that have reached publication, many patients have not yet completed their illness and are still in ICU, so the eventual mortality will likely be much lower. Interestingly this data supports the concerns raised about hypertensive patients taking ACE inhibitors and Angiotensin Receptor Blockers. The mortality in these patients was higher, perhaps because they may express more ACE-2 receptors on cells (these patients up-regulate receptors as a result of inhibition/blockage of ACE-1 receptors by their medication), with hypertension overall having a higher mortality even if not an ACEI or ARB.





### Assessment of N95 respirator decontamination and re-use for SARS-CoV-2 by Fischer et al <sup>2</sup>

Topic: PPE

Rating: Head turner

Scout: Professor Rick Body



With PPE shortages, many emergency physicians are being advised to re-use PPE, including N95 masks (~FFP2). But can they be effectively decontaminated, and do they maintain their integrity if re-used? In this paper, the authors decontaminated N95 masks repeatedly with four methods (including 70% ethanol, UV light, dry heat and vaporized hydrogen peroxide). They then evaluated the effectiveness of decontamination and

evaluated fit testing of the masks after several decontamination rounds. 70%

ethanol was very effective, killing SARS-CoV-2 quickly, but ethanol also rapidly degraded these fabric masks. However, the masks could be reused up to three times after decontamination with UV light (which was effective, but slower) or vaporized hydrogen peroxide (which was rapidly effective). But does your ED have that equipment?



### Critically ill SARS-CoV-2-infected patients are not stratified as sepsis by the qSOFA by Ferreira et al <sup>3</sup>

Topic: Prognosis

Rating: Worth a peek

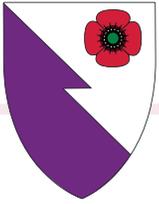
Scout: Dr Govind Oliver



We have already seen attempts to develop novel prognostic decision aids for COVID-19, but could existing scoring systems be repurposed? The quickSOFA (qSOFA) score is widely used for patients with sepsis; a qSOFA  $\leq 1$  carries a 3% mortality compared to 24% with a qSOFA  $\geq 2$ . In this single centre observational cohort study of 52 critically ill SARS-CoV-2 patients, Ferreira et al. assessed whether a qSOFA  $\geq 2$  could be an appropriate

bedside clinical score to identify patients at risk of requiring higher level care. Of the 52 patients, 73% received invasive ventilation and 27% non-invasive ventilation (NIV). 6 were classified as having mild Acute Respiratory Distress Syndrome, 23 moderate and 9 severe. Each patient's qSOFA was calculated using the worst recording for each parameter prior to ICU admission; 100% of patients receiving NIV and 87% receiving invasive ventilation had a qSOFA  $\leq 1$ . Whilst case fatality data was not available in this early report due patients receiving ongoing treatment, these findings strongly suggest that qSOFA is not appropriate for use in patients with COVID-19.





**Early Self-Proning in Awake, Non-Intubated Patients in the Emergency Department: A Single ED's Experience During the COVID-19 Pandemic by Caputo et al<sup>4</sup>**

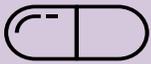
Topic: Treatment

Rating: Head turner

Scout: Dr Salim R. Rezaie (REBEL EM)



Could proning patients in ED be beneficial during this pandemic? This single centre observational cohort study describes an urban ED's experience of early self-proning in 50 awake, non-intubated suspected COVID-19 patients. This was a convenience sample of individuals for full escalation of care, able to self-prone, presenting with hypoxia ( $SpO_2 < 90\%$ ) which did not adequately respond to supplemental oxygen and were later confirmed to have SARS-CoV-2. The majority of patients self-presented as walk-ins (80%) and the median age was 59 years (60% male). The median presenting  $SpO_2$  was 82% and 75% in those with and without oxygen; these improved to a median  $SpO_2$  of 84% following hospital supplemental oxygen (38 via non-rebreather, 12 with 5 L/m nasal cannulae).  $SpO_2$  significantly improved to a median of 94% after 5 minutes of proning. 13 patients went on to be intubated but only 3 of these in the first hour. Further study is clearly required to examine these associations but in the correct patient, the low risk intervention of awake proning could be carefully considered for use.



**Acute-onset smell and taste disorders in the context of Covid-19: a pilot multi-center PCR-based case-control study by Beltrán-Corbellini et al<sup>5</sup>**

Topic: Epidemiology

Rating: Worth a peek

Scout: Dr Patricia van den Berg

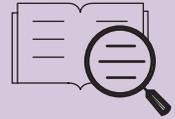


This two center case-control study from Spain looked at comparing the prevalence of smell and/or taste disorders (STD) in patients with a PCR confirmed COVID-19 diagnosis to those who had been diagnosed with influenza using a questionnaire as previous reported reports on the prevalence of STD in COVID-19 has been highly variable. Their findings suggest that new onset STD might be significantly more common in COVID patients 39.2% vs. 12.5% (OR 4.5,  $p < 0.05$ ). COVID-19 patients with STD also appeared to be significantly younger than their counterparts. Mean duration was reported at  $7.5 \pm 3.2$  days. However we have to bear in mind that the overall numbers of patients included have been small with 79 COVID and 40 influenza patients. Additionally, the questionnaire for STD symptoms was administered retrospectively to patients with an influenza diagnosis in January 2020 which means there is a likelihood of recall bias and underreporting of symptoms. In summary, there certainly appears to be a signal in the literature that acute onset STD might be associated with a COVID-19 diagnosis and it is certainly worth enquiring about it in your history taking.





### In summary

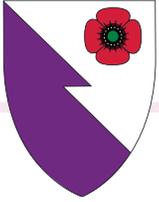


Richardson et al map the pandemic in New York <sup>1</sup>  
Fischer et al gave us N95 reuse options that we hope we won't need <sup>2</sup>  
Freund et al warned us not to use qSOFA in COVID-19 <sup>3</sup>  
Caputo et al signalled that proning might be a useful tool <sup>4</sup>  
Beltrán-Corbellini et al sniffed out that anosmia may be more specific to COVID-19 <sup>5</sup>

### References



- 1) Richardson, S., Hirsch, J.S., Narasimhan, M., Crawford, J.M., McGinn, T., Davidson, K.W., Barnaby, D.P., Becker, L.B., Chelico, J.D., Cohen, S.L. and Cookingham, J., Presenting Characteristics, Comorbidities, and Outcomes Among 5700 Patients Hospitalized With COVID-19 in the New York City Area. JAMA.
- 2) Fischer, R., Morris, D.H., van Doremalen, N., Sarchette, S., Matson, J., Bushmaker, T., Yinda, C.K., Seifert, S., Gamble, A., Williamson, B. and Judson, S., 2020. Assessment of N95 respirator decontamination and re-use for SARS-CoV-2. medRxiv.
- 3) Freund Y, Lemachatti N, Krastinova E, et al. Prognostic accuracy of sepsis-3 criteria for in-hospital mortality among patients with suspected infection presenting to the emergency department. JAMA. (2017;317:301–8)
- 4) Caputo, N.D., Strayer, R.J. and Levitan, R. (2020), Early Self-Prone in Awake, Non-intubated Patients in the Emergency Department: A Single ED's Experience during the COVID-19 Pandemic. Acad Emerg Med. Accepted Author Manuscript. doi:10.1111/acem.13994
- 5) Beltrán-Corbellini, Á., Chico-García, J.L., Martínez-Poles, J., Rodríguez-Jorge, F., Natera-Villalba, E., Gómez-Corral, J., Gómez-López, A., Monreal, E., Parra-Díaz, P., Cortés-Cuevas, J.L., Galán, J.C., Fragola-Arnau, C., Porta-Etessam, J., Masjuan, J. and Alonso-Cánovas, A. (2020), Acute-onset smell and taste disorders in the context of Covid-19: a pilot multicenter PCR-based case-control study. Eur J Neurol. Accepted Author Manuscript. doi:10.1111/ene.14273



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