15.6 days (1 – 63). The average number of days from admission to death was 8.6 (0 – 48).

Conclusion In our cohort of patients who received CPAP as a ceiling of treatment mortality was high, especially compared to patients eligible for invasive mechanical ventilation. We highlight the need for early treatment escalation decisions, informed discussions with patients and relatives and involvement of palliative care where appropriate. These data are potentially limited by variation in practice between sites, and further robust evidence is needed to establish patient selection and timing of CPAP.

REFERENCE

1. NHS England and NHS Improvement Guidance for the role and use of non-invasive respiratory support in adult patients with COVID19 (confirmed or suspected), 6 April 2020, Version 3.

Abstract S97 Figure 1

Conclusions This study demonstrates that NEWS/NEWS2 are good discriminators of either death or ICU admission within 24-hours of a vital sign set in patients with COVID-19. There was very little difference between the AUROC values in the COVID-19 positive cohort compared to any of our other study cohorts suggesting amendments to NEWS/NEWS2 are unnecessary when evaluating patients with COVID-19. Our results support the recommendations by the RCP, WHO and NICE for the use of NEWS/NEWS2 for the assessment of acute-illness severity in patients with COVID-19.

S97 THE PERFORMANCE OF THE NATIONAL EARLY WARNING SCORE AND NATIONAL EARLY WARNING SCORE 2 IN HOSPITALISED PATIENTS INFECTED BY THE SEVERE ACUTE RESPIRATORY SYNDROME CORONAVIRUS 2 (SARS-COV-2)
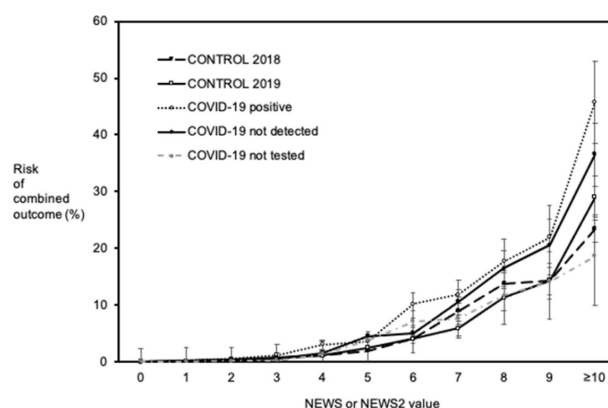
[1]L Fox, [2]I Kostakis, [3]C Price, [3]G Smith, [2]D Prytherch, [1]P Meredith, [1]A Chauhan. [1]*Portsmouth Hospitals University NHS Trust, Portsmouth, UK;* [2]*University of Portsmouth, Portsmouth, UK;* [3]*Bournemouth University, Bournemouth, UK*

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Introduction The National Early Warning Score (NEWS) and its update, NEWS2, are validated scoring systems for identifying patient deterioration in a range of clinical conditions, including infection and sepsis. Coronavirus disease 2019 (COVID-19), caused by the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2), has a variable clinical presentation from asymptomatic to life-threatening multi-organ failure. There is little research demonstrating NEWS/NEWS2 performance in COVID-19. Therefore, we sought to evaluate their predictive ability.

Methods In the study hospital, all patient vital signs are documented in real-time using commercially available, electronic software and we extracted this data. Using receiver-operating characteristic analyses, we used the area under the receiver operating characteristic (AUROC) curve to evaluate the performance of NEWS/NEWS2 to discriminate the combined outcome of either death or intensive care unit (ICU) admission within 24-hours of a vital sign set in five cohorts: COVID-19 positive (n=405), COVID-19 not-detected (n=1717), COVID-19 not tested (n=2952), Control 2018 (n=6275), Control 2019 (n=6524).

Results After exclusions, the main data extract (01/01/2018 – 03/05/20) contained 2,867,313 vital sign sets from 97,669 admissions. Admissions in the COVID-19 positive and COVID-19 not-detected cohorts were older (p<0.001), and those in the COVID-19 positive cohort were more likely to be male (p<0.001), with a higher mean EWS during their stay. Figure 1 demonstrates an increasing risk of the combined outcome with increasing NEWS/NEWS2 value in all 5 cohorts. The AUROC values for NEWS/NEWS2 for the combined outcome of either death or ICU admission were: COVID-19 positive 0.880 (0.866–0.894); COVID-19 not-detected 0.881 (0.867–0.895); COVID-19 not tested 0.869 (0.842–0.896); Control 2018 0.896 (0.886–0.906) and Control 2019 0.844 (0.831–0.857).

S98 IMPROVED COVID-19 SURVIVAL IN ACUTE HOSPITAL SETTINGS FOLLOWING IMPLEMENTATION OF A REAL-TIME CLINICAL DECISION SUPPORT TOOL

[1]MP Vizcaychipi, [2]CL Shovlin, [1]A McCarthy, [1]A Howard, [1]S Patel, [1]A Godfrey, [1]J Armstrong, [1]I Beveridge, [1]A Brown, [1]L Christie, [1]G Davies, [1]R Davies, [1]A Gupta, [1]M Hayes, [1]RT Keays, [1]C Lockie, [1]T Peters, [1]M Popescu, [1]H Said, [1]P Shah, [1]S Singh, [1]A Sisson, [1]ChelWest COVID-19 Consortium. [1]*Chelsea and Westminster Hospital NHS Foundation Trust, London, UK;* [2]*Imperial College, London, UK*

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Introduction COVID-19 mortality rates are high, particularly in patients requiring invasive ventilatory support, developing a cytokine storm, or experiencing thromboembolic disease. Our goal was to determine if traffic-light driven, personalised care was associated with improved survival in acute hospital settings.

Methods Outcomes were evaluated during two implementation phases of a real-time clinical decision support tool that had been developed as part of a Trust's COVID-19 response, using a reporting and bioinformatics team to support Clinical and Operational teams. Following optimisation, the tool defined patients' clinical status in terms of risk of preventable complications based on blood test results (D-dimer, C reactive protein and ferritin). Feedback to ward-based clinicians enabled rapid modification of care pathways, in the first phase following a daily review, and in the second phase, in real-time (dashboard updated every 10 minutes).

Results 1039 COVID-19 positive patients were admitted by 21/05/2020. Focusing on the first 939 completed encounters to death or home discharge (median age 69ys; 60% [563/939] male), 568/939 (60.4%) received thromboembolism risk flags, and 212/939 (22.5%) cytokine storm flags. The maximum thromboembolism flag discriminated