

of 87.3% (79.0–92.7%) and 94.4% (89.0–97.2%) respectively. For the 30.6% and 38.0% of patients identified as high risk by gestalt in each study, specificity was 81.1% (74.6–86.6%) and 70.4% (65.4–75.1%) with positive predictive values of 56.4% (47.5–64.9%) and 39.1% (34.2–44.2%) respectively. A gestalt based rule out strategy incorporating ECG and arrival troponin performed with a sensitivity and NPV of 99.0%.

A significant evidence gap has been identified. At present there is insufficient information to draw meaningful conclusion. The little evidence supporting a gestalt-based diagnostic strategy urgently needs prospective validation.

027 THE UTILISATION OF URGENT EMERGENCY CARE SERVICES BY OLDER CARE HOME RESIDENTS IN THE UK AND THE SUBSEQUENT IMPACT ON EMERGENCY DEPARTMENTS

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Background Urgent and Emergency Care Services (UECS) in the UK are under increasing pressure. Although accounting for a small proportion of Emergency Department (ED) attendances, there is a continually rising demand for the care of older people. Currently, there is limited data surrounding older care home (CH) residents and their use of UECS, thus this study aims to investigate the characteristics of older CH resident UECS utilisation and factors that influence ED transfer.

Method and results Interviews were undertaken with healthcare and CH staff to elicit views around: the characteristics of ED attendances; demand placed upon UECS; alternative services; and interventions to reduce demand. Routine administrative data was collected for 21583 patients aged ≥ 75 from one large, urban type 1 ED in Yorkshire and Humber (Y&H) between April 2016 and March 2017. CH residents were identified to characterise attendances.

Conclusions CH residents were more likely to arrive by ambulance, OR of 3.810 (95% CI: 3.316–4.378, $p < 0.001$); breach the four-hour target, OR of 1.321 (95% CI: 1.223–1.427, $p < 0.001$); have an investigation, OR of 1.196 (95% CI: 1.035–1.381, $p = 0.015$); receive resuscitation treatment, OR of 1.559 (95% CI: 1.409–1.725, $p < 0.001$); and have a long inpatient admission (> 2 days), OR of 2.083 (95% CI: 1.933–2.245, $p < 0.001$) compared with non-care home residents (NCH) reflecting greater demand upon UECS. Interviews revealed ED transfer decisions were complex and reliant upon communication with the wider healthcare system and the risk averse attitudes of CH staff. Increased training of CH staff, advanced care planning and integrating healthcare services into the CH were suggestions to reduce the demands CH residents place upon UECS.

This study reflects the demand CH residents place on UECS compared with NCH residents and highlights the importance of investigating factors influencing ED transfer. This will help to create targeted interventions to improve resident care and reduce UECS demand.

RCEM Moderated

028 A COMPARISON OF THE MACS-ECG ALGORITHM VERSUS CONTEMPORARY COMPUTER ALGORITHMS

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Background The Manchester Acute Coronary Syndromes ECG (MACS-ECG) model was derived and validated with the aim of providing an objective measure of ECG ischemia in the setting of suspected non-ST-elevation myocardial infarction. We wanted to produce an objective measure to improve existing clinical decision aids such as TMACS or the HEART score. To establish whether the MACS-ECG model warrants further study we compared the diagnostic performance against existing computer algorithms.

The MACS-ECG model was derived in a single center cohort and combined a nuanced interpretation of repolarization abnormalities with novel signs of ischemia. These variables were selected using backward logistic regression using SPSS with the primary outcome being NSTEMI.

This model was validated in a secondary analysis of the Bedside Evaluation of Sensitive Troponin study (BEST). We recruited patients from 17 Emergency Departments. We included adults with a suspected ACS. We excluded patients with STEMI or obvious non-cardiac cause.

The primary outcome was NSTEMI, using the Fourth universal definition of myocardial infarction.

In the validation study we also coded the ECG machines interpretation as acute ischemia, infarction or no statement.

When the existing ECG algorithms produce an 'acute ischemia' statement, the sensitivity (Sn) was 13.3% (8.2–20.0%), specificity (Sp) 93.9% (92.1–95.5%), positive predictive value (PPV) 27.9% (19.1–39.0%) and negative predictive value (NPV) 86.0% (85.2–86.8%).

An 'infarction' statement produced Sn 21.0% (14.6–28.6), Sp 88.3% (85.8–90.4%), PPV 24.0% (17.9–31.4%) and NPV 86.3% (85.3–87.3%).

Combining infarction and ischemia produces the following diagnostic characteristics: Sn 34.3% (26.5–42.7%), Sp 82.2% (79.4–84.8%), PPV 25.4% (20.6–30.9%) and NPV 87.6% (86.2–88.9%).

The MACS-ECG model was more specific and sensitive than existing computer algorithms. When it produced an 'acute ischemia' statement, the Sn was 22.4% (15.8–30.1%), Sp 95.2% (93.5–96.6%), PPV 45.1% (34.8–55.8%) and NPV 87.4% (86.4–88.4%).

029 AN EXPLORATION OF WHAT HEALTH CARE PROFESSIONALS CONSIDER TO BE GOOD CLINICAL SHOP FLOOR LEADERSHIP

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Background A successful shop floor leader must perform many tasks, often simultaneously, and hold an array of skills to complete those tasks. They must deliver clinical care, education and teaching and manage flow and performance.