Introduction:
Age is a well-known risk factor for Critical Care (CC) outcome and is incorporated into many prognostic tools; however, this has been criticised for assumption of normal physiology for young at baseline.
In recent years, frailty in CC prognostication has been of interest, with meta-analysis correlating worsening outcomes with increasing frailty (1). In this study, we compared the effect of frailty versus age for determining hospital survival for critically ill patients.

Methods:
This study was conducted in a UK District General Hospital, with 19 CC beds, where the Rockwood Clinical Frailty Score (CFS) is collected on all adult admissions. Retrospective analysis of data, adjusted for ICNARC score was performed on CC emergency admissions using STATA 14, combining CFS, patient demographics and outcome data from our electronic records. Logistic regression was used for mortality prediction. We defined non-frail as CFS<4. An age cut-off of 70 years was used for the age adjusted model, as remaining life expectancy (RLE) at age 70 years has recently been shown to be equal to RLE at age 65 years before (2).

Results:
Total number of patients was 556 (male- 58%) of which 140 (16.5%) died in hospital. Importantly, in the patients<70 years (n=529), 137(48%) had CFS<4. The number of elective and emergency admission were 292 (34%) and 556(66%) respectively. The risk for mortality (OR) in the adjusted model with age and CFS cut off were 2.65 (1.61, 4.35) and 2.35 (1.44, 2.83) respectively. Both of these mortality prediction models, one incorporating age cut-off 70 and the other based on CFS, show equal performance of discrimination (AUROC 0.88).

Conclusion:
Our data supports an association between increasing CFS and mortality for the CC population independent of age. Frailty should be incorporated in clinical decision making in addition to utilisation of arbitrary cut offs of age.

References:
1. Muscedere et al. (2017). The impact of frailty on intensive care unit outcomes
2. Office for National Statistics

Image:

Age vs CFS Emergency Critical Care Admissions