Hospital Frailty Risk Score (HFRS) – Identifying Frailty at the Front Door in the Emergency Department (ED)

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Introduction - There have been several studies validating the Hospital Frailty Risk Score (HFRS) to identify frailty. We proposed that the HFRS could identify patients in the Emergency Department (ED) who would benefit from the Older Persons Assessment Service (OPAS). Routinely identifying older people at risk of adverse clinical and/or service outcomes in hospitals means being able to provide interventions specifically for frailty throughout their hospital episode.

Results. 1581 consecutive admissions: 668 High/Intermediate and 913 Low frailty per HFRS. People with High/Intermediate frailty were more likely to be male (p=0.05), be older (p=0.03) and have greater CFS (p<0.001). Moreover, greater mortality was observed at 12 months' follow-up in people with High/Intermediate frailty (p<0.001). There was no association between postcode with frailty or Death.

When looking at HFRS as a screening tool in our sample when comparing High/Intermediate and Low frailty, Sensitivity: 0.54, Specificity: 0.85, Positive Predictive Value: 0.89, Negative Predictive value: 0.44, Area Under Curve: 0.29.

Variable	All n=1581	High/Intermediate n=668	Low n=913	P value
Age	83.5 (±7.6)	84.0 (±7.3)	83.2 (±7.8)	P=0.03
Male	634 (40.1%)	286 (42.8%)	348 (38.1%)	P=0.05
Female	947 (59.9%)	380 (58.2%)	565 (61.9%)	
CFS	5.2 (±1.3)	5.9 (±1.2)	4.4 (±1.4)	P<0.001
Alive	1114 (70.5%)	428 (64.1%)	686 (75.1%)	P<0.001
Dead	467 (29.5%)	240 (35.9%)	227 (24.9%)	
Deprivation decile	5.6 (±2.9)	5.5 (±3.0)	5.7 (±3.0)	P=0.23

Intervention - OPAS is an Emergency Department based service which accepts patients with frailty syndromes in patients aged >70 years. A retrospective analysis of the OPAS databank was conducted using HFRS to divide patients in High/Intermediate and Low Frailty Risk. We considered Age, Clinical Frailty Score (CFS), Post-code with Deprivation Index and death within a year of attendance.

Conclusion - We found socio-economic status and coding had no relationship to the screening efficacy of HFRS. Of those admitted, High/Intermediate Frail had median LOS of 28.11 days vs 21.26 days for not frail, with 30 day mortality 10.12% vs 8.90%; potentially suggesting the HFRS can identify a subpopulation of high-risk frail patients. We have developed an electronic, automated Frailty Flag that operates in real-time to signpost appropriate patients who would benefit from CGA, which we have tested in clinical practice. We did a prospective analysis of those admitted to our ED, looked to see whether they were "flagged" and did a CFS. We found that those who were flagged were older and had a higher CFS (P<0.001) indicating that our flag is working. We have shown that the HFRS can be used to identify patients in the ED and can be used to measure frailty-specific intervention system efficiency.