

Appendix 1 (as supplied by the authors): Supplementary figures and tables

Figure 1: Distribution of the FI-Lab. Consistent with FI-Labs created previously and in contrast to a frailty index created from clinical health deficits, the FI-Lab is slightly right skewed (degree of skew 0.31). Frailty Indices created from clinical measures are strongly right skewed. FI-Lab distributions are more consistently normal or slightly right skewed.

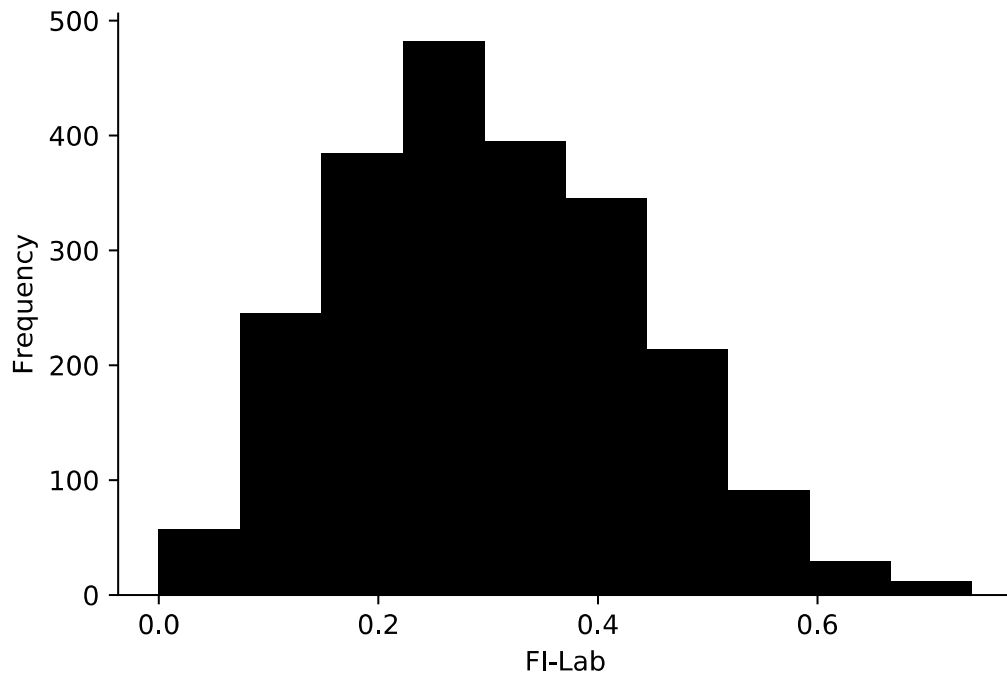


Figure 2: The mean FI-Lab plotted by 3 year age averages and stratified by sex.

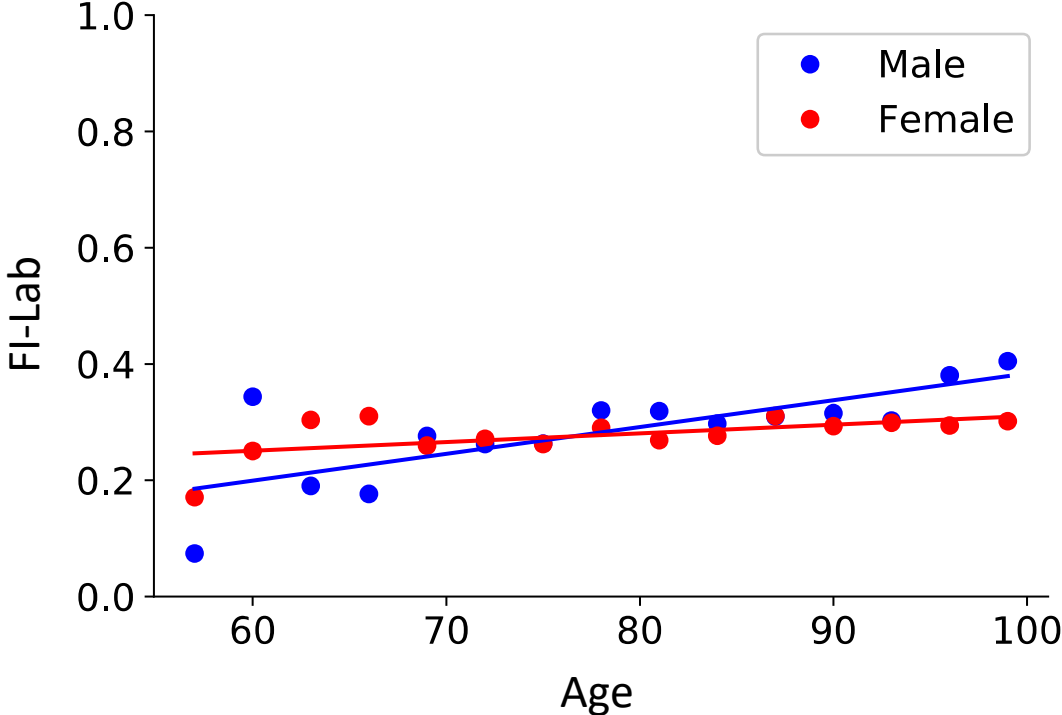


Table 1: Laboratory values included in the FI-Lab.

Laboratory Measure	Low Cut-Off	High Cut-Off
Alanine transaminase (IU/L)	10	50
Albumin (g/L)	34	50
Alkaline phosphatase (IU/L)	35	129
aPTT (sec)	22	41
Basophils (number/L)	0 x 10 ⁻⁹	0.1 x 10 ⁻⁹
Total Bilirubin (µmol/L)	0	20.2
C-reactive protein (nmol/L)	0	5
Calcium (albumin-adjusted) (mmol/L)	2.15	2.55
Creatinine (µmol/L)	49	112
Eosinophils (number/L)	0 x 10 ⁻⁹	0.4 x 10 ⁻⁹
Hematocrit	0.33	0.5
Lymphocytes (number/L)	1.2 x 10 ⁻⁹	3.65 x 10 ⁻⁹
Magnesium (mmol/L)	0.6	1
Mean Cell Hemoglobin (pg/cell)	27	33.5
Mean Corpuscular Volume (fL)	80	99
Monocytes (number/L)	0.2 x 10 ⁻⁹	1 x 10 ⁻⁹
Mean Platelet Volume, (fL)	7	13
Neutrophils (number/L)	2 x 10 ⁻⁹	7.5 x 10 ⁻⁹
Phosphate (mmol/L)	0.87	1.45
Platelet count (number/L)	150 x 10 ⁻⁹	400 x 10 ⁻⁹
Potassium (mmol/L)	3.5	5.1
Prothrombin Time (sec)	10	12
Red Cell Distribution (%)	11.5	15
Sodium (mmol/L)	135	145
Urea (mmol/L)	1.7	8.3
White cell count (number/L)	3 x 10 ⁻⁹	10 x 10 ⁻⁹
Haemoglobin (g/L)	115	160

Table 2: Characteristics of study population stratified by FI-Lab:

	Low FI-Lab (<0.25)	Moderate FI-Lab ($0.25 \leq \text{FI-Lab} \leq 0.4$)	High FI-Lab ($\text{FI-Lab} > 0.4$)
N	836	908	510
Age, mean (95% SD)	84.0 (7.5)	85.3 (6.7)	85.1 (6.7)
Sex, % Female	0.6 (0.5)	0.6 (0.5)	0.5 (0.5)
Dementia, %	0.6 (0.5)	0.5 (0.5)	0.5 (0.5)
Delirium, %	0.3 (0.4)	0.4 (0.5)	0.4 (0.5)
Falls history, %	0.5 (0.5)	0.4 (0.5)	0.4 (0.5)
FI-Lab (95% SD)	0.2 (0.1)	0.3 (0.0)	0.5 (0.1)
Mean admissions per person	1.9 (1.4)	2.3 (1.8)	2.3 (1.9)
Length of Stay, mean	10.5 (18.2)	12.6 (15.6)	16.5 (21.4)
Died, %	340 (40.8)	550 (60.7)	379 (74.8)
Admitted from, N (%)			
Home	766 (91.8)	804 (88.7)	424 (83.6)
Residential Care Home	15 (1.8)	14 (1.5)	5 (1.0)
Nursing Care Home	26 (3.1)	47 (5.2)	41 (8.1)
Hospital Transfer	19 (2.3)	31 (3.4)	29 (5.7)
Other	8 (1.0)	10 (1.1)	8 (1.6)
Discharged to, N (%)			
Home	692 (83.0)	675 (74.5)	318 (62.7)
Residential Care Home	19 (2.3)	17 (1.9)	7 (1.4)
Nursing Care Home	54 (6.5)	76 (8.4)	47 (9.3)
Hospital Transfer	56 (6.7)	69 (7.6)	32 (6.3)
Died	13 (1.6)	67 (7.4)	103 (20.3)
Other	-	2 (0.2)	-
Clinical Frailty Scale, N (%)			
Very Fit (CFS=1)	1 (0.1)	1 (0.1)	-
Well (CFS=2)	6 (0.7)	3 (0.3)	-
Managing Well (CFS=3)	13 (1.6)	13 (1.4)	3 (0.6)
Vulnerable (CFS=4)	70 (8.4)	56 (6.2)	30 (5.9)
Mildly Frail (CFS=5)	229 (27.5)	207 (22.8)	112 (22.1)
Moderately Frail (CFS=6)	297 (35.6)	350 (38.6)	166 (32.7)
Severely Frail (CFS=7)	198 (23.7)	226 (24.9)	152 (30.0)
Very Severely Frail (CFS=8)	19 (2.3)	39 (4.3)	33 (6.5)
Terminally Ill (CFS=9)	1 (0.1)	11 (1.2)	11 (2.2)

Table 3: Multivariable cox survival analysis using index admission date only. Analysis was additionally censored by readmission or December 11, 2018.

	Multivariable Model			
	HR	95% CI		p
FI-Lab	1.39	1.33	1.52	<0.01
CFS	1.39	1.27	1.52	<0.01
Age	1.04	1.02	1.05	<0.01
Female (vs male)	0.73	0.62	0.87	<0.01
Delirium	1.27	1.06	1.53	0.01
Falls	0.94	0.79	1.12	0.49
Dementia	0.97	0.80	1.17	0.72
Admitted from own home	0.82	0.64	1.04	0.10

Table 4: Multivariable cox regression analysis with composite outcome of readmission or death from date of admission. Analysis was additionally right censored at the end of study enrolment period (January 2017). As some participants had multiple admission, analysis was clustered by patient ID.

	Multivariable Model			
	HR	95% CI		p
FI-Lab	1.32	1.26	1.39	<0.01
CFS	1.36	1.28	1.44	<0.01
Age	1.02	1.01	1.03	<0.01
Female (vs male)	0.84	0.73	0.96	0.01
Delirium	1.04	0.90	1.19	0.61
Falls	1.00	0.88	1.12	0.35
Dementia	0.87	0.76	1.00	0.05
Admitted from Home	1.08	0.89	1.31	0.43