

Supplementary Table 1 – Characteristics of included patients at each site

		Cardiff (n=731)		Bristol (n=55)		Paisley (n=253)		Aberdeen (n=957)		Manchester (n=181)		Blackpool (n=102)		Total (n=2279)	
Age	Under 65	486	66%	29	53%	119	47%	640	67%	133	73%	51	50%	1,458	64%
	65 - 79	149	20%	14	25%	89	35%	204	21%	36	20%	23	23%	515	23%
	Over 80	96	13%	12	22%	45	18%	113	12%	12	7%	28	27%	306	13%
Gender	Female	398	54%	27	49%	143	57%	553	58%	98	54%	57	56%	1,276	56%
	Male	333	46%	28	51%	110	43%	404	42%	83	46%	45	44%	1,003	44%
Albumin	Normal	393	54%	29	53%	139	55%	534	56%	110	61%	85	83%	1,290	57%
	Low	291	40%	25	45%	113	45%	411	43%	59	33%	16	16%	915	40%
	missing	47	6%	1	2%	1	0%	12	1%	12	7%	1	1%	74	3%
Haemoglobin	Normal	464	63%	26	47%	153	60%	582	61%	119	66%	50	49%	1,394	61%
	Low	253	35%	28	51%	100	40%	365	38%	61	34%	51	50%	858	38%
	missing	14	2%	1	2%	0	0%	10	1%	1	1%	1	1%	27	1%
eGFR	Normal	631	86%	42	76%	217	86%	834	87%	150	83%	83	81%	1,957	86%
	<60	72	10%	9	16%	28	11%	100	10%	27	15%	16	16%	252	11%
	<30	28	4%	4	7%	8	3%	23	2%	4	2%	3	3%	70	3%
CRP	Normal	116	16%	6	11%	21	8%	3	0%	30	17%	8	8%	184	8%
	>3	615	84%	49	89%	232	92%	954	100%	151	83%	94	92%	2,095	92%
Poly pharmacy	No	469	64%	35	64%	106	42%	580	61%	136	75%	57	56%	1,383	61%
	Yes	247	34%	20	36%	147	58%	374	39%	39	22%	45	44%	872	38%
	missing	15	2%	0	0%	0	0%	3	0%	6	3%	0	0%	24	1%
Multimorbidity	No	374	51%	31	56%	161	64%	557	58%	140	77%	53	52%	1,316	58%
	Yes	234	32%	17	31%	92	36%	307	32%	35	19%	49	48%	734	32%
	missing	123	17%	7	13%	0	0%	93	10%	6	3%	0	0%	229	10%
Diabetes	No	611	84%	44	80%	217	86%	865	90%	163	90%	88	86%	1,988	87%
	Yes	107	15%	7	13%	36	14%	90	9%	13	7%	14	14%	267	12%
	missing	13	2%	4	7%	0	0%	2	0%	5	3%	0	0%	24	1%
Dementia	No	695	95%	48	87%	248	98%	933	97%	176	97%	96	94%	2,196	96%
	Yes	26	4%	5	9%	5	2%	23	2%	1	1%	6	6%	66	3%
	Missing	10	1%	2	4%	0	0%	1	0%	4	2%	0	0%	17	1%
Depression	No	575	79%	40	73%	238	94%	747	78%	144	80%	96	94%	1,840	81%
	Yes	140	19%	11	20%	15	6%	197	21%	5	3%	6	6%	374	16%
	missing	16	2%	4	7%	0	0%	13	1%	32	18%	0	0%	65	3%
Operation	No	550	67%	33	60%	192	76%	674	70%	121	67%	69	68%	1,639	62%
	Yes	181	33%	21	38%	61	24%	283	30%	59	33%	33	32%	638	28%
	missing	0	0%	1	2%	0	0%	0	0%	1	1%	0	0%	2	0%
Frailty	1	152	21%	30	55%	25	10%	442	46%	86	48%	32	31%	767	34%
	2	252	34%	1	2%	48	19%	178	19%	41	23%	28	27%	548	24%
	3	138	19%	3	5%	74	29%	165	17%	21	12%	16	16%	417	18%
	4	90	12%	2	4%	43	17%	97	10%	18	10%	8	8%	258	11%
	5	42	6%	8	15%	52	21%	54	6%	10	6%	10	10%	176	8%
	6	40	5%	10	18%	8	3%	18	2%	4	2%	6	6%	86	4%
	7	17	2%	1	2%	3	1%	3	0%	1	1%	2	2%	27	1%

Supplementary Table 2 – Clinical outcomes of the included patients at each site

		Cardiff (n=727)		Bristol (n=54)		Paisley (n=253)		Aberdeen (n=957)		Manchester (n=180)		Blackpool (n=102)		Total (n=2273)	
Mortality Day 90	Alive	685	94%	48	89%	234	92%	911	95%	173	96%	96	94%	2,147	94%
	Dead	42	6%	6	11%	19	8%	46	5%	7	4%	6	6%	126	6%
Mortality Day 30	Alive	699	96%	49	91%	245	97%	924	97%	178	99%	98	96%	2,193	96%
	Dead	27	4%	5	10%	8	3%	32	4%	3	2%	4	4%	79	4%
Readmission Day 30	None	606	83%	43	80%	190	75%	779	81%	148	82%	88	86%	1,854	82%
	Yes	117	17%	11	23%	63	27%	171	19%	28	16%	14	15%	404	19%
Length of stay	Up to 3 days	386	53%	26	48%	105	42%	486	51%	79	44%	42	41%	1,124	49%
	Up to 1 week	173	24%	14	26%	85	34%	279	29%	48	27%	37	36%	636	28%
	Up to 4 weeks	139	19%	10	19%	50	20%	177	18%	41	23%	18	18%	435	19%
	> 4 weeks	33	5%	5	9%	13	5%	15	2%	13	7%	5	5%	84	4%

Supplementary Table 3 – Frailty, by age distribution

Patient Age	Clinical Frailty Scale									Total
	Not Frail				Subtotal Not-frail (1 to 4)	Frail			Subtotal Frail (5 to 7)	
	Very fit 1	Well 2	Well, with comorbid disease 3	Apparently vulnerable 4		Mildly frail 5	Moderately frail 6	Severely frail 7		
Under 30	280	76	15	2	373	3	1	1	5	378
30 to 39	142	88	26	9	265	1	2	0	3	268
40 to 49	143	102	48	13	306	8	2	1	11	317
50 to 59	103	105	81	41	330	10	9	2	21	351
60 to 69	64	92	85	60	301	19	9	2	30	331
70 to 79	24	59	103	60	246	59	17	6	82	328
80+	11	26	59	73	169	76	46	15	137	306
Total	767	548	417	258	1990	176	86	27	289	2279

Supplementary Table 4 – Characteristics of the outcomes

	Mortality Day 90							Mortality Day 30						Re-Admission			Length of Stay	
	Yes	No	Total	Yes	No	Total	Yes	No	Total	Readmission	None	Total	Median	Total				
Age	126	2145	2271	79	2193	2272	404	1854	2258									
Under 65	34	27%	1,419	66%	1,453	64%	21	27%	1,433	65%	1,454	64%	3, (2 - 5)	1,458	64%			
65 - 79	39	31%	475	22%	514	23%	25	32%	489	22%	514	23%	5, (3 - 9)	515	23%			
Over 80	53	42%	251	12%	304	13%	33	42%	271	12%	304	13%	7, (3 - 13)	306	13%			
Gender																		
Female	56	44%	1,219	57%	1,275	56%	35	44%	1,240	57%	1,275	56%	3, (2 - 7)	1,276	56%			
Male	70	56%	926	43%	996	44%	44	56%	953	43%	997	44%	4, (2 - 8)	1,003	44%			
Albumin																		
Normal	24	19%	1,263	59%	1,287	57%	13	16%	1,274	58%	1,287	57%	3, (2 - 5)	1,290	57%			
Low	101	80%	811	38%	912	40%	65	82%	848	39%	913	40%	5, (2 - 10)	915	40%			
missing	1	1%	71	3%	72	3%	1	1%	71	3%	72	3%	2, (1 - 4)	74	3%			
Haemoglobin																		
Normal	47	37%	1,342	63%	1,389	61%	30	38%	1,360	62%	1,390	61%	3, (2 - 6)	1,394	61%			
Low	78	62%	778	36%	856	38%	48	61%	808	37%	856	38%	4, (2 - 8)	858	38%			
missing	1	1%	0	0%	0	0%	0	0%	0	0%	0	0%	1, (1 - 5)	27	1%			
eGFR																		
Normal	76	60%	1,874	87%	1,950	86%	46	58%	1,905	87%	1,951	86%	3, (2 - 6)	1,957	86%			
<60	32	25%	219	10%	251	11%	20	25%	231	11%	251	11%	6, (3 - 10)	252	11%			
<30	18	14%	52	2%	70	3%	13	16%	57	3%	70	3%	8, (6 - 18)	70	3%			
CRP																		
Normal	2	2%	181	8%	183	8%	2	3%	181	8%	183	8%			0%			
>3	124	98%	1,964	92%	2,088	92%	77	97%	2,012	92%	2,089	92%			0%			
Polymy																		
No	36	29%	1,342	63%	1,378	61%	23	29%	1,356	62%	1,379	61%	3, (2 - 6)	1,383	61%			
Pharmacy																		
Yes	84	67%	785	37%	869	38%	51	65%	818	37%	869	38%	5, (3 - 9)	872	38%			
missing	6	5%	18	1%	24	1%	5	6%	19	1%	24	1%	3, (2 - 9)	24	1%			
Multi-morbidity																		
No	49	39%	1,261	59%	1,310	58%	32	41%	1,279	58%	1,311	58%	3, (2 - 6)	1,316	58%			
Yes	67	53%	665	31%	732	32%	40	51%	692	32%	732	32%	5, (2 - 9)	734	32%			
missing	10	8%	219	10%	229	10%	7	9%	222	10%	229	10%	3, (2 - 6)	229	10%			
Frailty																		
1	12	10%	753	35%	765	34%	8	10%	758	35%	766	34%	3, (2 - 5)	767	34%			
2	19	15%	528	25%	547	24%	9	11%	538	25%	547	24%	3, (2 - 6)	548	24%			
3	21	17%	394	18%	415	18%	14	18%	401	18%	415	18%	4, (2 - 8)	417	18%			
4	20	16%	238	11%	258	11%	14	18%	244	11%	258	11%	4, (2 - 9)	258	11%			
5	21	17%	154	7%	175	8%	13	16%	162	7%	175	8%	5, (3 - 11)	176	8%			
6	20	16%	64	3%	84	4%	11	14%	73	3%	84	4%	7.5, (4, 18)	86	4%			
7	13	10%	14	1%	27	1%	10	13%	17	1%	27	1%	5, (3 - 7)	27	1%			

Supplementary Table 5 - Day 30 Mortality analysis

Unadjusted

Adjusted - Mortality Day 30

Variable	Level	OR (95% CI)	p-value	OR (95% CI)	p-value
Clinical Frailty Scale ^{&}	1	- Reference -		- Reference -	
	2	1.59, (0.61, 4.13)	0.346	1.17, (0.44, 3.12)	0.751
	3	3.31, (1.38, 7.95)	0.008	1.63, (0.64, 4.19)	0.307
	4	5.43, (2.25, 13.11)	<0.001	2.21, (0.84, 5.81)	0.107
	5	7.60, (3.10, 18.64)	<0.001	2.24, (0.87, 6.69)	0.089
	6	14.28, (5.56, 36.62)	<0.001	3.78, (1.29, 11.07)	0.015
	7	55.74, (19.57, 158.78)	<0.001	22.33, (6.85, 72.76)	<0.001
Age group	Under 65	- Reference -		- Reference -	
	65 to 80	2.18, (1.13, 4.20)	0.02	1.69, (0.87, 3.25)	0.12
	Over 80	3.39, (1.70, 6.74)	0.001	2.84, (1.43, 5.64)	0.003
Sex	Female	1.66, (1.04, 2.65)	0.034	1.59, (0.98, 2.57)	0.058
Albumin	Abnormal	5.47, (2.93, 10.21)	<0.001	5.11, (2.73, 9.57)	<0.001

Key:[&]
1=Very Fit;
2=Very Well;
3= Well, with comorbid disease;
4=Apparently vulnerable;
5= Mildly frail;
6=Moderately Frail;
7=Severely Frail

Supplementary Table 6 – Length of stay analysis

Variable	Level	Unadjusted		Adjusted - Length of Stay	
		OR (95% CI)	p-value	OR (95% CI)	p-value
Clinical Frailty Scale ^{&}	1	- Reference -		- Reference -	
	2	1.12, (1.01, 1.24)	0.03	1.01, (0.91, 1.12)	0.793
	3	1.33, (1.19, 1.49)	<0.001	1.00, (0.89, 1.12)	0.971
	4	1.89, (1.66, 2.15)	<0.001	1.28, (1.12, 1.47)	<0.001
	5	2.60, (2.25, 3.02)	<0.001	1.48, (1.26, 1.74)	<0.001
	6	2.89, (2.37, 3.53)	<0.001	1.71, (1.39, 2.09)	<0.001
	7	2.33, (1.64, 3.30)	<0.001	1.60, (1.14, 2.25)	0.006
Age group	Under 65	- Reference -		- Reference -	
	65 to 80	1.68, (1.52, 1.85)	<0.001	1.58, (1.43, 1.74)	<0.001
	Over 80	1.83, (1.61, 2.08)	<0.001	1.68, (1.48, 1.91)	<0.001
Sex	Female	1.14, (1.06, 1.24)	<0.001	1.15, (1.06, 1.24)	<0.001
Albumin	Abnormal	1.10, (0.88, 1.39)	0.404	1.55, (1.43, 1.67)	<0.001

Key:[&]
1=Very Fit;
2=Very Well;
3= Well, with comorbid disease;
4=Apparently vulnerable;
5= Mildly frail;
6=Moderately Frail;
7=Severely Frail

Supplementary Table 7 – Re-admission analyses

Unadjusted

Adjusted - Readmission

Variable	Level	OR (95% CI)	p-value	OR (95% CI)	p-value
Clinical Frailty Scale ^{&}	1			- Reference -	
	2	1.55, (1.13, 2.11)	0.006	1.53, (1.11, 2.11)	0.009
	3	1.73, (1.25, 2.39)	0.001	1.72, (1.21, 2.45)	0.002
	4	2.21, (1.54, 3.16)	<0.001	2.20, (1.48, 3.27)	<0.001
	5	1.96, (1.28, 2.98)	0.002	1.90, (1.18, 3.06)	0.009
	6	2.56, (1.49, 4.37)	0.001	2.56, (1.42, 4.59)	0.002
	7	0.90, (0.26, 3.06)	0.868	0.93, (0.27, 3.25)	0.911
Age group	Under 65	- Reference -		- Reference -	
	65 to 80	0.99, (0.75, 1.32)	0.947	0.97, (0.73, 1.29)	0.831
	Over 80	0.92, (0.64, 1.33)	0.67	0.93, (0.64, 1.34)	0.681
Sex	Female	0.98, (0.79, 1.22)	0.855	0.99, (0.80, 1.24)	0.947
Albumin	Abnormal	1.10, (0.88, 1.39)	0.404	1.11, (0.88, 1.40)	0.388

Key:[&]
1=Very Fit;
2=Very Well;
3= Well, with comorbid disease;
4=Apparently vulnerable;
5= Mildly frail;
6=Moderately Frail;
7=Severely Frail