SUPPLEMENTAL MATERIAL

Supplemental Table 1: Univariate and multivariate predictors of infection as the cause of first hospitalization

	Univariate analysis				Multivariate analysis			
	OR	**95% CI of OR**		**p value**	**OR**	**95% CI of OR**		**p value**
Age	1.02	1.00	1.04	0.059	1.01	0.99	1.03	0.16
Heart rate	1.01	0.99	1.03	0.30	NA	NA	NA	NA
Systolic BP	1.00	0.98	1.01	0.49	NA	NA	NA	NA
Diastolic BP	1.01	0.99	1.04	0.44	NA	NA	NA	NA
QRS interval	1.00	0.99	1.00	0.33	NA	NA	NA	NA
Haemoglobin	1.02	0.91	1.14	0.76	NA	NA	NA	NA
WCC	1.06	0.97	1.17	0.19	NA	NA	NA	NA
Lymphocytes	0.81	0.60	1.10	0.17	NA	NA	NA	NA
Neutrophils	1.14	1.01	1.28	0.031	1.11	0.98	1.25	0.11
Platelets	1.00	1.00	1.00	0.49	NA	NA	NA	NA
Sodium	0.97	0.92	1.04	0.39	NA	NA	NA	NA

eGFR	1.00	0.99	1.01	0.91	NA	NA	NA	NA
Albumin	0.94	0.89	1.00	0.043	0.97	0.91	1.03	0.29
Vitamin D	1.00	0.99	1.01	0.98	NA	NA	NA	NA
LVEF	1.00	0.98	1.02	0.92	NA	NA	NA	NA
Ramipril dose	0.98	0.92	1.04	0.41	NA	NA	NA	NA
Bisoprolol dose	0.95	0.89	1.01	0.10	NA	NA	NA	NA
Furosemide dose	1.00	1.00	1.01	0.73	NA	NA	NA	NA
MRA prescription	0.73	0.46	1.14	0.17	NA	NA	NA	NA
ICD/CRT	0.29	0.14	0.60	0.001	0.27	0.14	0.60	0.001
Male sex	1.27	0.78	2.06	0.34	NA	NA	NA	NA
Diabetes	1.41	0.91	2.17	0.12	NA	NA	NA	NA
COPD	3.10	1.90	5.05	<0.001	2.70	1.62	4.52	<0.001
Ischaemic aetiology	1.09	0.71	1.67	0.70	NA	NA	NA	NA
NYHA class 1	1.00	-	-	-	NA	NA	NA	NA
2	1.45	0.71	2.96	0.31	NA	NA	NA	NA

3	1.34	0.63	2.87	0.45	NA	NA	NA	NA
4	4.18	0.24	72.21	0.33	NA	NA	NA	NA

WCC – white cell count; eGFR – estimated glomerular filtration rate; LVEF – left ventricular ejection fraction; ICD – implantable cardioverter-defibrillator; CRT – cardiac resynchronization therapy; COPD – chronic obstructive pulmonary disease; NYHA – New York heart association. NYHA class was assessed with reference to NYHA class 1. NA – not applicable as these variables were not included in the multivariate analysis due to being non-significant in univariate analysis.

Supplemental Table 2: Crude and adjusted in-hospital mortality of infection versus non-infection related hospitalization

Model	OR	95% CI of OR	p value
Crude	3.6	1.6-8.1	0.002
Age, sex	3.6	1.6-8.1	0.002
Age, sex, neutrophils, albumin, COPD, ICD/CRT	3.5	1.4-8.4	0.005

Binary logistic regression analyses illustrating odds ratio (OR) for death during first hospital admission in patients with infection versus any other cause of hospitalization. CI denotes confidence interval, COPD denotes chronic obstructive pulmonary disease, ICD denotes implantable cardioverter defibrillator and CRT denotes cardiac resynchronisation therapy.

Supplemental Table 3: Crude and adjusted mortality after first hospital admission with infection versus any other cause of hospitalization

Model	HR	95% CI of HR	p value
Crude	1.6	1.2-2.0	0.001
Age, sex	1.4	1.1-1.8	0.012
Age, sex, neutrophils, albumin, COPD, ICD/CRT	1.3	1.0-1.7	0.085

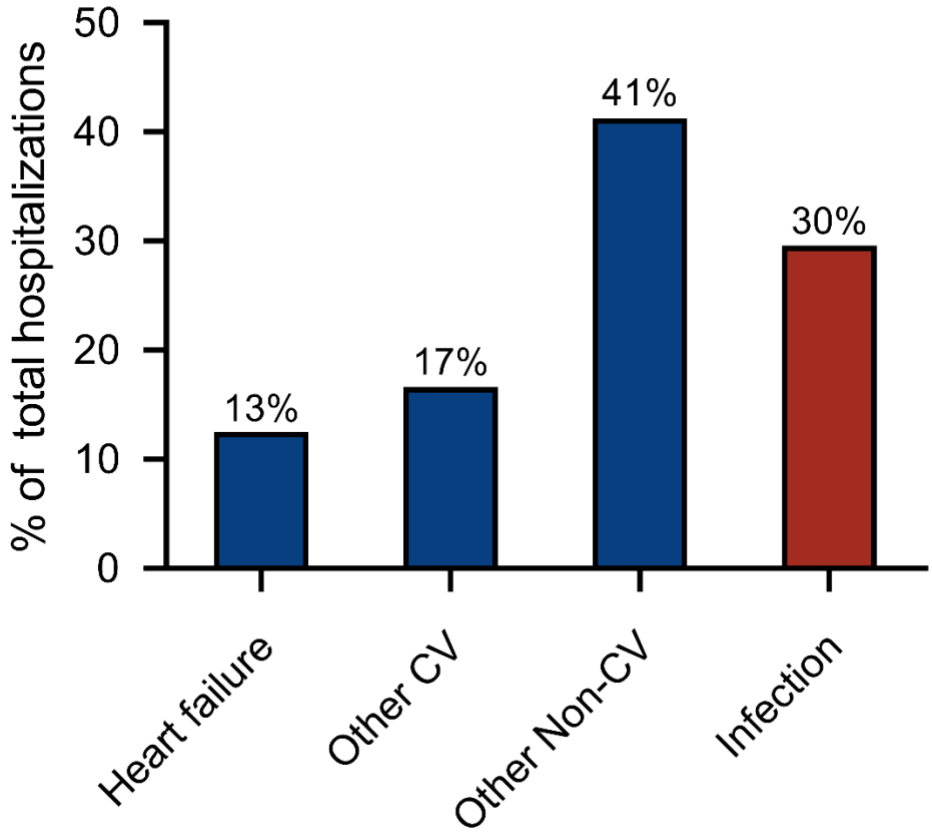
Cox regression analyses illustrating hazard ratio (HR) for death after first hospital admission in patients with infection versus any other cause of hospitalization. CI denotes confidence interval, COPD denotes chronic obstructive pulmonary disease, ICD denotes implantable cardioverter defibrillator and CRT denotes cardiac resynchronisation therapy.

Supplemental Table 4: Crude and adjusted mortality after first hospital admission with infection versus other specified causes of hospitalization

Model	Comparison	HR	95% CI of HR	p value
Crude	HF vs infection	1.00	0.70-1.45	0.98
	CV vs infection	0.58	0.42-0.82	0.002
	Non-CV vs infection	0.58	0.42-0.78	<0.001
Age, sex	HF vs infection	1.06	0.73-1.53	0.75
	CV vs infection	0.64	0.46-0.90	0.01
	Non-CV vs infection	0.64	0.47-0.88	0.006
Age, sex, albumin, furosemide, ICD/CRT, Diabetes, COPD	HF vs infection	1.07	0.73-1.55	0.74
	CV vs infection	0.72	0.51-1.02	0.07
	Non-CV vs infection	0.69	0.50-0.96	0.026

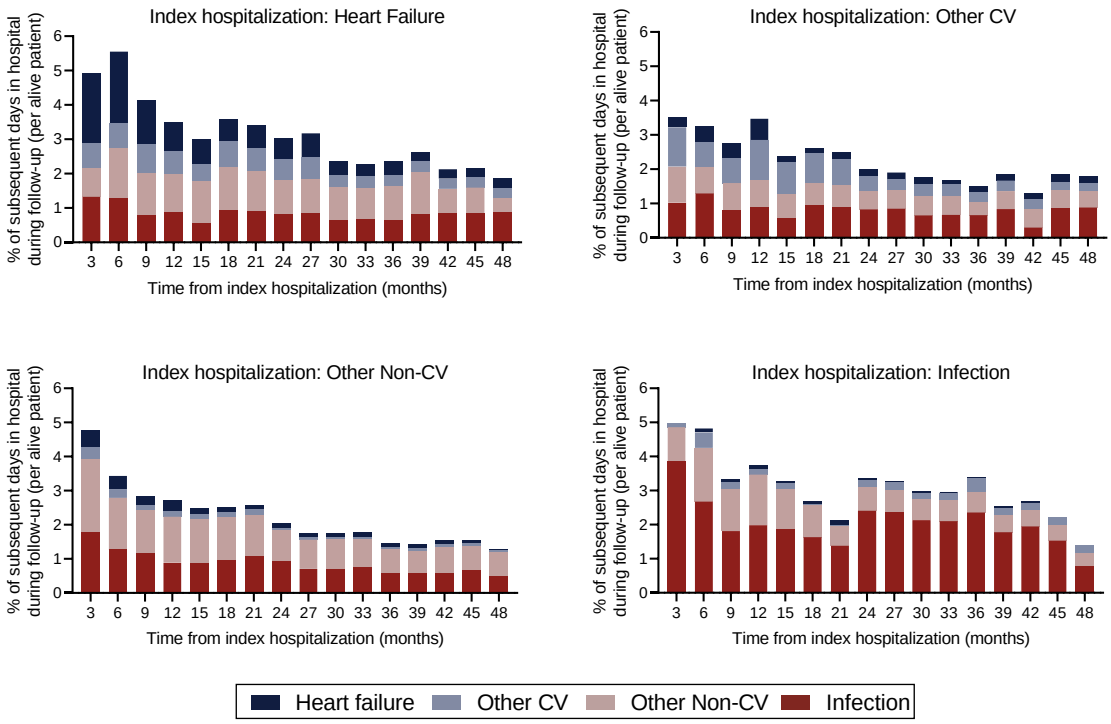
Cox regression analyses illustrating hazard ratio (HR) for death after first hospital admission in patients with infection versus other categories of hospitalization. CI denotes confidence interval, COPD denotes chronic obstructive pulmonary disease, CV denotes cardiovascular, HF denotes decompensated heart failure, ICD denotes implantable cardioverter defibrillator and CRT denotes cardiac resynchronisation therapy.

Supplemental Figure 1: Classification of all hospitalization episodes



Bars illustrate the classification of the principal cause of hospitalization including all (first and recurrent) admissions

Supplemental Figure 2: Contribution of infection and other classifications to the burden of re-hospitalized time according to survival time



Contribution of infection and other classifications to overall time spent in hospital after discharge from index hospitalization due to: infection-related; other non-cardiovascular causes; decompensated HF; or other cardiovascular causes. Data are presented as a percentage of time in follow-up before death or censorship, with each bar representing a 3-month window of maximum follow-up duration. Each bar describes all patients alive and under follow-up at the time point stated, including only their follow-up data to this time point; this means individual patients can contribute data to multiple bars. Overall re-hospitalized time at each time point is comparable ($p>0.05$ by ANOVA with Bonferroni correction) at each time-point between panels, but the greater contribution of infection to re-hospitalization after index infection-related hospitalization is seen irrespective of survival time.