

Dynamic CO-CIN report to SAGE and NERVTAG

[OFFICIAL-SENSITIVE PROTECT]

Dynamic content updated: 2020-04-30 10:03:08.

Executive summary

The COVID-19 Clinical Information Network (CO-CIN) collated clinical information from the usual health care records of people of all ages admitted to hospital in the UK.

Up to 10th March people with positive swabs were admitted to hospital as part of the containment strategy. Since 10th March, admission is mostly based upon need for treatment of COVID-19 disease. The great majority of cases in the community do not require hospital admission.

In total up until 30 April 2020, CO-CIN has recruited **25886 patients** with confirmed Coronavirus (Figure 1).

The CO-CIN dataset represents 16.1% (25886/161,145) of cases of confirmed Coronavirus cases in the UK, per the PHE daily reports (last updated 9am on 28 April).

Patient data is collected and uploaded from start of admission, however a complete patient data set is not available until the episode of care is complete. This causes a predictable lag in available data influenced by the duration of admission which is greatest for the sickest patients.

The geographical location of our patients can be seen in Figure 2, of these 847 had travelled abroad recently, and 5201 reported visiting or working in a hospital where COVID-19 cases are being managed.

The median age is 72.6753425 (range: 0-104), Male/Female 12610/8583.

The most common symptoms were cough (69%), fever (68%) and shortness of breath (66%) (Figure 3A). 753/18938 (4%) of patients have reported no symptoms. Comorbidity can be seen in Figure 3B. The most common comorbidities were chronic cardiac disease (29%), diabetes without complications (20%) and chronic pulmonary disease (17%). 11106/25886 (43%) of patients have reported no co morbidity. 99/1609 (6%) of women were recorded as being pregnant.

For patients not already in hospital, the median time from onset of symptoms to presentation at hospital was 4 days (range: 0 - 368904 days).

The median length of hospital stay was 7 days (interquartile range: 4-13, n = 12652).

1683/12938 (13%) patients required high-flow oxygen after day 1 of treatment.

Currently 5125 patient(s) have died and 3094 required ICU. 7996 have been discharged home.

Interpretation: The dataset is increasingly more representative of the burden of disease requiring hospitalisation and captures the early exponential rise of disease incidence that is now increasingly driven by domestic transmission events in the community.

Furthermore, we can now see 'hot spots' of disease incidence that largely reflect areas of high population density (most notably London) with a few exceptions to this. There are more men than women, consistent with reports from other countries. The proportion of pregnant women affected is broadly in line with the proportion of pregnant women in the general population.

The commonest comorbidity is chronic cardiac disease, reflecting patterns seen in other countries, although nearly a quarter of patients admitted do not have underlying comorbid disease.

Patients documented as being admitted to ICU are mainly 50-75 years old. When interpreting admission to ICU it is important to remember that we are currently unable to capture treatment limiting decisions regarding level of care.

Prof Calum Semple, Professor in Child Health and Outbreak Medicine, University of Liverpool.

Dr Annemarie Docherty, Academic Consultant Intensive Care University of Edinburgh.

Dr Chris Green, Academic Consultant Infectious Disease University of Birmingham.

Prof Ewen Harrison, Director Centre for Medical Informatics, Usher Institute, University of Edinburgh (analysis).

Professor Tom Solomon, Director HPRU Emerging and Zoonotic Infection.

ISARIC Investigators (Prof. Peter Horby, Prof. Peter Openshaw, Dr Gail Carson, and Dr Kenneth Baillie).

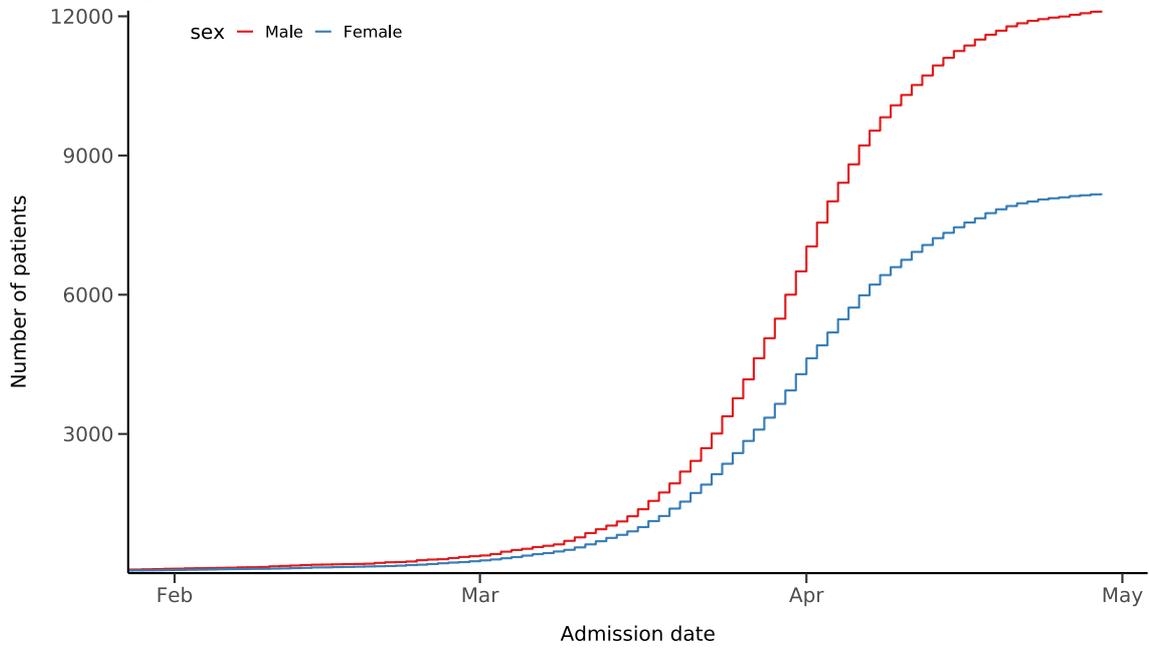
Analytics: Lisa Norman, Riinu Pius, Thomas Drake, Cameron Fairfield, Stephen Knight, Kenneth McLean, Katie Shaw.

Admission

Figure 1

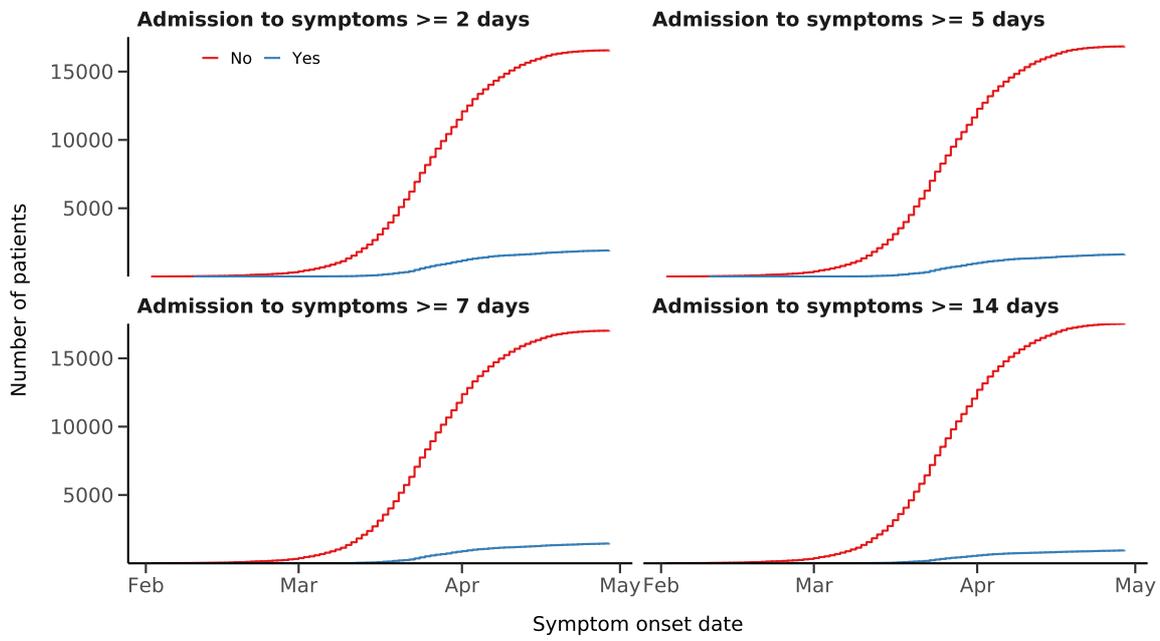
Hospital admission with COVID-19 by sex

Figure 1A

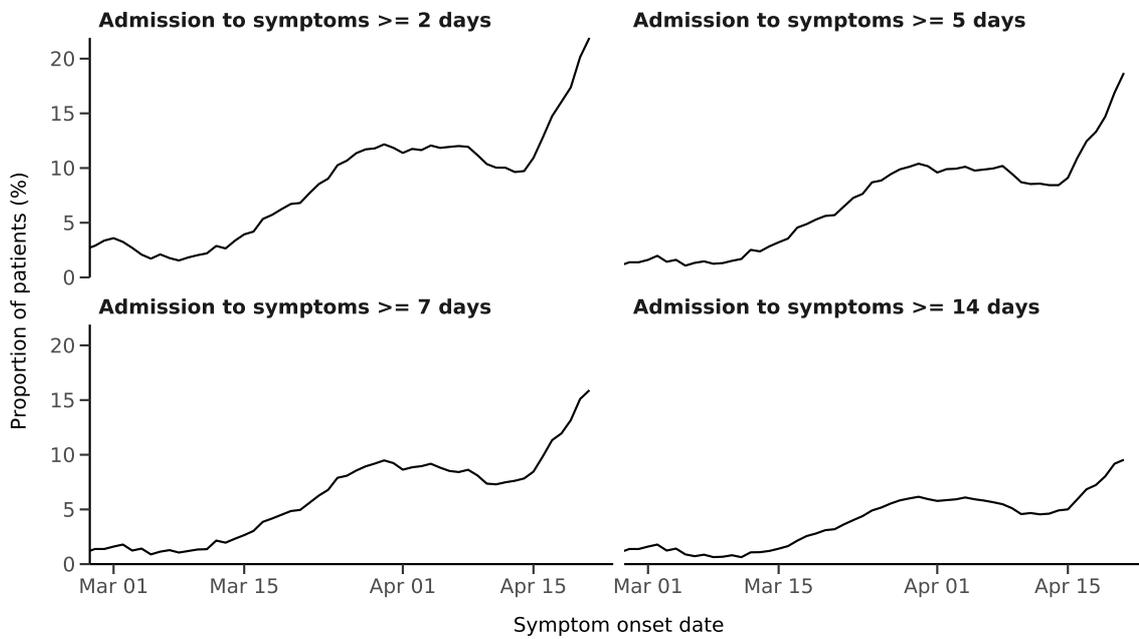


Number with symptom onset occurring after admission to hospital

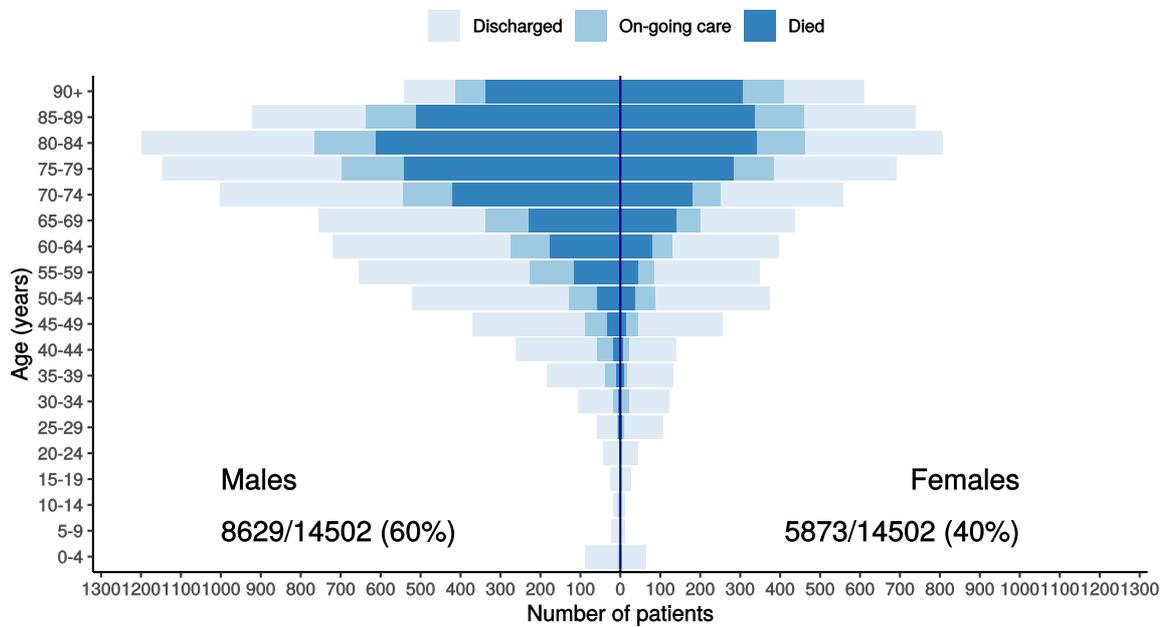
Figure 1B



Proportion with symptom onset occurring after hospital admission
 Figure 1C - 7-day rolling percentage. n = 18481

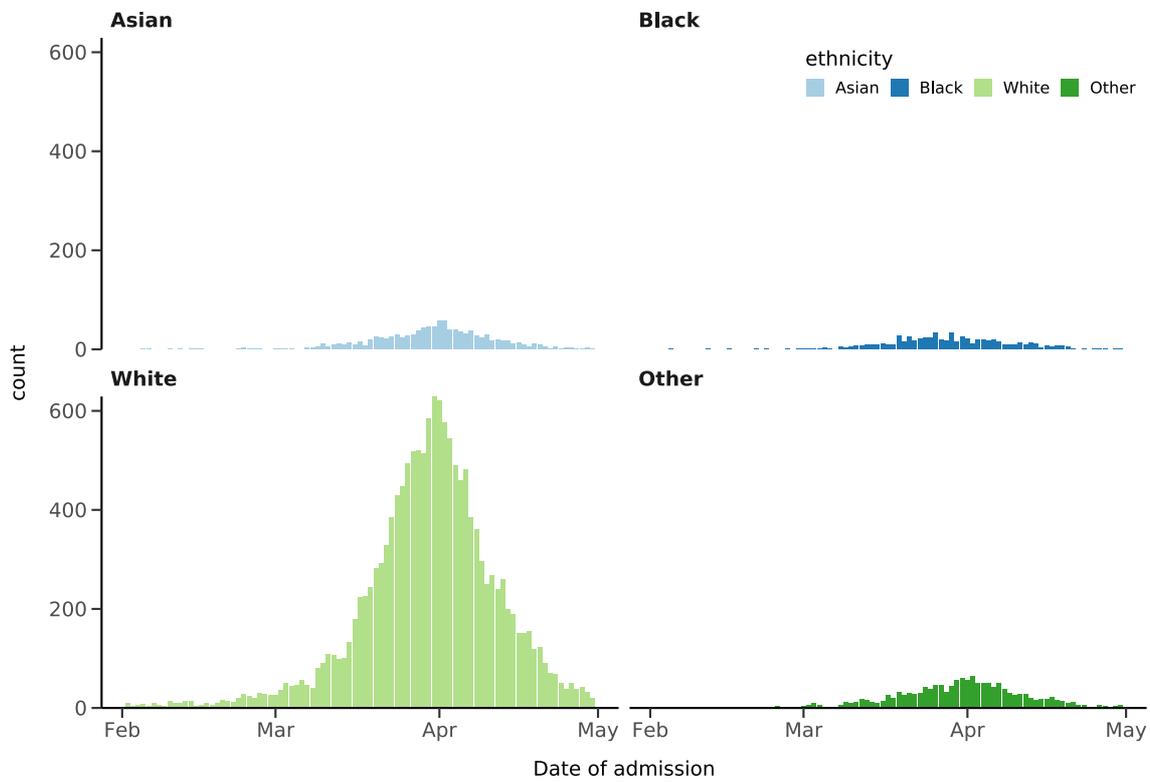


Patients with outcome stratified by age, and sex
 Figure 1D



Hospital admission with COVID-19 by ethnicity

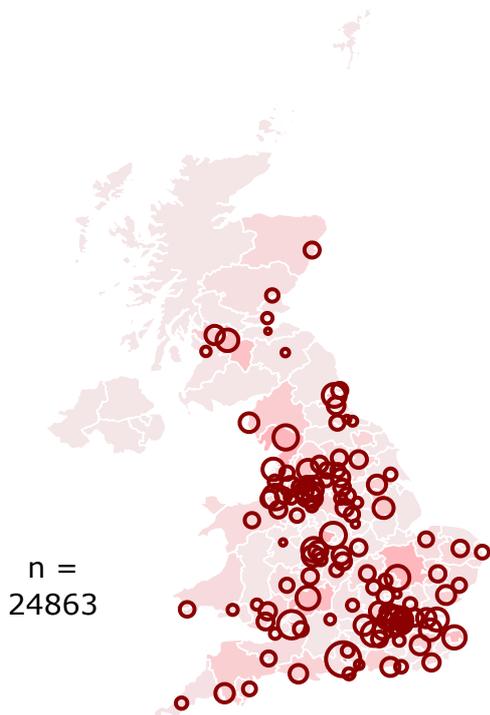
Figure 1E



Location by CCG / Healthboard

Figure 2

Click and drag on map to zoom into area. Reset via toolbar at top of map.



Symptoms and comorbidity

Figure 3A

Symptoms on presentation to hospital (% patients, n = 18748) Comorbidity (% patients, n = 18760)

Figure 3A

Figure 3B

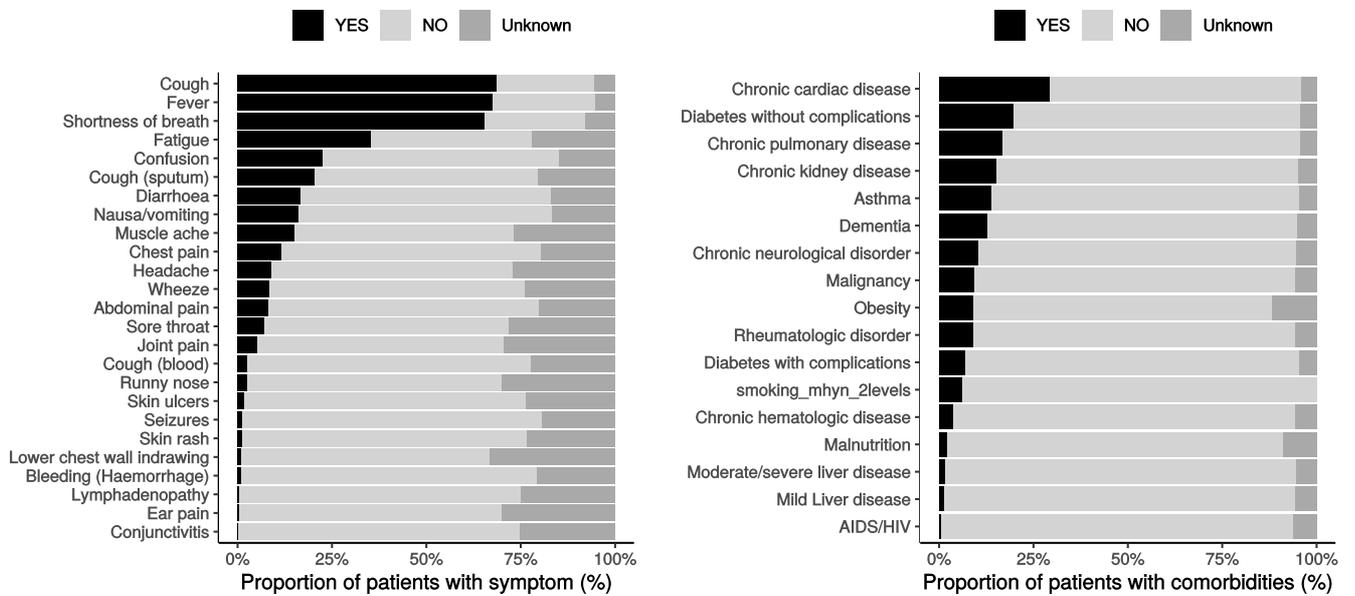
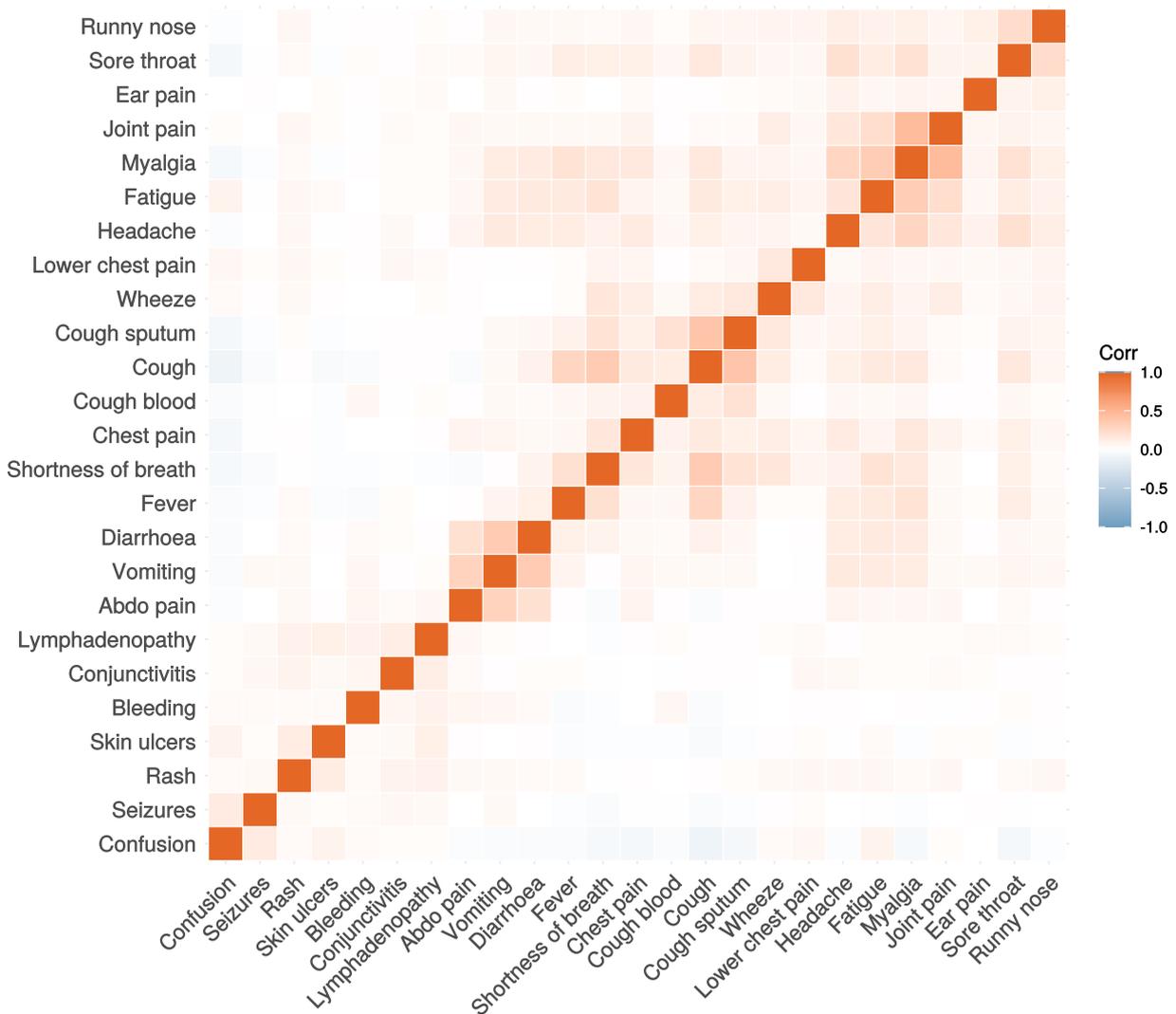


Figure 3C

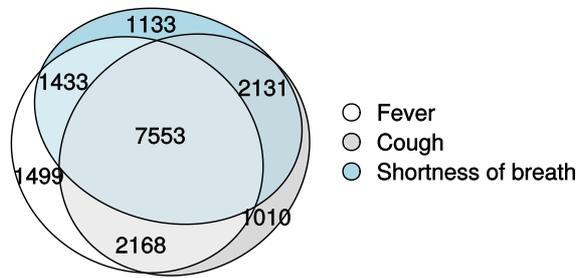
Correlation of symptoms in all pages. Note clusters, top right to bottom left, flu-like, coryzal, abdominal, respiratory, neurocutaneous.



Symptoms (diagnostic criteria)

Figure 4A

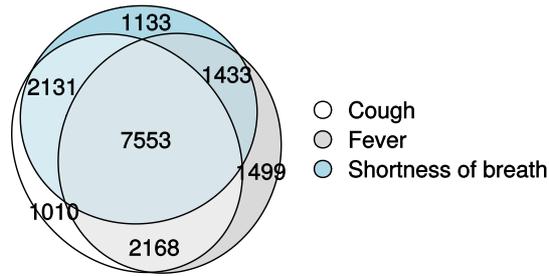
n = 18748



Symptoms (most common)

Figure 4B

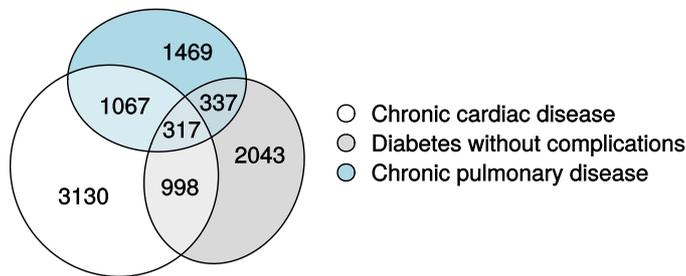
n = 18748



Comorbidity (most common)

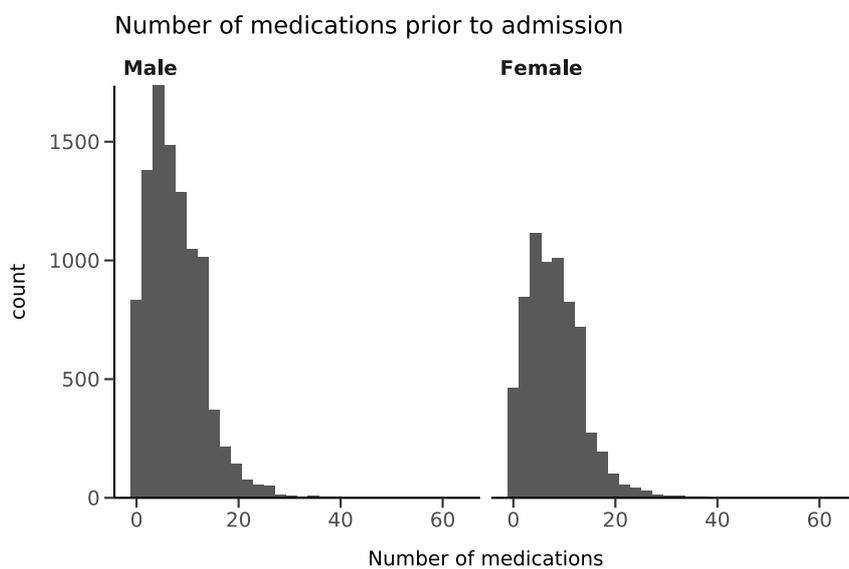
Figure 4C

n = 18760



Medication prior to illness

Figure 5

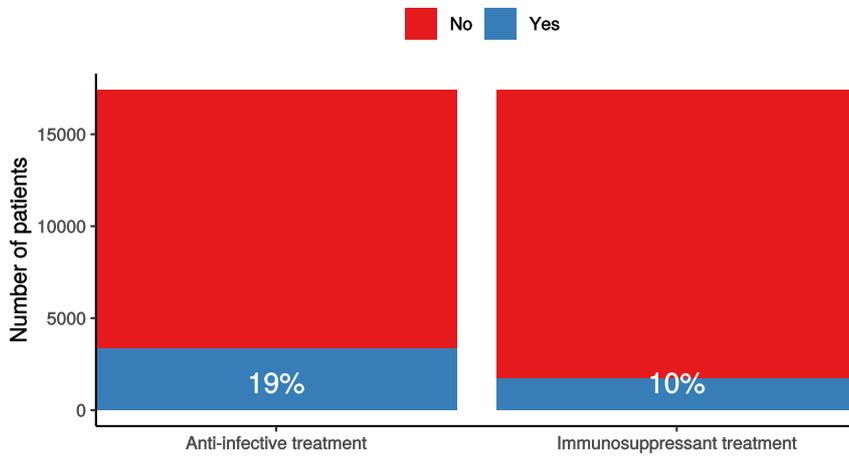


Preadmission treatment

Figure 6

Pre-admission treatment

Anti-infectives for illness episode (left) immunosuppressants including oral (not



Patient flow

Figure 7A - All patients

N = 19236

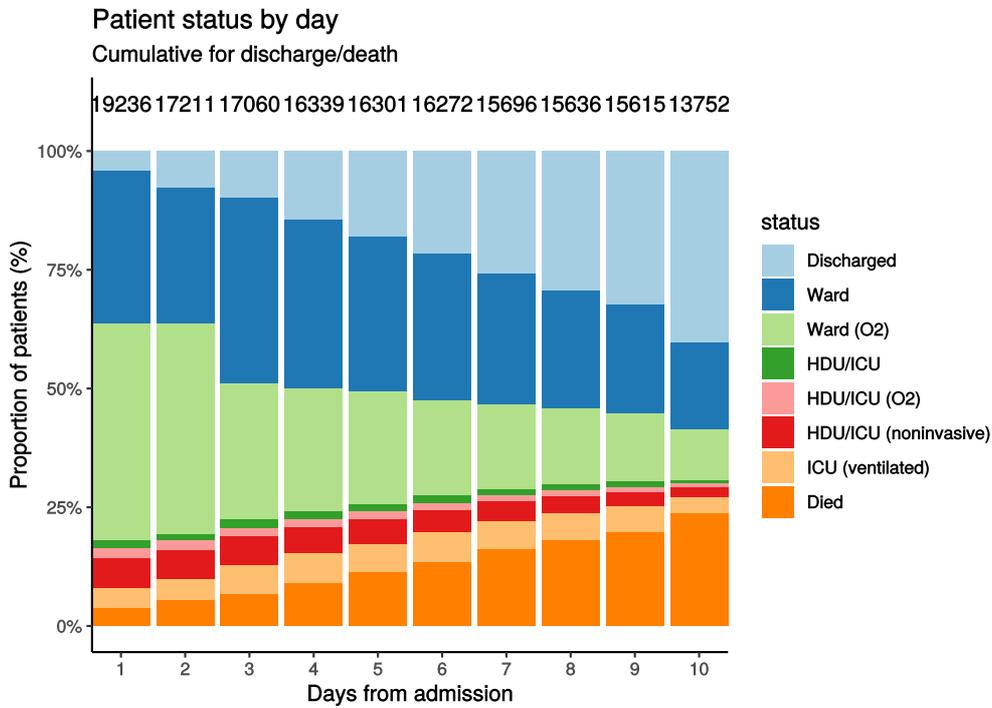
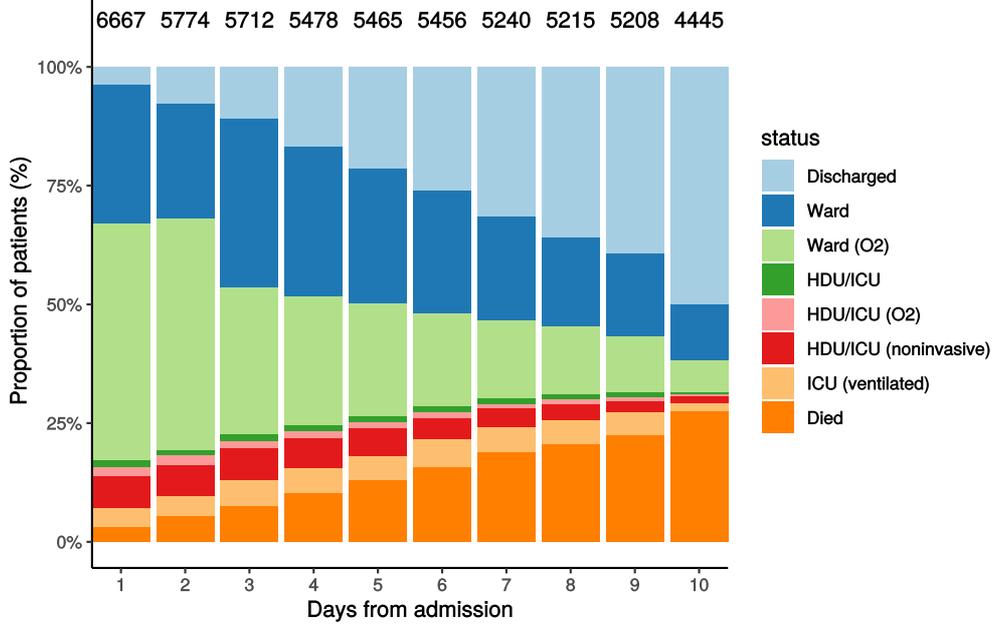


Figure 7B - Patients admitted ≥ 14 days and ≤ 28 days ago

N = 6667

Patient status by day
Cumulative for discharge/death



Oxygen requirement

Figure 8A - All patients

N = 17465

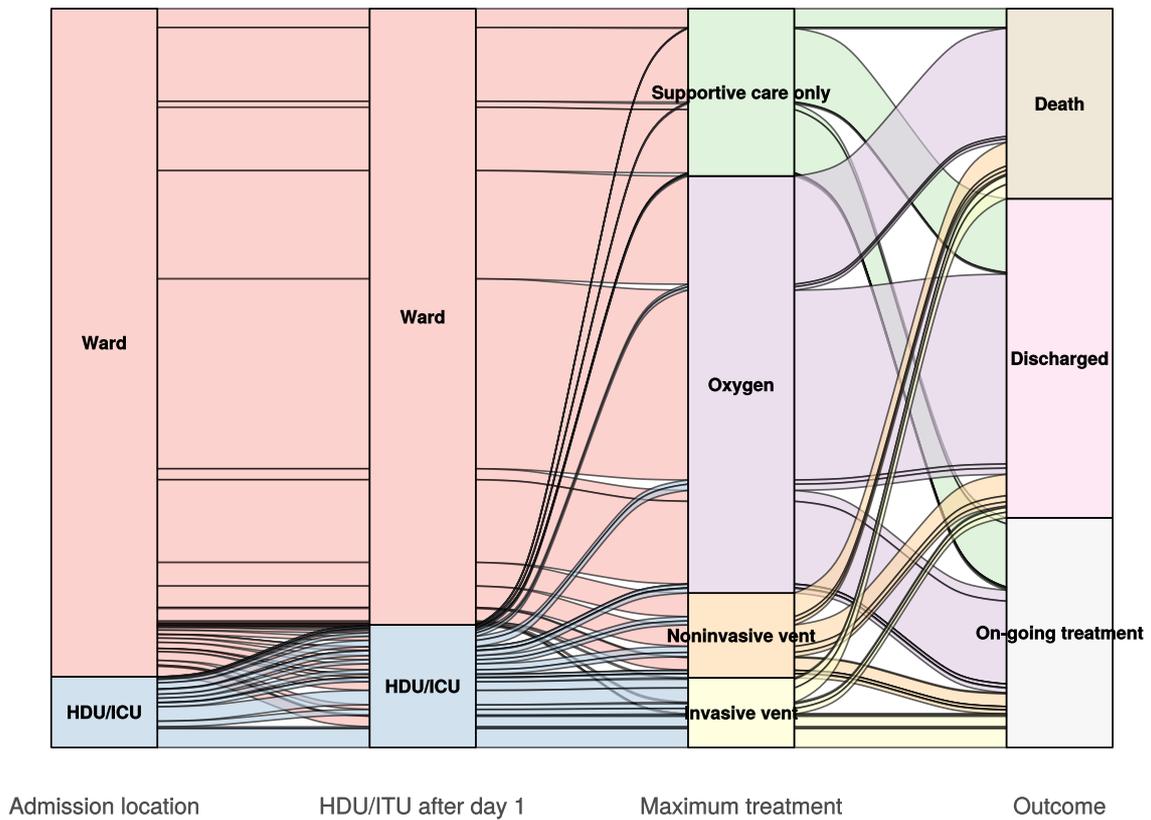
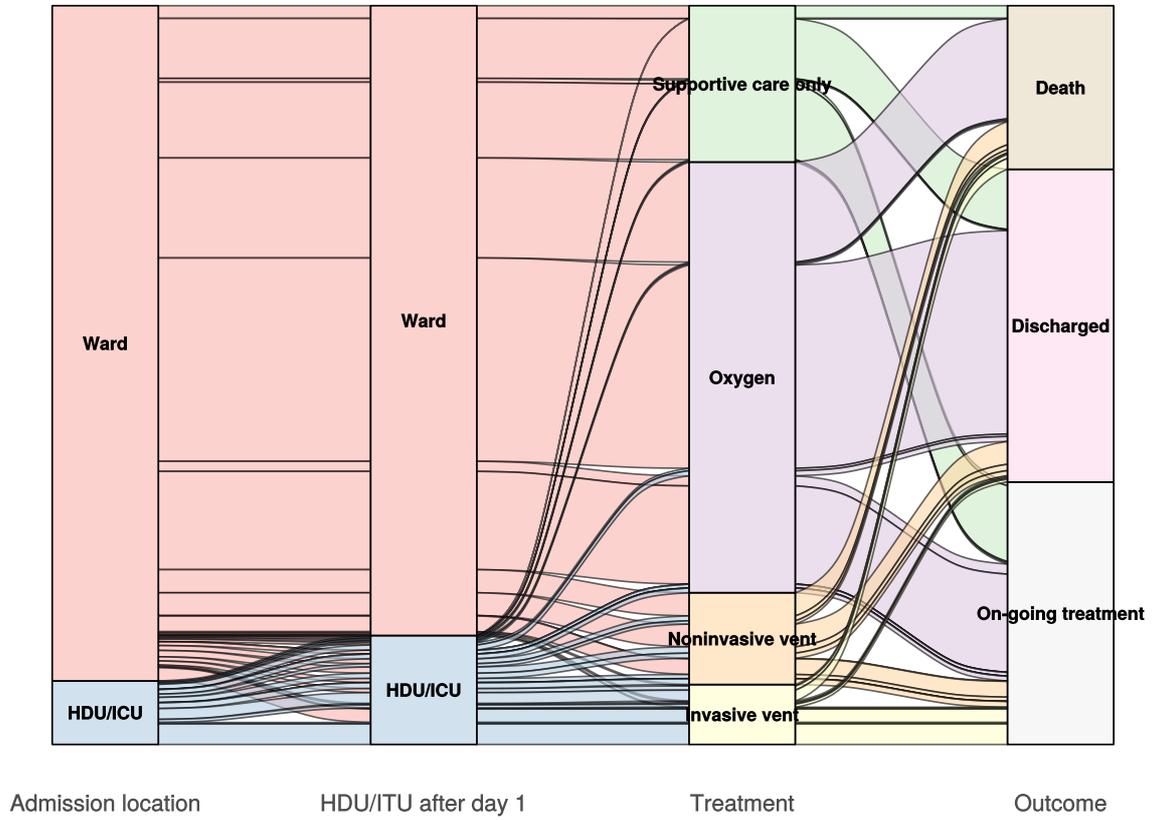


Figure 8B - Patients admitted ≥ 14 days and ≤ 28 days ago

N = 6106

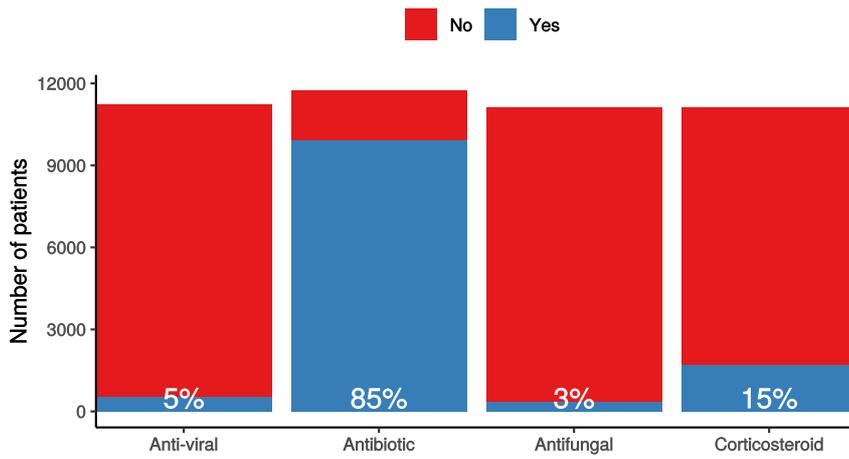


In-hospital medical treatment

Figure 9

In-hospital treatment

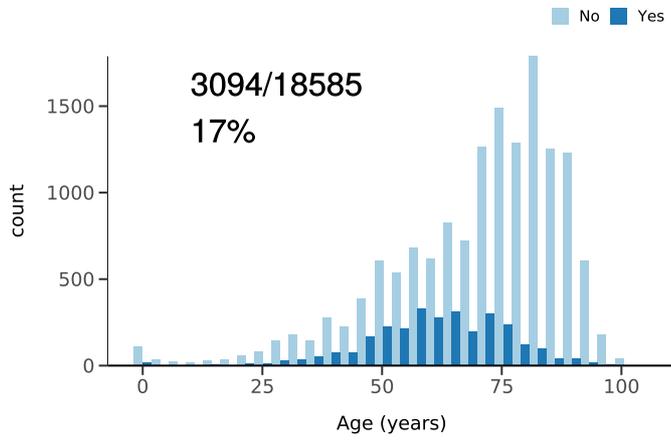
Anti-virals, antibiotics, corticosteroids, and anti-fungals for patients who have cc



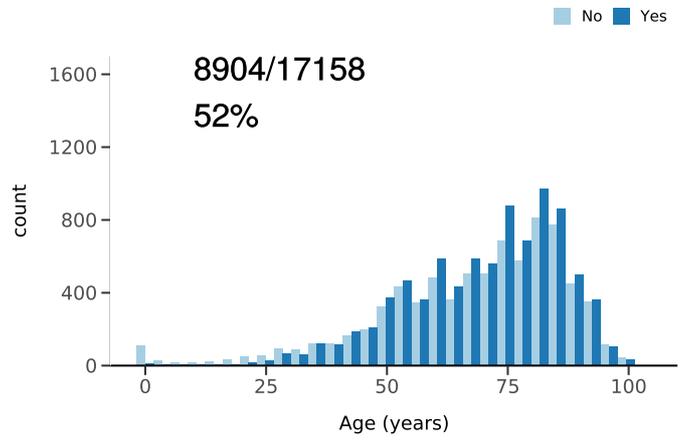
Treatment

Figure 10

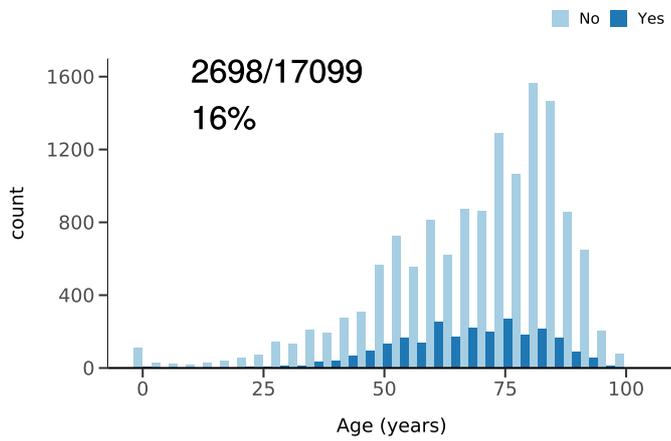
ICU/HDU admission
Figure 10A



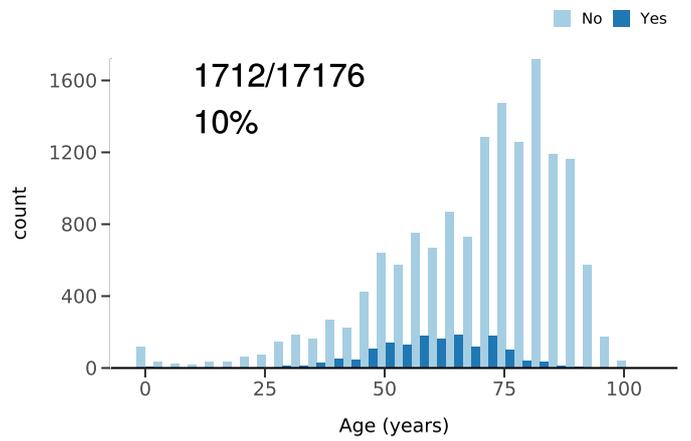
High flow oxygen
Figure 10B



Noninvasive ventilation
Figure 10C



Invasive ventilation
Figure 10D

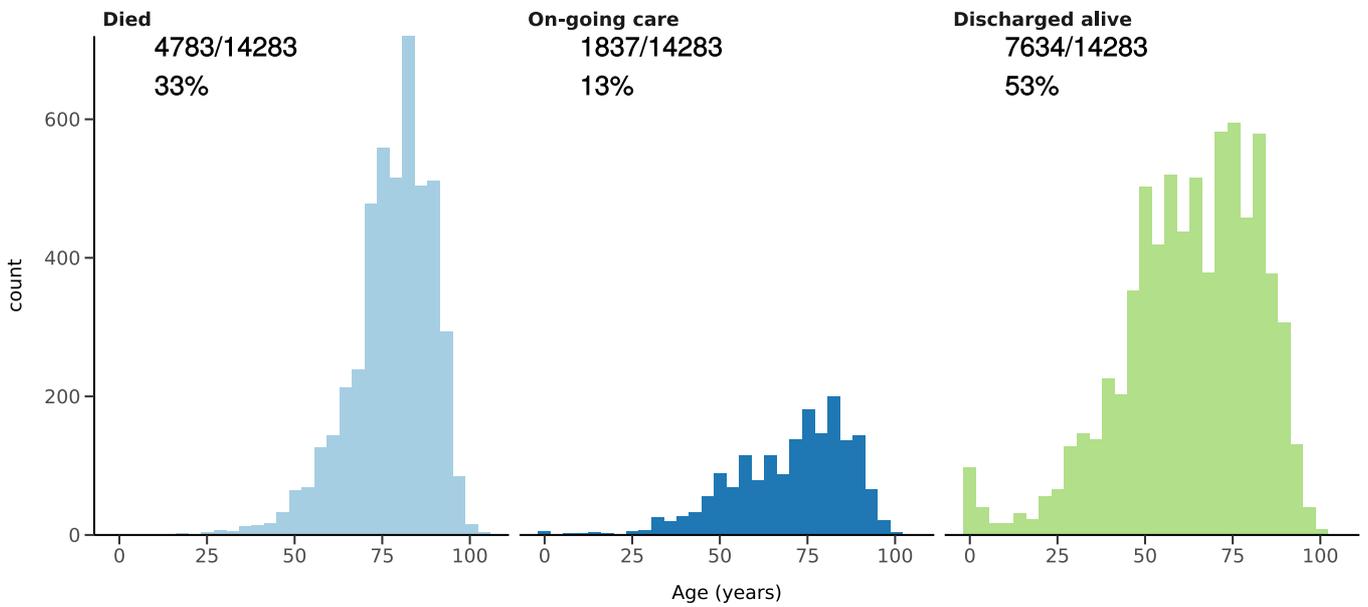


Status in patients admitted ≥ 14 days from today

Figure 11

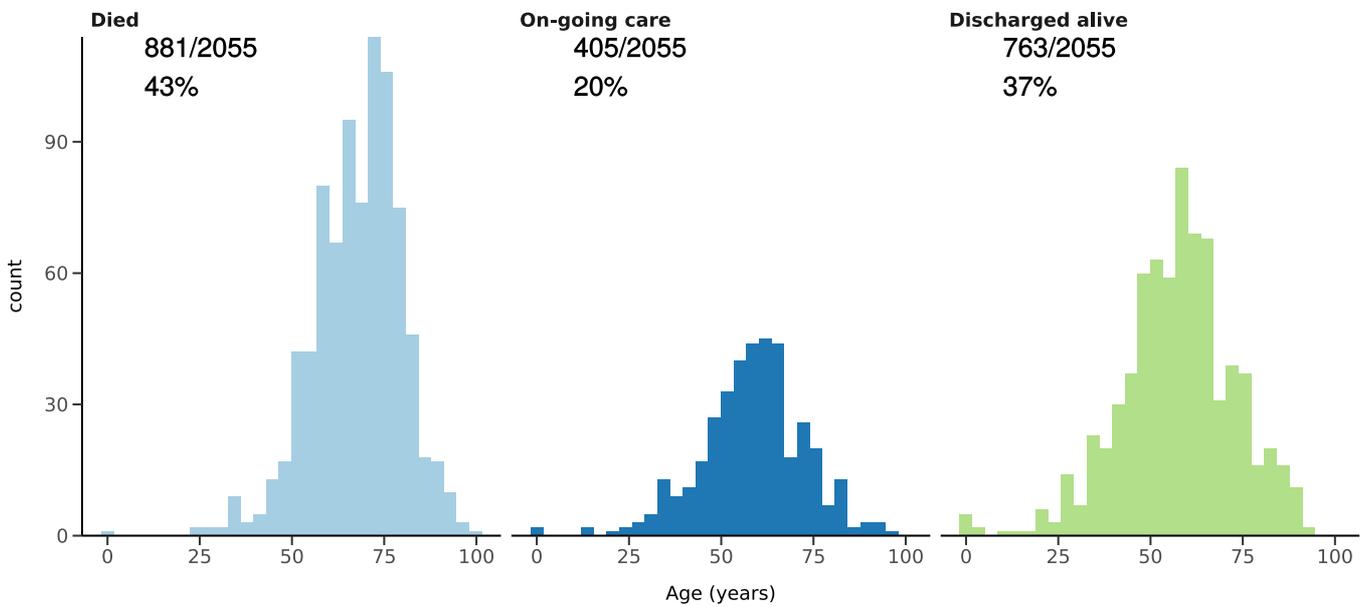
All: status in patients admitted ≥ 14 days ago

Figure 11A



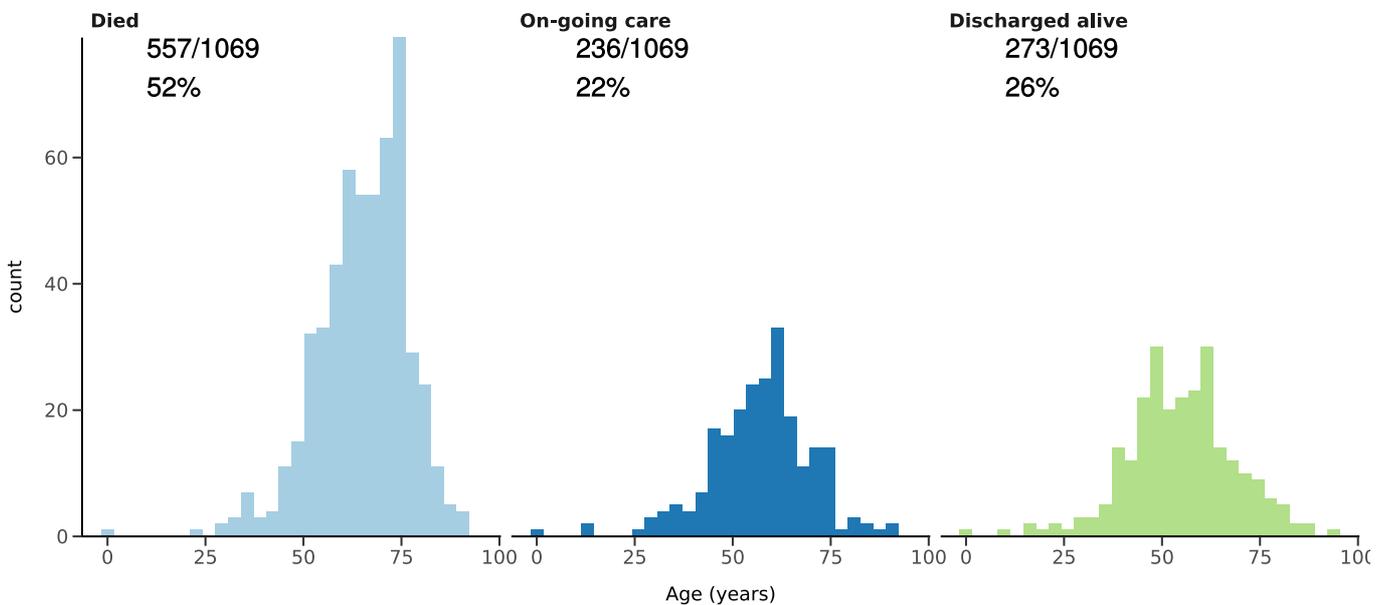
ICU/HDU admissions: status in patients admitted ≥ 14 days ago

Figure 11B



Invasive ventilation: status in patients admitted ≥ 14 days ago

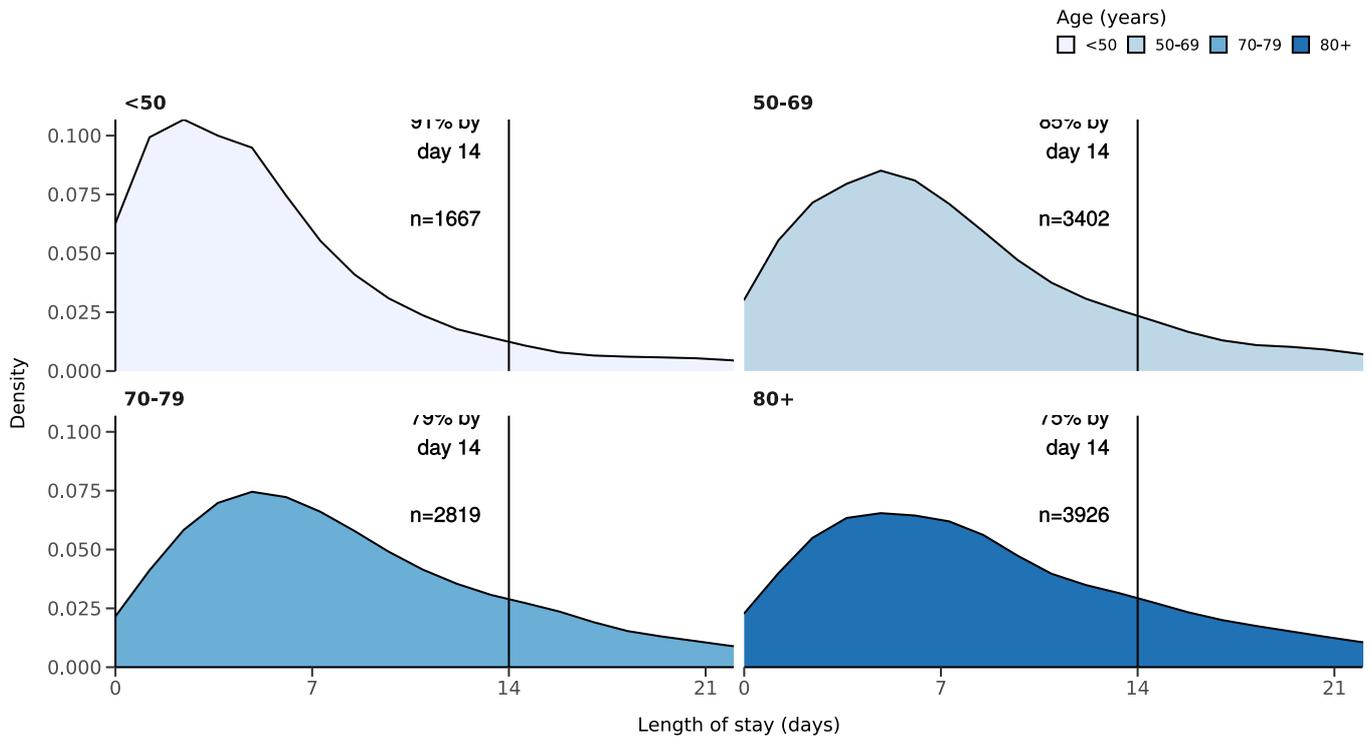
Figure 11c



Length of stay stratified by age

Figure 12

Length of stay stratified by age
Proportion who reach outcome by day 14 shown



Predictors of death: logistic regression multivariable model

Logistic regression model only includes patients admitted >14 days ago from today.

Dependent: death		No	Yes		OR (univariable)	OR (multivariable)
Age on admission (years)	<50	1723 (94.3)	105 (5.7)	•	•	
	50-69	2755 (76.6)	840 (23.4)	5.00 (4.07-6.21, p<0.001)	4.54 (3.59-5.82, p<0.001)	
	70-79	1594 (53.9)	1362 (46.1)	14.02 (11.42-17.39, p<0.001)	11.34 (8.95-14.54, p<0.001)	
	80+	1838 (44.2)	2317 (55.8)	20.69 (16.91-25.56, p<0.001)	16.28 (12.85-20.89, p<0.001)	
Sex at Birth	Male	4670 (60.6)	3030 (39.4)	•	•	
	Female	3495 (66.8)	1736 (33.2)	0.77 (0.71-0.82, p<0.001)	0.69 (0.63-0.76, p<0.001)	
Chronic cardiac disease	NO	5799 (69.9)	2500 (30.1)	•	•	
	YES	1817 (50.1)	1813 (49.9)	2.31 (2.14-2.51, p<0.001)	1.26 (1.14-1.40, p<0.001)	
Chronic pulmonary disease	NO	6521 (66.7)	3257 (33.3)	•	•	
	YES	1061 (50.4)	1044 (49.6)	1.97 (1.79-2.17, p<0.001)	1.39 (1.24-1.56, p<0.001)	
Chronic neurological disorder	NO	6811 (65.3)	3617 (34.7)	•	•	
	YES	684 (52.6)	617 (47.4)	1.70 (1.51-1.91, p<0.001)	1.39 (1.21-1.61, p<0.001)	
Chronic hematologic disease	NO	7218 (64.6)	3964 (35.4)	•	•	
	YES	263 (51.1)	252 (48.9)	1.74 (1.46-2.08, p<0.001)	1.31 (1.05-1.63, p=0.018)	
Chronic kidney disease	NO	6657 (67.1)	3271 (32.9)	•	•	

Dependent: death		No	Yes	OR (univariable)	OR (multivariable)
Dementia	YES	882 (47.0)	995 (53.0)	2.30 (2.08-2.54, p<0.001)	1.45 (1.28-1.64, p<0.001)
	NO	6885 (67.2)	3360 (32.8)	•	•
Obesity	YES	638 (41.9)	883 (58.1)	2.84 (2.54-3.17, p<0.001)	1.52 (1.33-1.74, p<0.001)
	NO	6253 (64.2)	3491 (35.8)	•	•
Malignancy	YES	714 (65.3)	380 (34.7)	0.95 (0.84-1.09, p=0.475)	1.55 (1.32-1.81, p<0.001)
	NO	6864 (65.3)	3650 (34.7)	•	•
	YES	624 (53.0)	554 (47.0)	1.67 (1.48-1.88, p<0.001)	1.14 (0.99-1.33, p=0.074)

Number in dataframe = 18930, Number in model = 10048, Missing = 8882, AIC = 11166.1, C-statistic = 0.747, H&L = Chi-sq(8) 41.55 (p<0.001)

Figure 13 - Adjusted odds ratio plot

Death

Age on admission (years)	<50	-
	50-69	4.54 (3.59-5.82, p<0.001)
	70-79	11.34 (8.95-14.54, p<0.001)
	80+	16.28 (12.85-20.89, p<0.001)
Sex at Birth	Female	0.69 (0.63-0.76, p<0.001)
Chronic cardiac disease	YES	1.26 (1.14-1.40, p<0.001)
Chronic pulmonary disease	YES	1.39 (1.24-1.56, p<0.001)
Chronic neurological disorder	YES	1.39 (1.21-1.61, p<0.001)
Chronic hematologic disease	YES	1.31 (1.05-1.63, p=0.018)
Chronic kidney disease	YES	1.45 (1.28-1.64, p<0.001)
Dementia	YES	1.52 (1.33-1.74, p<0.001)
Obesity	YES	1.55 (1.32-1.81, p<0.001)
Malignancy	YES	1.14 (0.99-1.33, p=0.074)

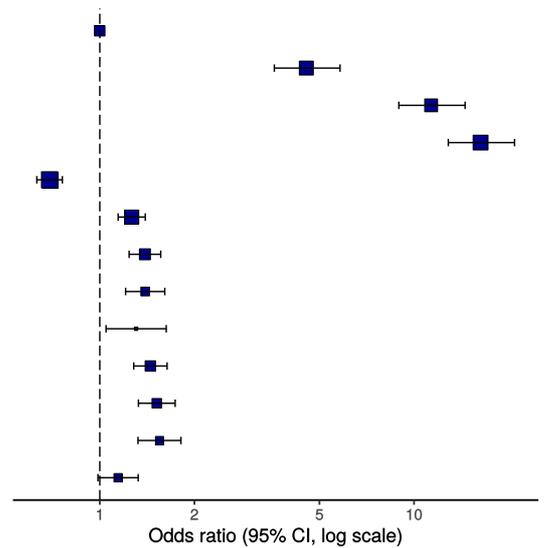
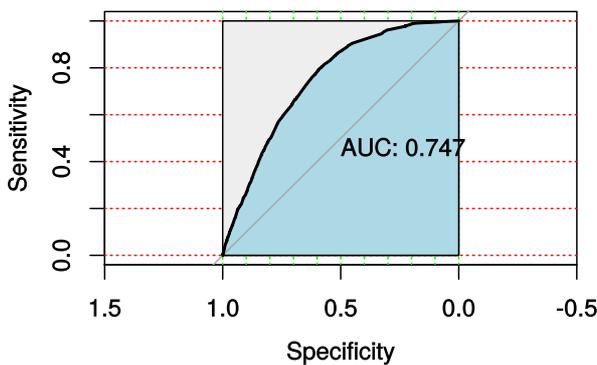


Figure 14 - ROC

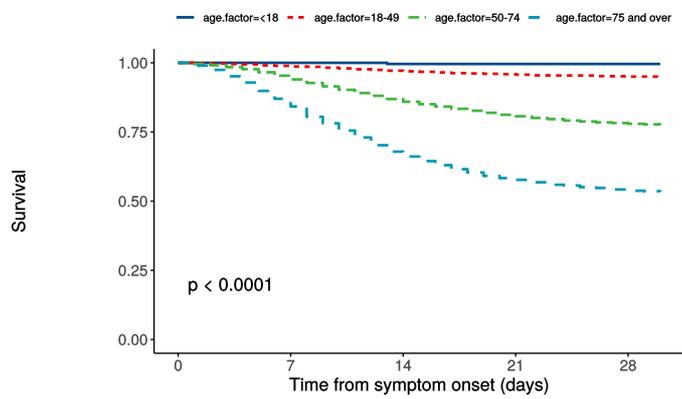


Survival models

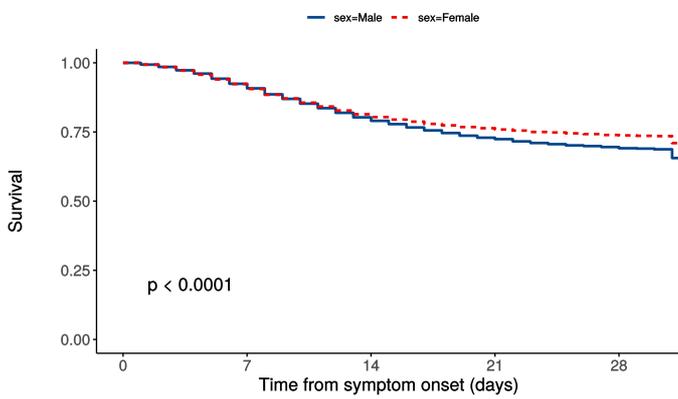
Kaplan-Meier plots for survival from symptom onset stratified by age (left) and sex (right)

Figure 15

P-value is log-rank test.



	0	7	14	21	28
age.factor=<18	299	254	236	231	223
age.factor=18-49	2257	2046	1702	1526	1475
age.factor=50-74	7302	6304	4659	3822	3495
age.factor=75 and over	7774	5964	3841	2980	2646



	0	7	14	21	28
sex=Male	11079	9224	6622	5346	4868
sex=Female	7430	6124	4503	3857	3600

Cox proportional hazards model

The methodology for this is now up and running, but models are still being explored. **What is presented here is not a final model, but to demonstrate methodology.** The results are correct, but important variables have not yet been included.

Time from symptom onset.

Dependent: Surv(time, status)		all	HR (univariable)	HR (multivariable)
Age on admission (years)	<50	2616 (14.6)	•	•
	50-69	5448 (30.4)	4.36 (3.52-5.41, p<0.001)	4.31 (3.27-5.69, p<0.001)
	70-79	4094 (22.9)	10.91 (8.84-13.45, p<0.001)	10.23 (7.79-13.45, p<0.001)
	80+	5737 (32.1)	15.15 (12.32-18.62, p<0.001)	13.33 (10.15-17.51, p<0.001)
Sex at Birth	Male	10974 (59.7)	•	•
	Female	7393 (40.3)	0.83 (0.78-0.89, p<0.001)	0.79 (0.73-0.86, p<0.001)
qSOFA score on admission	0	5309 (39.4)	•	•
	1	6512 (48.3)	1.54 (1.43-1.67, p<0.001)	1.63 (1.49-1.78, p<0.001)
	2	1512 (11.2)	3.03 (2.74-3.35, p<0.001)	2.80 (2.50-3.13, p<0.001)
	3	157 (1.2)	5.03 (4.05-6.24, p<0.001)	3.80 (2.98-4.84, p<0.001)
Symptomatic at presentation	No symptoms	349 (2.0)	•	•
	Symptoms	17212 (98.0)	1.11 (0.89-1.39, p=0.361)	•
Chronic cardiac disease	NO	11704 (69.9)	•	•
	YES	5037 (30.1)	2.07 (1.94-2.20, p<0.001)	1.30 (1.20-1.40, p<0.001)
Chronic kidney disease	NO	14000 (84.5)	•	•
	YES	2573 (15.5)	1.93 (1.79-2.07, p<0.001)	1.26 (1.15-1.38, p<0.001)
Moderate/severe liver disease	NO	16178 (98.3)	•	•
	YES	272 (1.7)	1.39 (1.12-1.72, p=0.003)	1.65 (1.27-2.16, p<0.001)
Chronic neurological disorder	NO	14643 (89.0)	•	•
	YES	1813 (11.0)	1.67 (1.54-1.82, p<0.001)	•

Dependent: Surv(time, status)		all	HR (univariable)	HR (multivariable)
Malignancy	NO	14853 (90.4)	•	•
	YES	1586 (9.6)	1.55 (1.41-1.70, p<0.001)	1.10 (0.98-1.24, p=0.100)
Chronic hematologic disease	NO	15763 (96.0)	•	•
	YES	651 (4.0)	1.56 (1.37-1.79, p<0.001)	•
Obesity	NO	13681 (89.4)	•	•
	YES	1615 (10.6)	0.91 (0.81-1.02, p=0.091)	1.34 (1.18-1.53, p<0.001)
Diabetes without complications	NO	13299 (79.8)	•	•
	YES	3374 (20.2)	1.25 (1.16-1.34, p<0.001)	•
Rheumatologic disorder	NO	14805 (90.4)	•	•
	YES	1568 (9.6)	1.22 (1.10-1.35, p<0.001)	•
Dementia	NO	14326 (86.7)	•	•
	YES	2190 (13.3)	2.31 (2.14-2.49, p<0.001)	1.22 (1.10-1.35, p<0.001)
Malnutrition	NO	15451 (97.7)	•	•
	YES	358 (2.3)	1.71 (1.43-2.04, p<0.001)	•
smoking_mhyn_2levels	NO	12859 (93.9)	•	•
	YES	834 (6.1)	1.01 (0.87-1.17, p=0.886)	•

Number in dataframe = 18586, Number in model = 11062, Missing = 7524, Number of events = 2700, Concordance = 0.739 (SE = 0.004), R-squared = 0.158(Max possible = 0.987), Likelihood ratio test = 1907.716 (df = 13, p = 0.000)

Figure 16a - Multivariable Cox proportional hazards model

Survival: HR (95% CI, p-value)

Age on admission (years)	<50	-
	50-69	4.31 (3.27-5.69, p<0.001)
	70-79	10.23 (7.79-13.45, p<0.001)
	80+	13.33 (10.15-17.51, p<0.001)
Sex at Birth	Female	0.79 (0.73-0.86, p<0.001)
qSOFA score on admission	0	-
	1	1.63 (1.49-1.78, p<0.001)
	2	2.80 (2.50-3.13, p<0.001)
	3	3.80 (2.98-4.84, p<0.001)
Chronic cardiac disease	YES	1.30 (1.20-1.40, p<0.001)
Chronic kidney disease	YES	1.26 (1.15-1.38, p<0.001)
Moderate/severe liver disease	YES	1.65 (1.27-2.16, p<0.001)
Malignancy	YES	1.10 (0.98-1.24, p=0.100)
Obesity	YES	1.34 (1.18-1.53, p<0.001)
Dementia	YES	1.22 (1.10-1.35, p<0.001)

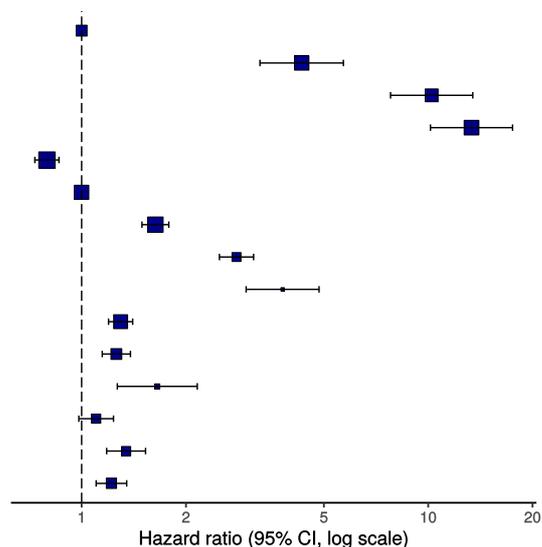
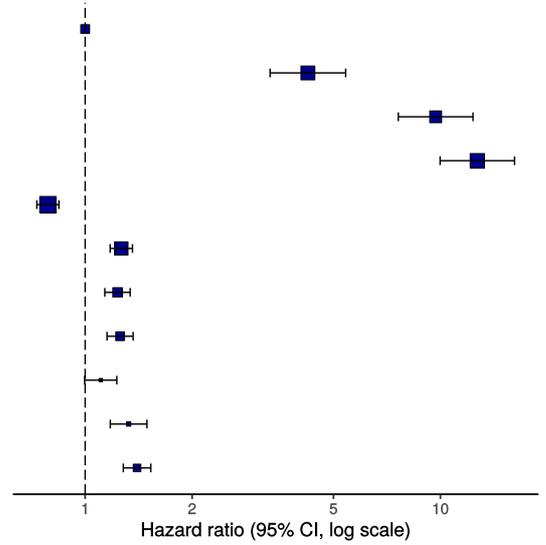


Figure 16b - Multivariable Cox proportional hazards model (age, sex, comorbidities only)

Survival: HR (95% CI, p-value)

Age on admission (years)	<50	-
	50-69	4.24 (3.32-5.41, p<0.001)
	70-79	9.70 (7.61-12.35, p<0.001)
	80+	12.70 (9.98-16.17, p<0.001)
Sex at Birth	Female	0.79 (0.73-0.84, p<0.001)
Chronic cardiac disease	YES	1.26 (1.18-1.36, p<0.001)
Chronic pulmonary disease	YES	1.23 (1.14-1.34, p<0.001)
Chronic kidney disease	YES	1.25 (1.15-1.36, p<0.001)
Malignancy	YES	1.11 (1.00-1.23, p=0.058)
Obesity	YES	1.33 (1.18-1.49, p<0.001)
Dementia	YES	1.40 (1.28-1.53, p<0.001)



ROC = 0.7392896

Figure 17 - Predictions calibration plot

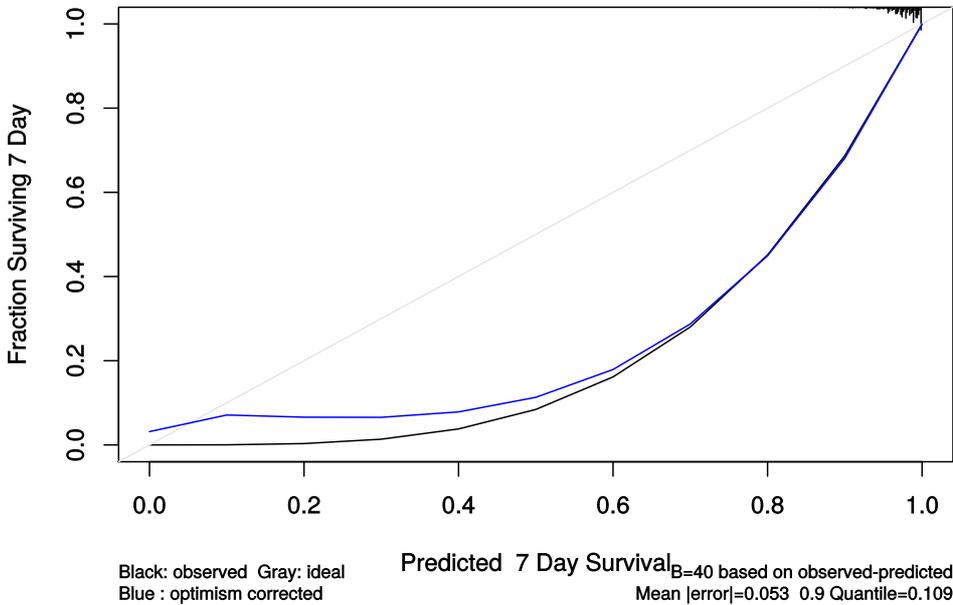


Figure 18 - Prognostic model predictions

Again, for demonstration of methods.

Prognostic model for survival 7 days after onset
qSOFA score on admission

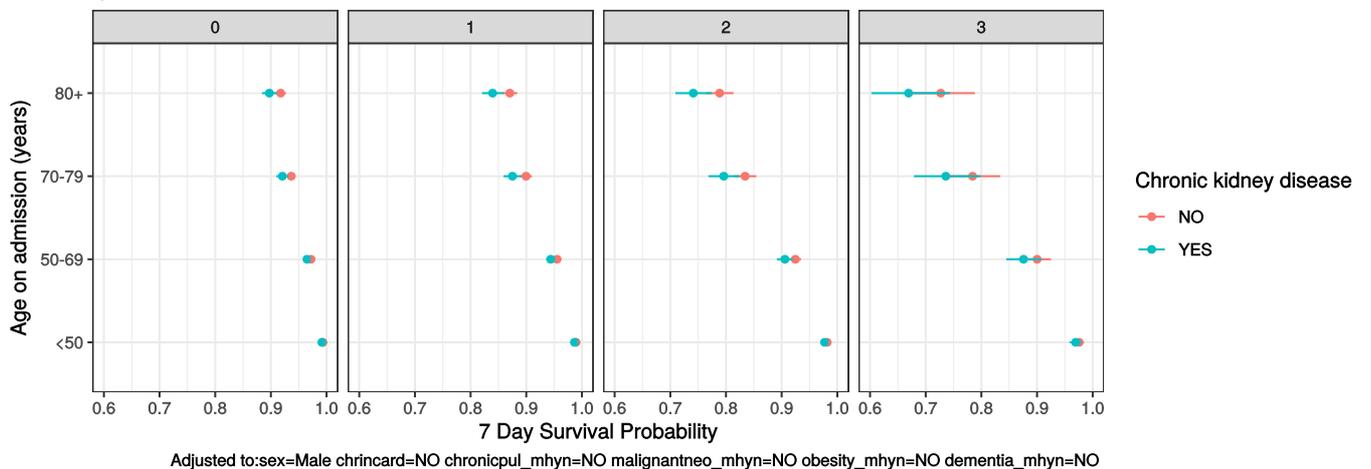


Figure 19 - Death by severity (NEWS) on admission

Number of deaths by NEWS score at admission

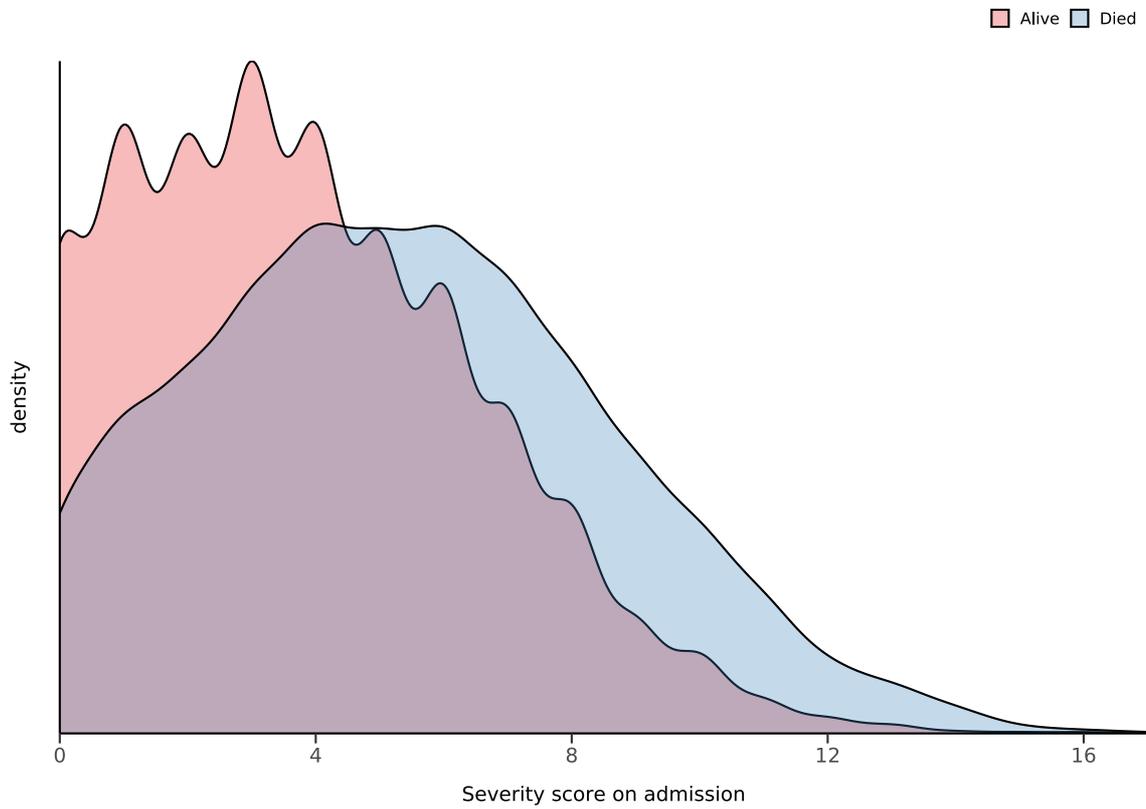


Figure 20 - Death by severity (NEWS) on admission stratified by age

Number of deaths by NEWS score at admission
Stratified by age

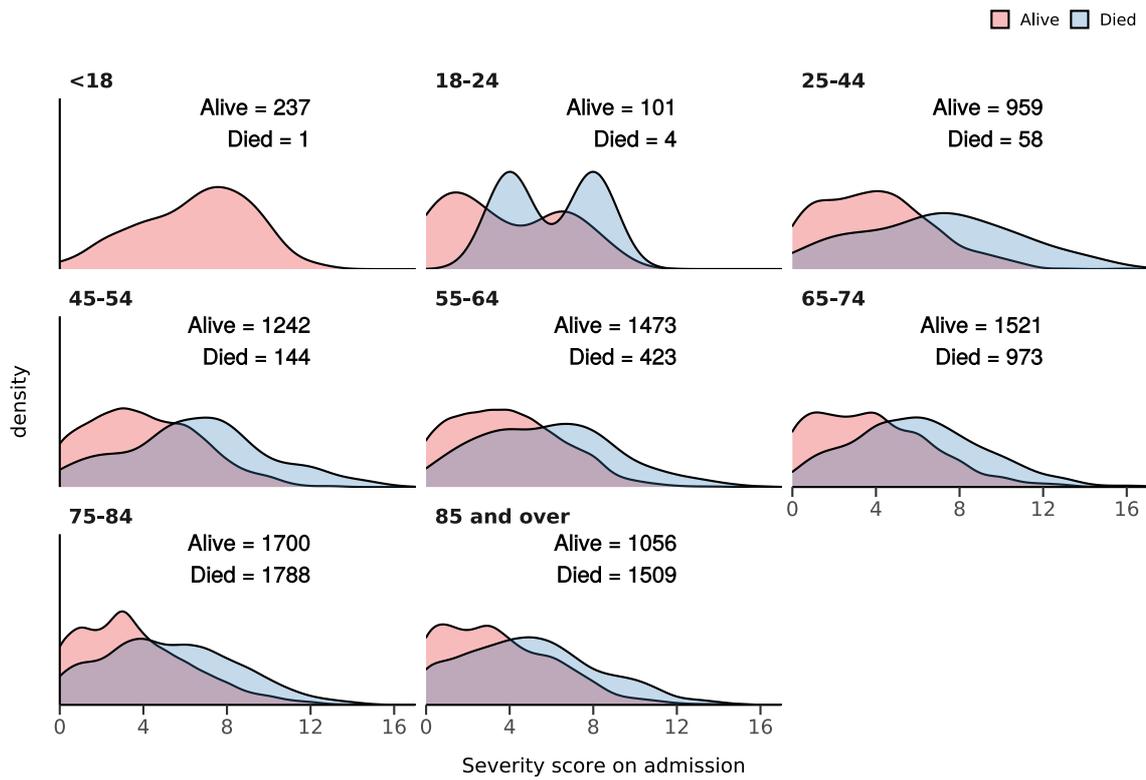
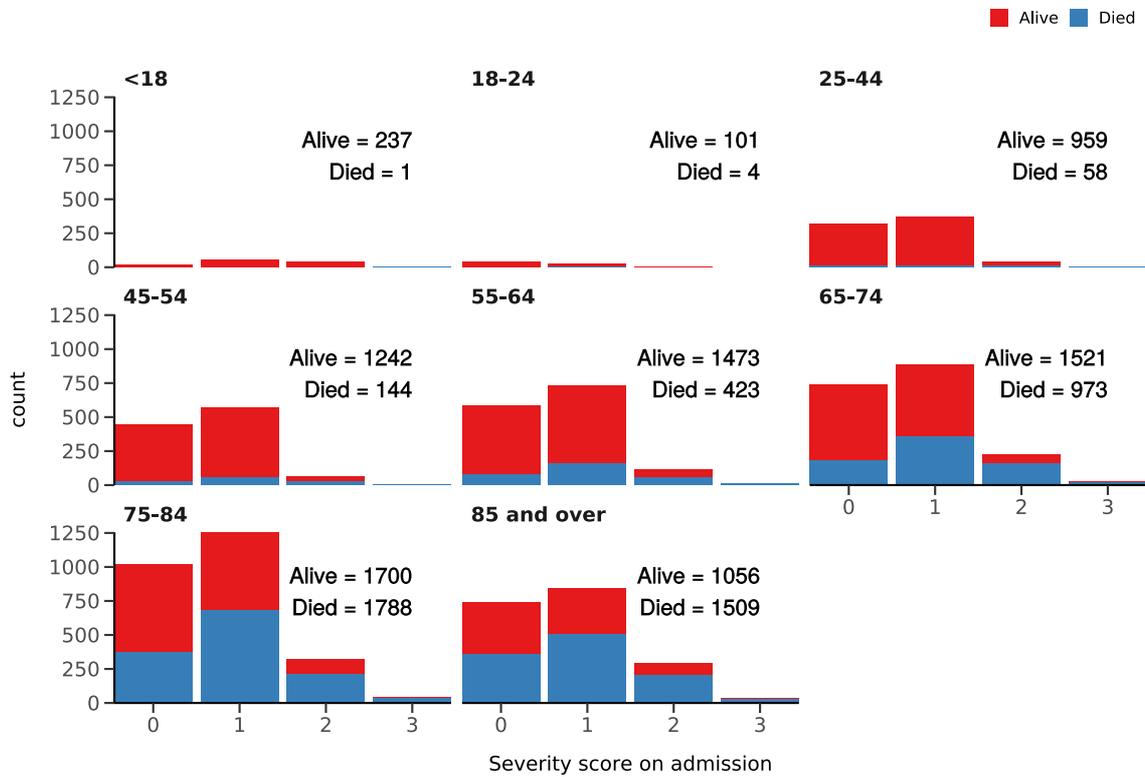


Figure 21 - Death by severity (qSOFA) on admission stratified by age

Number of deaths by qSOFA score at admission
Stratified by age



Healthcare workers

Healthcare worker		NO	YES	p
Total N (%)		17433 (95.1)	893 (4.9)	
NEWS score on admission	Median (IQR)	4.0 (4.0)	4.0 (4.0)	0.666
Death	No	6946 (60.6)	530 (93.8)	<0.001
	Yes	4508 (39.4)	35 (6.2)	

Admission (detail)

Table 1

label	levels	all
Total N (%)		25886 (100.0)
Age on admission (years)	Mean (SD)	68.7 (18.2)
Sex at Birth	Male	12610 (48.7)
	Female	8583 (33.2)
	Not specified	41 (0.2)
	(Missing)	4652 (18.0)
Healthcare worker	YES	893 (3.4)
	NO	17433 (67.3)
	N/A	2064 (8.0)
	(Missing)	5496 (21.2)

label	levels	all
Microbiology lab worker	YES	63 (0.2)
	NO	18185 (70.3)
	N/A	2111 (8.2)
	(Missing)	5527 (21.4)
Onset to admission (days)	Mean (SD)	47.0 (3856.6)
Transfer from other facility	Yes-facility is a study site	349 (1.3)
	Yes-facility is not a study site	1095 (4.2)
	No	17738 (68.5)
	N/A	515 (2.0)
	(Missing)	6189 (23.9)
Travel in 14 d prior to symptoms	Yes	696 (2.7)
	No	15486 (59.8)
	N/A	2810 (10.9)
	(Missing)	6894 (26.6)
Country	Andorra	1 (0.0)
	Antigua and Barbuda	3 (0.0)
	Argentina	1 (0.0)
	Australia	3 (0.0)
	Austria	19 (0.1)
	Bangladesh	1 (0.0)
	Barbados	17 (0.1)
	Belgium	1 (0.0)
	Brazil	3 (0.0)
	Bulgaria	3 (0.0)
	Cambodia	1 (0.0)
	Canada	2 (0.0)
	Cabo Verde	1 (0.0)
	Chile	1 (0.0)
	China	2 (0.0)
	Cuba	1 (0.0)
	Cyprus	23 (0.1)
	Czechia	2 (0.0)
	Dominican Republic	3 (0.0)
	Egypt	7 (0.0)
France	31 (0.1)	
Germany	8 (0.0)	

label	levels	all
	Ghana	1 (0.0)
	Greece	2 (0.0)
	Hong Kong	1 (0.0)
	Hungary	2 (0.0)
	Iceland	1 (0.0)
	India	8 (0.0)
	Indonesia	1 (0.0)
	Iran	6 (0.0)
	Ireland	5 (0.0)
	Italy	80 (0.3)
	Japan	5 (0.0)
	Kenya	1 (0.0)
	Madagascar	1 (0.0)
	Malaysia	4 (0.0)
	Maldives	1 (0.0)
	Mexico	3 (0.0)
	Morocco	3 (0.0)
	Netherlands	9 (0.0)
	New Zealand	2 (0.0)
	Nigeria	2 (0.0)
	Norway	2 (0.0)
	Pakistan	8 (0.0)
	Philippines	4 (0.0)
	Poland	3 (0.0)
	Portugal	17 (0.1)
	Qatar	1 (0.0)
	Romania	6 (0.0)
	Saudi Arabia	2 (0.0)
	Singapore	3 (0.0)
	Slovakia	1 (0.0)
	Somalia	2 (0.0)
	South Africa	8 (0.0)
	South Korea	1 (0.0)
	Spain	168 (0.6)
	Swaziland	1 (0.0)
	Switzerland	8 (0.0)

label	levels	all
	Thailand	8 (0.0)
	Turkey	6 (0.0)
	United Arab Emirates	9 (0.0)
	United Kingdom	104 (0.4)
	Yemen	1 (0.0)
	Zimbabwe	1 (0.0)
	(Missing)	25250 (97.5)
Country 2	Algeria	1 (0.0)
	Antigua and Barbuda	1 (0.0)
	Aruba	1 (0.0)
	Australia	3 (0.0)
	Austria	5 (0.0)
	Barbados	2 (0.0)
	Bulgaria	2 (0.0)
	Canada	1 (0.0)
	Cyprus	3 (0.0)
	Czechia	1 (0.0)
	Egypt	2 (0.0)
	France	8 (0.0)
	Germany	2 (0.0)
	India	2 (0.0)
	Indonesia	1 (0.0)
	Italy	15 (0.1)
	Jamaica	1 (0.0)
	Morocco	1 (0.0)
	Netherlands	2 (0.0)
	Pakistan	1 (0.0)
	Portugal	1 (0.0)
	Qatar	1 (0.0)
	South Africa	1 (0.0)
	Spain	18 (0.1)
	Switzerland	1 (0.0)
	Thailand	1 (0.0)
	Turkey	4 (0.0)
	Vietnam	1 (0.0)
	(Missing)	25803 (99.7)

label	levels	all
Animal, raw meat, insect bites 14 d prior	Yes	102 (0.4)
	No	7427 (28.7)
	Unknown	10589 (40.9)
	N/A	1165 (4.5)
	(Missing)	6603 (25.5)
Animal / insect	2 Budgerigars and 26 Cats at home	1 (1.0)
	2 dogs	1 (1.0)
	Bee Sting	1 (1.0)
	Bird	1 (1.0)
	Bird (pet)	1 (1.0)
	bird (pigeon)	1 (1.0)
	budgies	1 (1.0)
	cat	2 (2.0)
	Cat	1 (1.0)
	CAT	1 (1.0)
	Cat (pet)	1 (1.0)
	Cat / Dog	1 (1.0)
	Cat, Dog (pets)	1 (1.0)
	cats	3 (3.1)
	Cats	2 (2.0)
	chicken & beef	1 (1.0)
	Chickens	1 (1.0)
	COWS	1 (1.0)
	cows, rabbits, pigs goats	1 (1.0)
	DAILY CONTACT WITH DOMESTIC PET CAT	1 (1.0)
	dog	4 (4.1)
	Dog	12 (12.2)
	DOG	3 (3.1)
	DOG FAMILY PET	1 (1.0)
	Dog Pet	1 (1.0)
	Dog, domestic animal living in their home.	1 (1.0)
	dogs and cats	1 (1.0)
	Dogs at home	1 (1.0)
	Domestic pet dog	1 (1.0)
	DOMESTIC ANIMAL	2 (2.0)
	Domestic animal and faeces/nest	1 (1.0)

label	levels	all
	domestic animal living in his home	1 (1.0)
	domestic animals	1 (1.0)
	Domestic Animals living in his/her home	1 (1.0)
	Domestic animals living in home	1 (1.0)
	Domestic cats	1 (1.0)
	domestic dog	1 (1.0)
	Domestic Per (dog)	1 (1.0)
	Domestic pest (cats)	1 (1.0)
	Domestic Pet	5 (5.1)
	Domestic Pet (Dog)	6 (6.1)
	Domestic pet cat	1 (1.0)
	Domestic pet Dog	1 (1.0)
	Domestic pet, dog	1 (1.0)
	Domestic pets	1 (1.0)
	Domestic Pets	2 (2.0)
	Domestic pets (dog)	1 (1.0)
	Domestic Pets Cat and Dog	1 (1.0)
	FARM ANIMALS - LAMBS	1 (1.0)
	Farm animals, cattle	1 (1.0)
	Guinea Pig	1 (1.0)
	HORSES	1 (1.0)
	mosquito	1 (1.0)
	pet dog	1 (1.0)
	pet dog	1 (1.0)
	Pet dog	1 (1.0)
	Pet dog -ongoing daily contact	1 (1.0)
	Pet dog ongoing daily contact	1 (1.0)
	Prepared raw chicken	1 (1.0)
	raw chicken	1 (1.0)
	Raw Chicken	1 (1.0)
	Rodent	1 (1.0)
	Rodent - hamster,	1 (1.0)
	she has a cat	1 (1.0)
	Sheep & Cattle	1 (1.0)
	Two cats	1 (1.0)
	unknown	1 (1.0)

Symptoms (detail)

Table 2

Stratified: all		all
Total N (%)		25886 (100.0)
Fever	YES	12699 (49.1)
	NO	5056 (19.5)
	Unknown	993 (3.8)
	(Missing)	7138 (27.6)
Cough	YES	12899 (49.8)
	NO	4812 (18.6)
	Unknown	1043 (4.0)
	(Missing)	7132 (27.6)
Cough (sputum)	YES	3806 (14.7)
	NO	10982 (42.4)
	Unknown	3810 (14.7)
	(Missing)	7288 (28.2)
Cough (blood)	YES	494 (1.9)
	NO	13924 (53.8)
	Unknown	4150 (16.0)
	(Missing)	7318 (28.3)
Sore throat	YES	1324 (5.1)
	NO	12002 (46.4)
	Unknown	5241 (20.2)
	(Missing)	7319 (28.3)
Runny nose	YES	478 (1.8)
	NO	12543 (48.5)
	Unknown	5545 (21.4)
	(Missing)	7320 (28.3)
Ear pain	YES	81 (0.3)
	NO	12930 (49.9)
	Unknown	5546 (21.4)
	(Missing)	7329 (28.3)
Wheeze	YES	1551 (6.0)
	NO	12592 (48.6)
	Unknown	4427 (17.1)
	(Missing)	7316 (28.3)

Stratified: all		all
Chest pain	YES	2176 (8.4)
	NO	12754 (49.3)
	Unknown	3646 (14.1)
	(Missing)	7310 (28.2)
Muscle ache	YES	2806 (10.8)
	NO	10792 (41.7)
	Unknown	4957 (19.1)
	(Missing)	7331 (28.3)
Joint pain	YES	987 (3.8)
	NO	12070 (46.6)
	Unknown	5474 (21.1)
	(Missing)	7355 (28.4)
Fatigue	YES	6586 (25.4)
	NO	7915 (30.6)
	Unknown	4067 (15.7)
	(Missing)	7318 (28.3)
Shortness of breath	YES	12276 (47.4)
	NO	4985 (19.3)
	Unknown	1473 (5.7)
	(Missing)	7152 (27.6)
Lower chest wall indrawing	YES	196 (0.8)
	NO	12219 (47.2)
	Unknown	6131 (23.7)
	(Missing)	7340 (28.4)
Headache	YES	1697 (6.6)
	NO	11823 (45.7)
	Unknown	5032 (19.4)
	(Missing)	7334 (28.3)
Confusion	YES	4226 (16.3)
	NO	11640 (45.0)
	Unknown	2725 (10.5)
	(Missing)	7295 (28.2)
Seizures	YES	259 (1.0)
	NO	14691 (56.8)
	Unknown	3594 (13.9)
	(Missing)	7342 (28.4)

Stratified: all		all
Abdominal pain	YES	1496 (5.8)
	NO	13350 (51.6)
	Unknown	3725 (14.4)
	(Missing)	7315 (28.3)
Nausea/vomiting	YES	3014 (11.6)
	NO	12475 (48.2)
	Unknown	3096 (12.0)
	(Missing)	7301 (28.2)
Diarrhoea	YES	3115 (12.0)
	NO	12345 (47.7)
	Unknown	3125 (12.1)
	(Missing)	7301 (28.2)
Conjunctivitis	YES	51 (0.2)
	NO	13829 (53.4)
	Unknown	4666 (18.0)
	(Missing)	7340 (28.4)
Skin rash	YES	252 (1.0)
	NO	13959 (53.9)
	Unknown	4334 (16.7)
	(Missing)	7341 (28.4)
Skin ulcers	YES	338 (1.3)
	NO	13838 (53.5)
	Unknown	4370 (16.9)
	(Missing)	7340 (28.4)
Lymphadenopathy	YES	97 (0.4)
	NO	13824 (53.4)
	Unknown	4615 (17.8)
	(Missing)	7350 (28.4)
Bleeding (Haemorrhage)	YES	168 (0.6)
	NO	14537 (56.2)
	Unknown	3824 (14.8)
	(Missing)	7357 (28.4)
If Bleeding (others)	YES	312 (1.2)
	NO	14073 (54.4)
	Unknown	3997 (15.4)
	(Missing)	7504 (29.0)

Comorbidity (detail)

Table 3

Stratified: all		all
Total N (%)		25886 (100.0)
Chronic cardiac disease	YES	5523 (21.3)
	NO	12479 (48.2)
	Unknown	758 (2.9)
	(Missing)	7126 (27.5)
Chronic pulmonary disease	YES	3191 (12.3)
	NO	14739 (56.9)
	Unknown	818 (3.2)
	(Missing)	7138 (27.6)
Asthma	YES	2587 (10.0)
	NO	15251 (58.9)
	Unknown	885 (3.4)
	(Missing)	7163 (27.7)
Chronic kidney disease	YES	2863 (11.1)
	NO	14950 (57.8)
	Unknown	901 (3.5)
	(Missing)	7172 (27.7)
Moderate/severe liver disease	YES	310 (1.2)
	NO	17361 (67.1)
	Unknown	1035 (4.0)
	(Missing)	7180 (27.7)
Mild Liver disease	YES	282 (1.1)
	NO	17358 (67.1)
	Unknown	1065 (4.1)
	(Missing)	7181 (27.7)
Chronic neurological disorder	YES	1981 (7.7)
	NO	15708 (60.7)
	Unknown	1019 (3.9)
	(Missing)	7178 (27.7)
Malignancy	YES	1759 (6.8)
	NO	15905 (61.4)
	Unknown	1054 (4.1)
	(Missing)	7168 (27.7)

Stratified: all

all

Chronic hematologic disease	YES	701 (2.7)
	NO	16934 (65.4)
	Unknown	1060 (4.1)
	(Missing)	7191 (27.8)
AIDS/HIV	YES	81 (0.3)
	NO	17480 (67.5)
	Unknown	1147 (4.4)
	(Missing)	7178 (27.7)
Obesity	YES	1721 (6.6)
	NO	14652 (56.6)
	Unknown	2199 (8.5)
	(Missing)	7314 (28.3)
Diabetes with complications	YES	1327 (5.1)
	NO	16510 (63.8)
	Unknown	885 (3.4)
	(Missing)	7164 (27.7)
Diabetes without complications	YES	3699 (14.3)
	NO	14227 (55.0)
	Unknown	810 (3.1)
	(Missing)	7150 (27.6)
Rheumatologic disorder	YES	1719 (6.6)
	NO	15868 (61.3)
	Unknown	1076 (4.2)
	(Missing)	7223 (27.9)
Dementia	YES	2400 (9.3)
	NO	15351 (59.3)
	Unknown	955 (3.7)
	(Missing)	7180 (27.7)
Malnutrition	YES	403 (1.6)
	NO	16558 (64.0)
	Unknown	1656 (6.4)
	(Missing)	7269 (28.1)
smoking_mhyn_2levels	YES	876 (3.4)
	NO	13671 (52.8)
	(Missing)	11339 (43.8)