

Dynamic CO-CIN report to SAGE and NERVTAG

[OFFICIAL-SENSITIVE PROTECT]

Dynamic content updated: 2020-05-04 18:04:12.

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 04 May 2020, CO-CIN has recruited **29575 patients** with confirmed Coronavirus (Figure 1).

The CO-CIN dataset represents 15.8% (29575/186,599) of cases of confirmed Coronavirus cases in the UK, per the PHE daily reports (last updated 9am on 3 May).

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 879 had travelled abroad recently, and 5604 reported visiting or working in a hospital where COVID-19 cases are being managed.

The median age is 73 (range: 0-105), Male/Female 14454/9863.

The most common symptoms were cough_ceoccur_v2 (68%), fever_ceoccur_v2 (67%) and shortbreath_ceoccur_v2 (65%) (Figure 3A). 874/21818 (4%) of patients have reported no symptoms. Comorbidity can be seen in Figure 3B. The most common comorbidities were chrncard (30%), diabetes_mhyn (19%) and chronicpul_mhyn (17%). 12541/29575 (42%) of patients have reported no co morbidity. 113/1843 (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 - 368894 days).

The median length of hospital stay was 7 days (interquartile range: 4-13, n = 15349).

2022/15143 (13%) patients required high-flow oxygen after day 1 of treatment.

Currently 6117 patient(s) have died and 3517 required ICU. 9639 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).

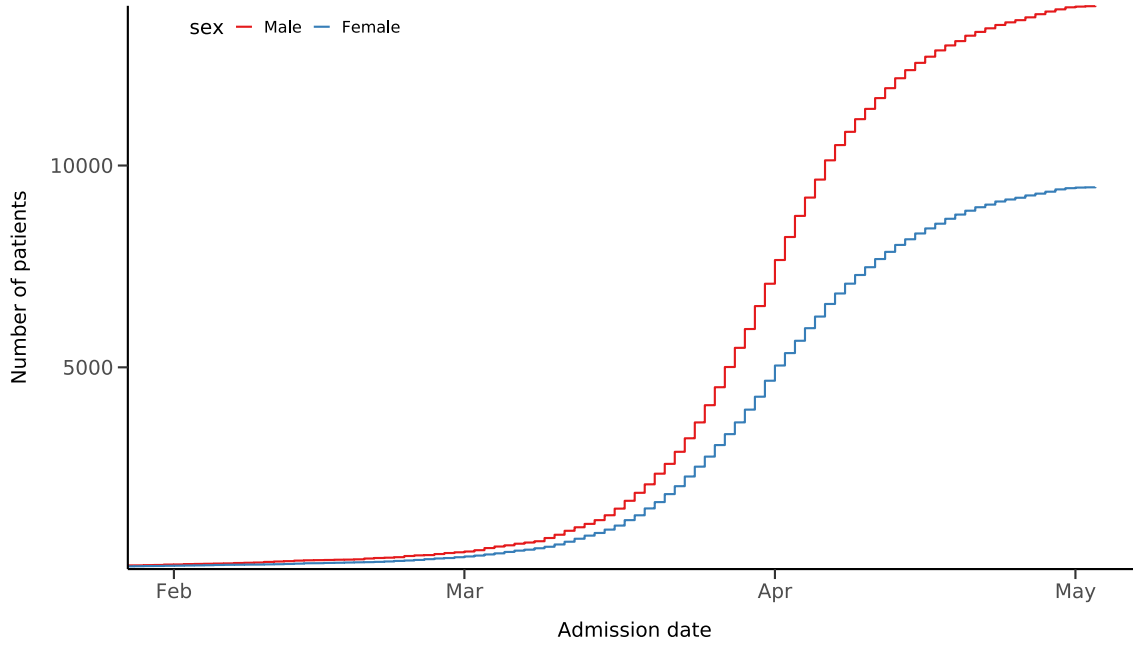
Analytics: Lisa Norman, Riinu Pius, Thomas Drake, Cameron Fairfield, Stephen Knight, Kenneth McLean, Katie Shaw.

Admission

Figure 1

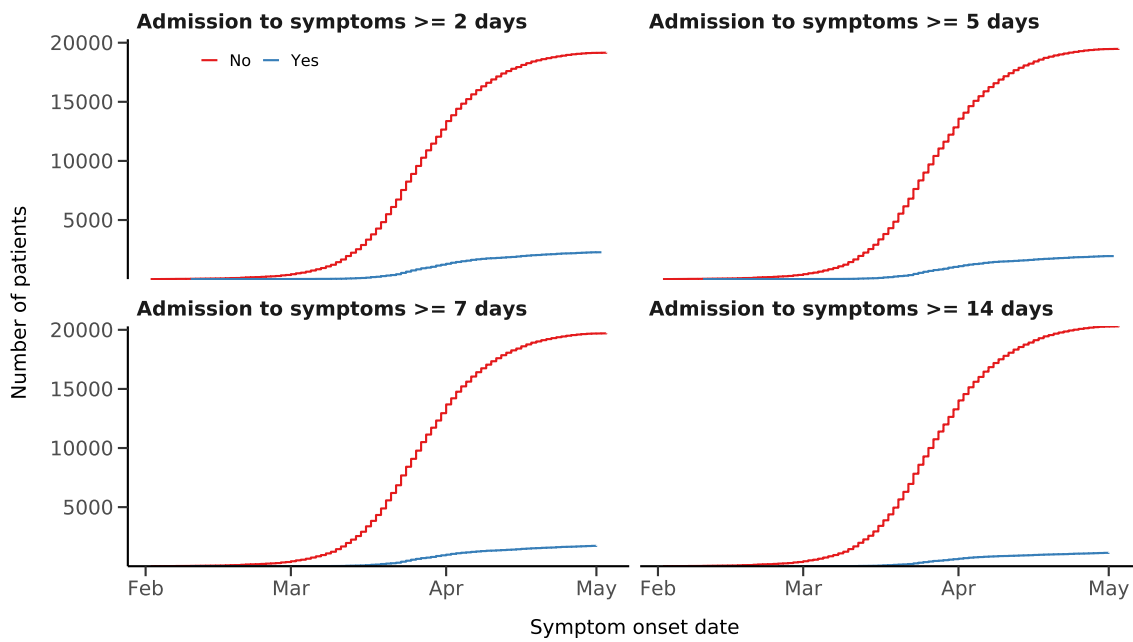
Hospital admission with COVID-19 by sex

Figure 1A

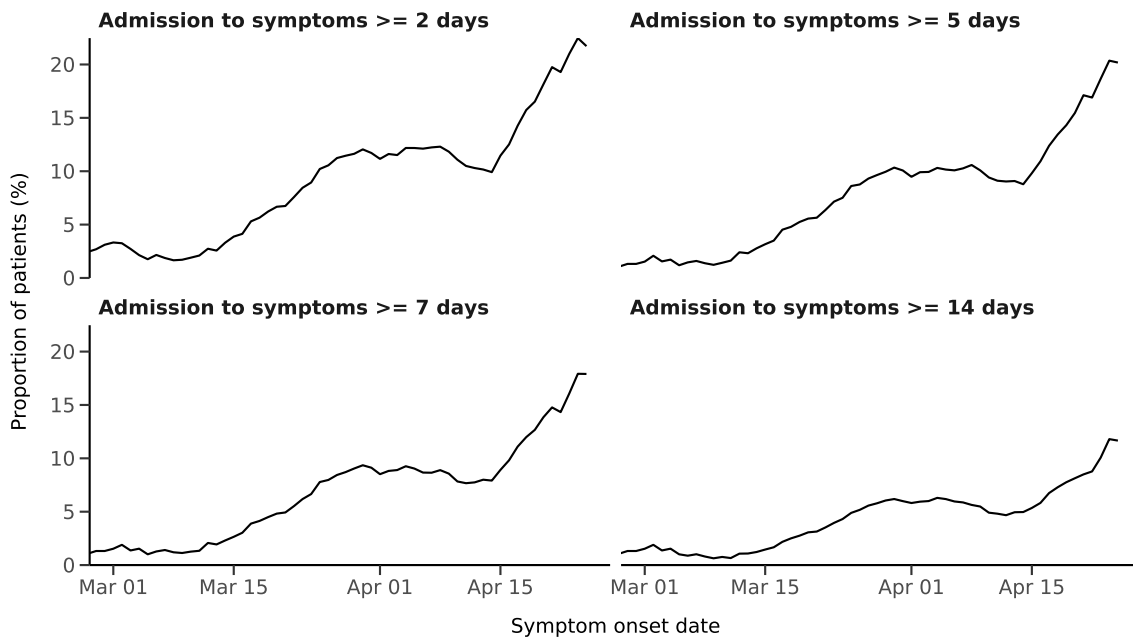


Number with symptom onset occurring after admission to hospital

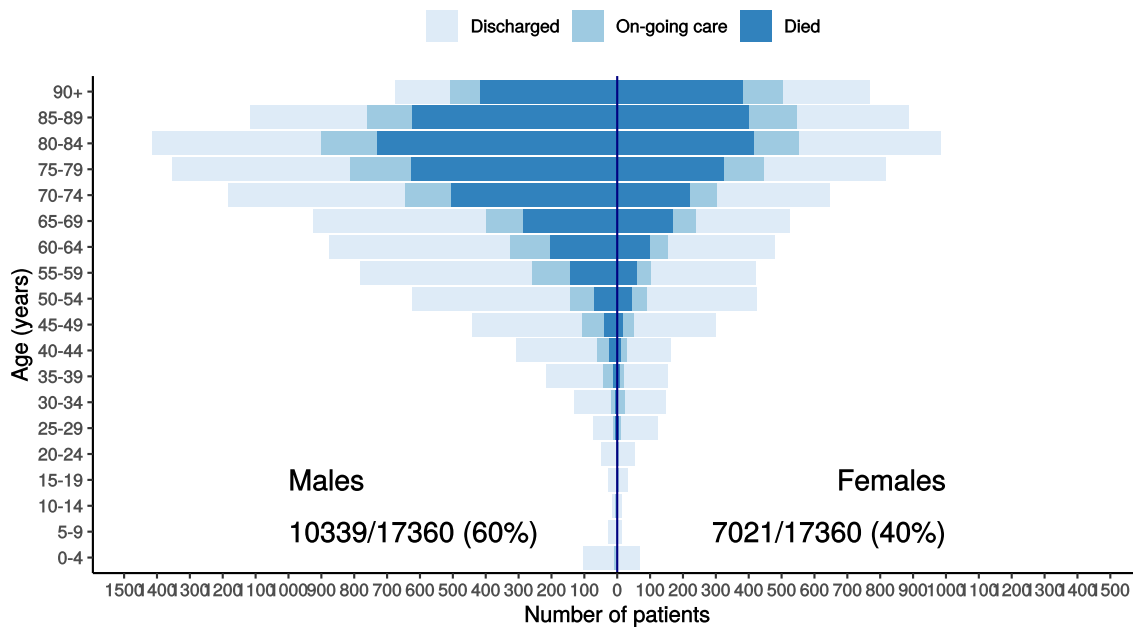
Figure 1B



Proportion with symptom onset occurring after hospital admission
 Figure 1C - 7-day rolling percentage. n = 21437

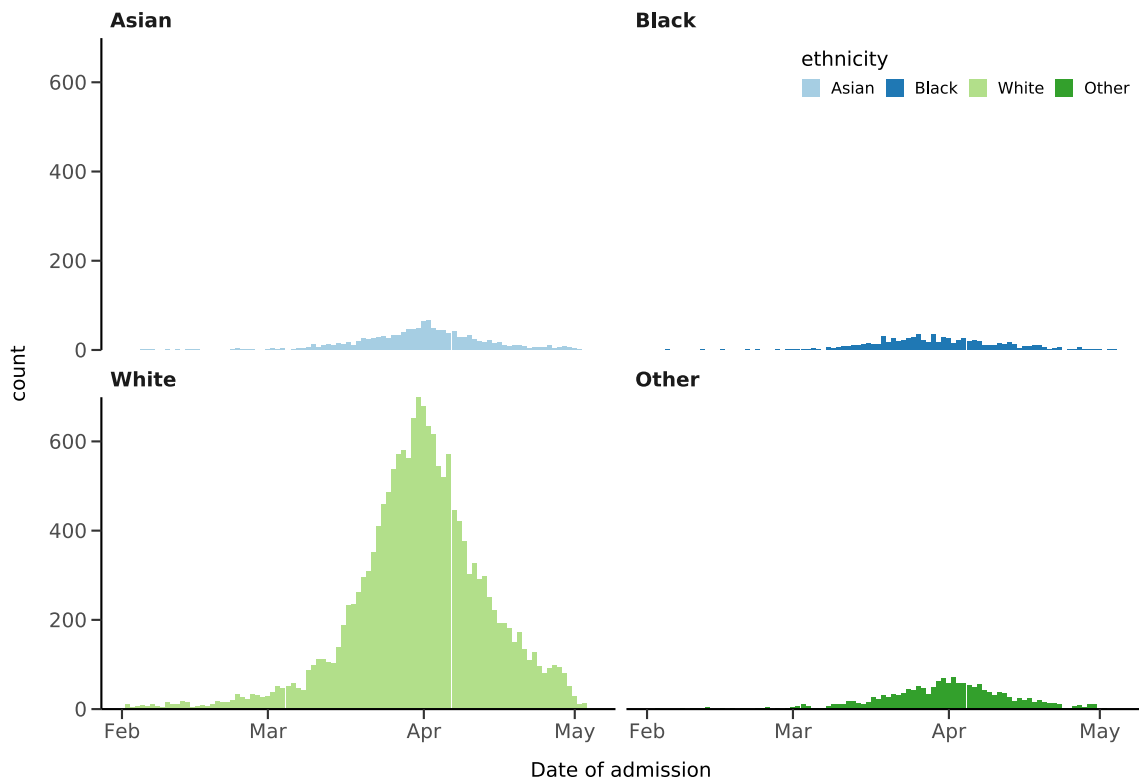


Patients with outcome stratified by age, and sex
 Figure 1D



Hospital admission with COVID-19 by ethnicity

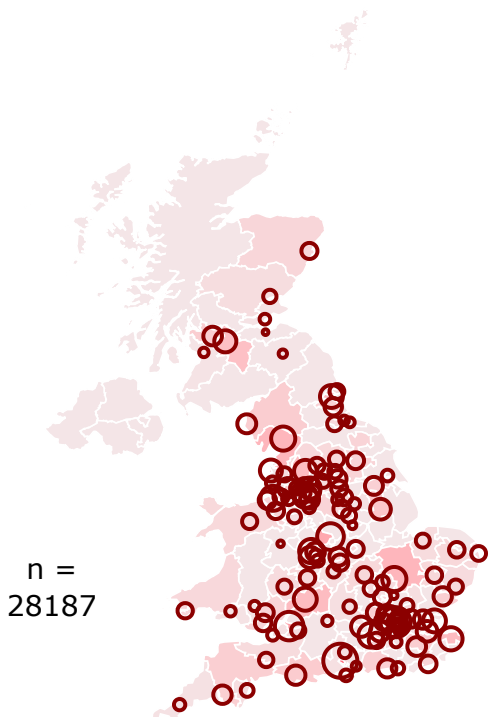
Figure 1E



Location by CCG / Healthboard

Figure 2

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

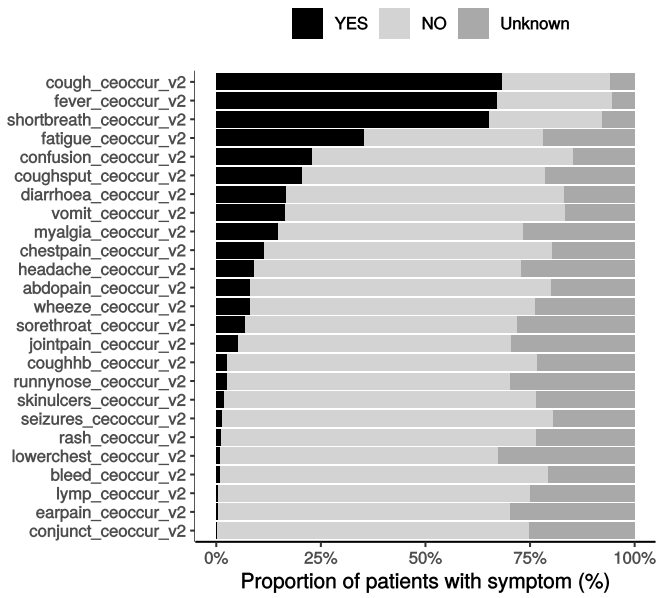


Symptoms and comorbidity

Figure 3A

Symptoms on presentation to hospital (% patients, n = 21620)

Figure 3A



Comorbidity (% patients, n = 21640)

Figure 3B

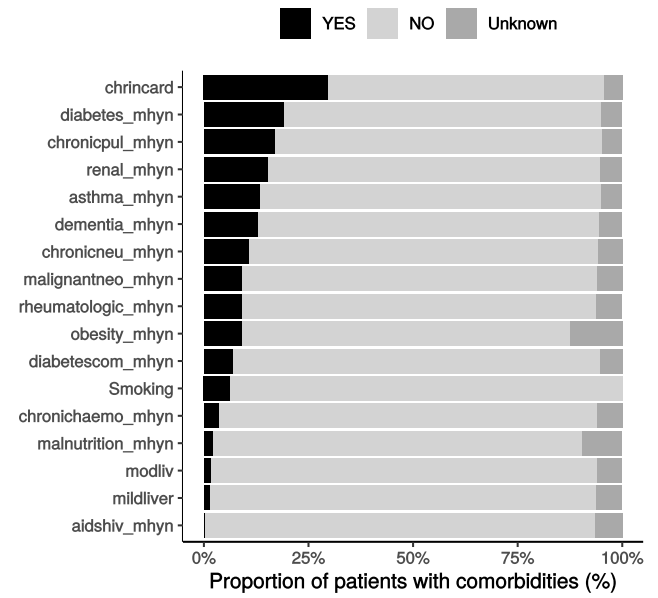
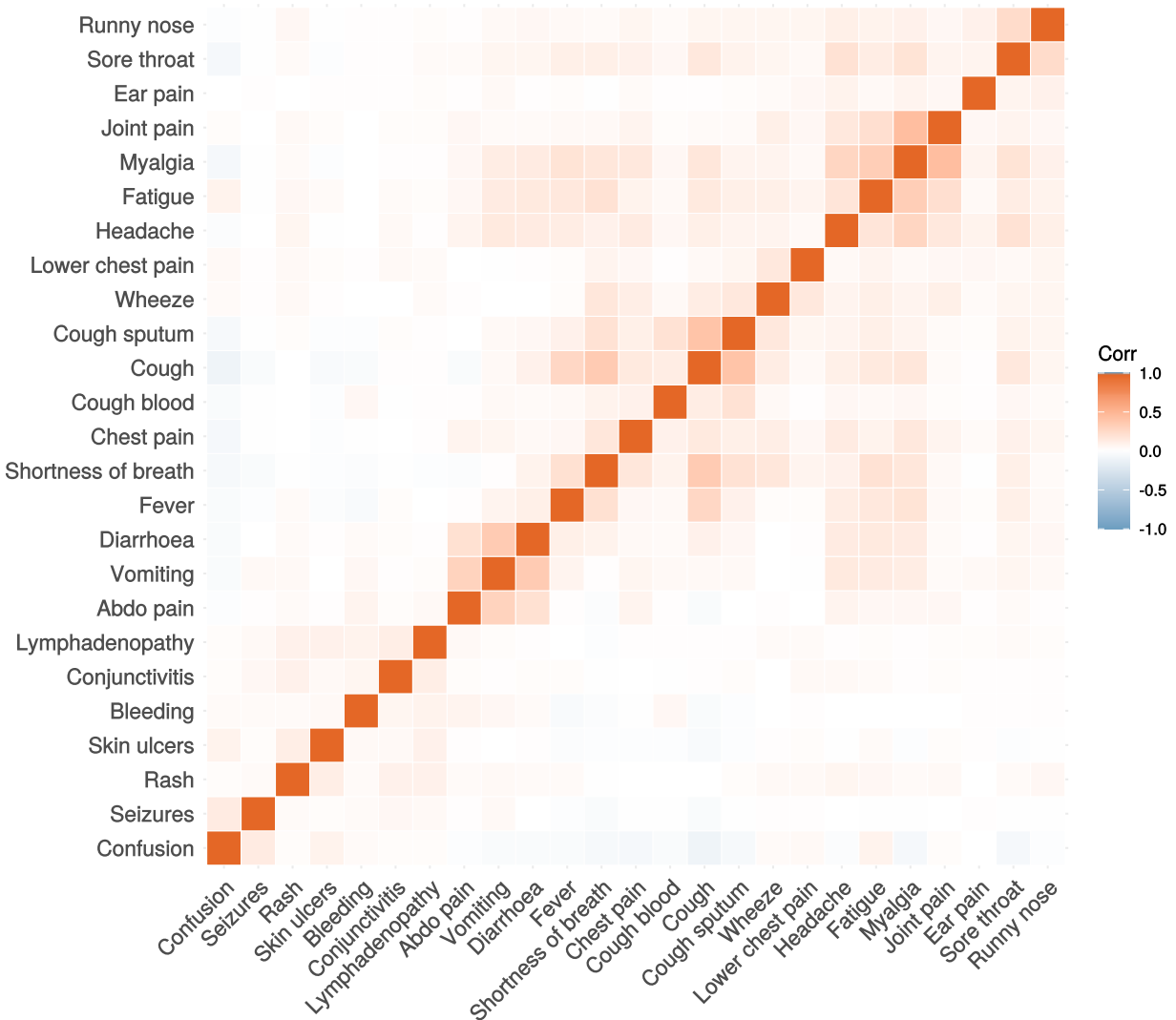


Figure 3C

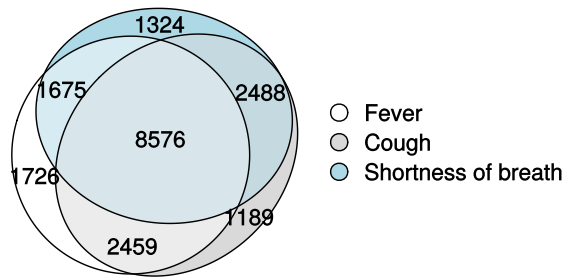
Correlation of symptoms in all pages. Note clusters, top right to bottom left, flu-like, coryzal, abdominal, respiratory, neurocutaneous.



Symptoms (diagnostic criteria)

Figure 4A

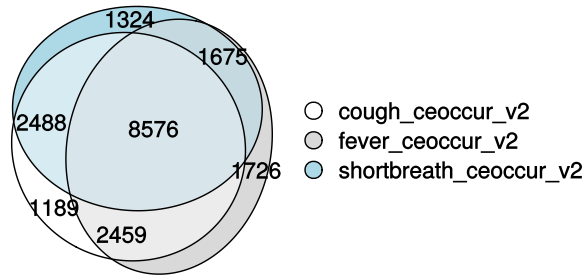
n = 21620



Symptoms (most common)

Figure 4B

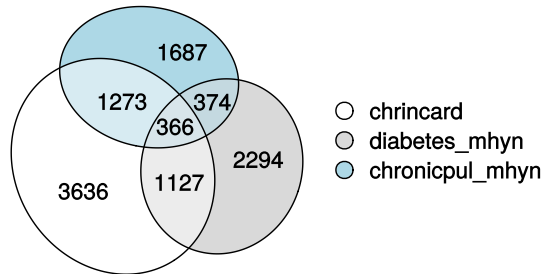
n = 21620



Comorbidity (most common)

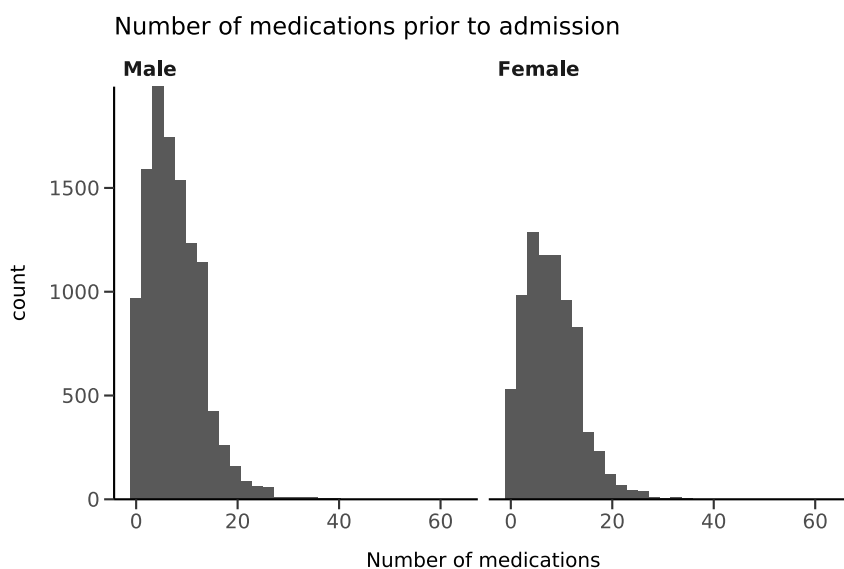
Figure 4C

n = 21640



Medication prior to illness

Figure 5

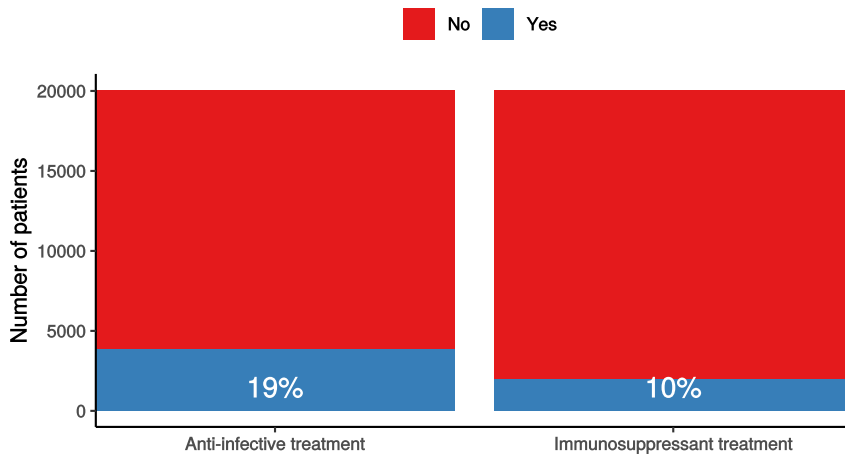


Preadmission treatment

Figure 6

Pre-admission treatment

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



Patient flow

Figure 7A - All patients

N = 22136

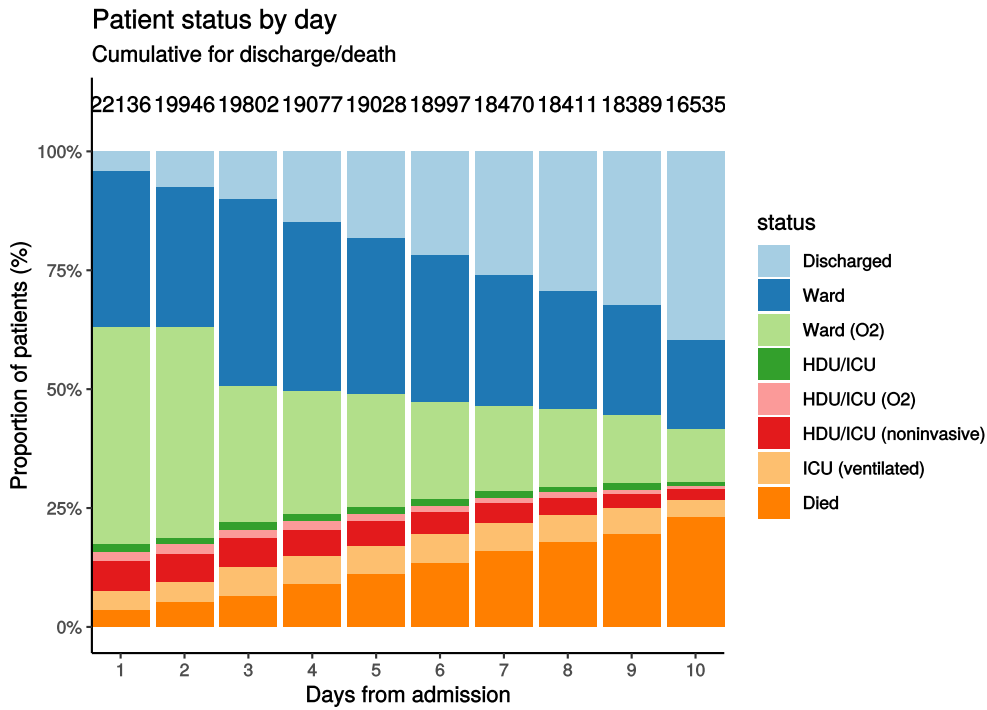
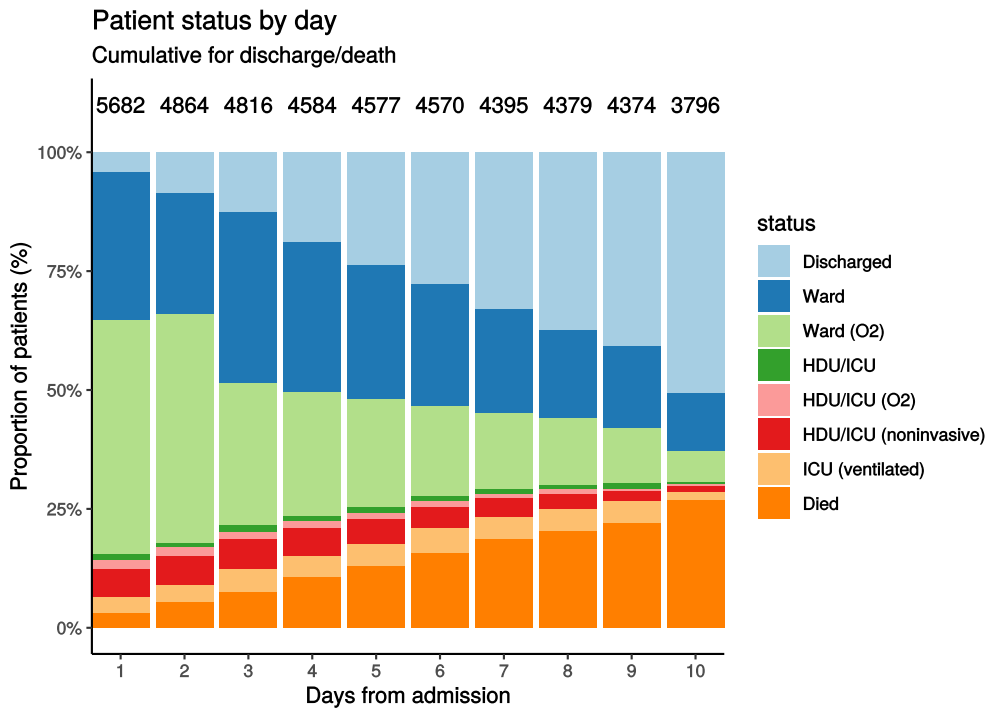


Figure 7B - Patients admitted ≥ 14 days and ≤ 28 days ago

N = 5682



Oxygen requirement

Figure 8A - All patients

N = 20214

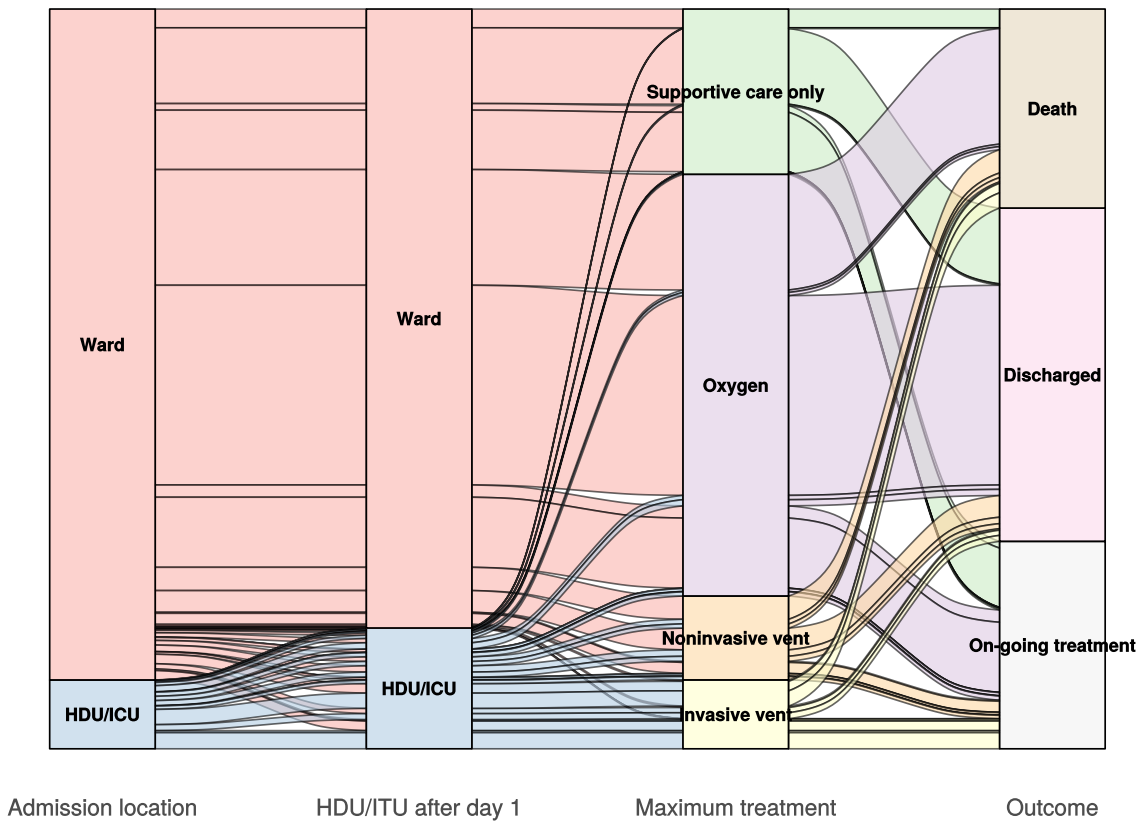
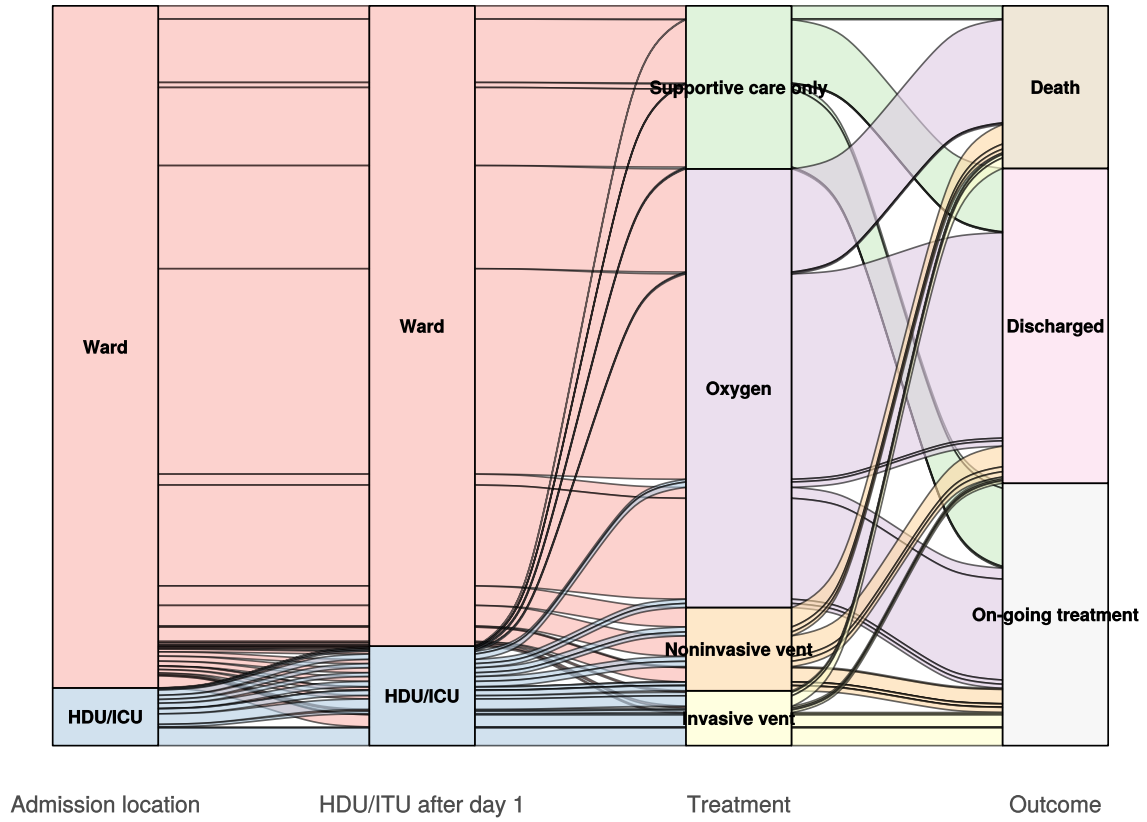


Figure 8B - Patients admitted ≥ 14 days and ≤ 28 days ago

N = 5233

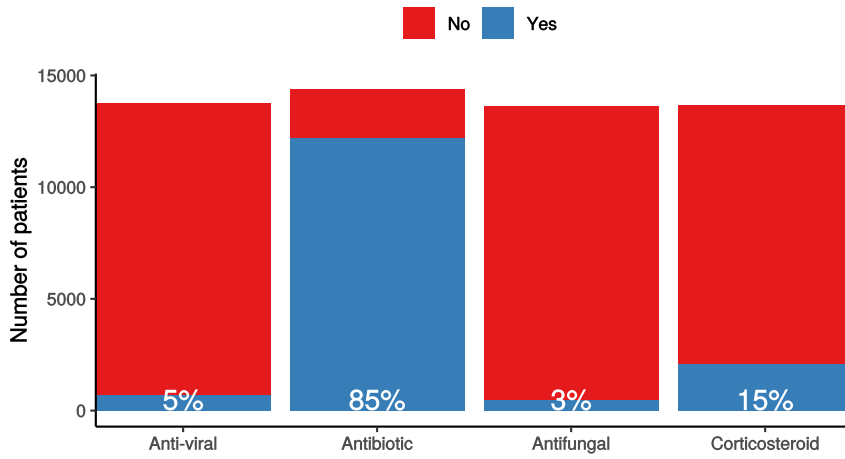


In-hospital medical treatment

Figure 9

In-hospital treatment

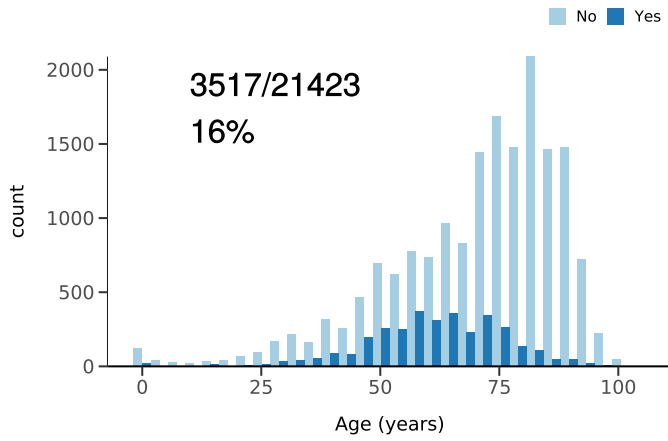
Anti-virals, antibiotics, corticosteroids, and anti-fungals for patients who have cc



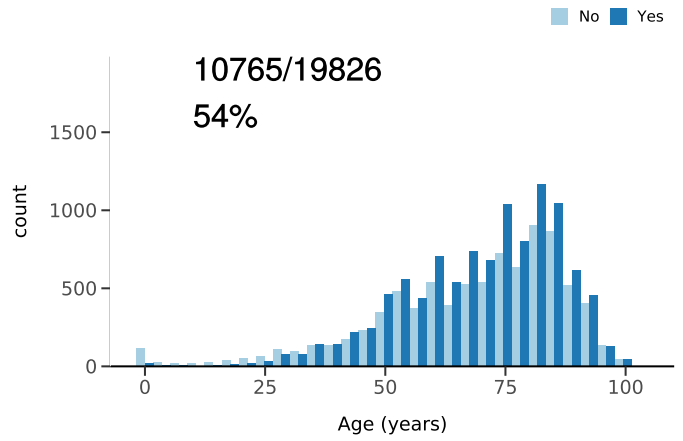
Treatment

Figure 10

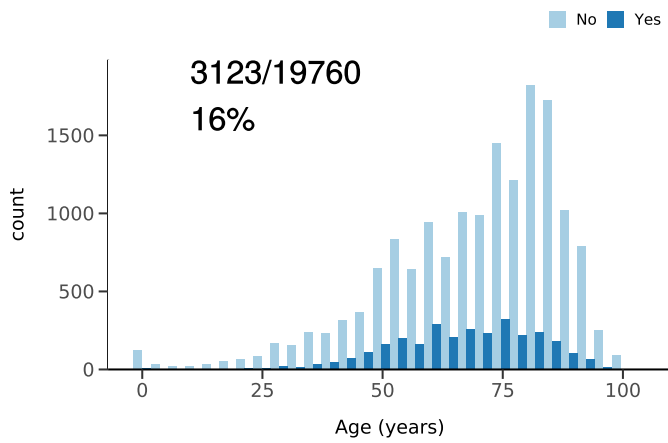
ICU/HDU admission
Figure 10A



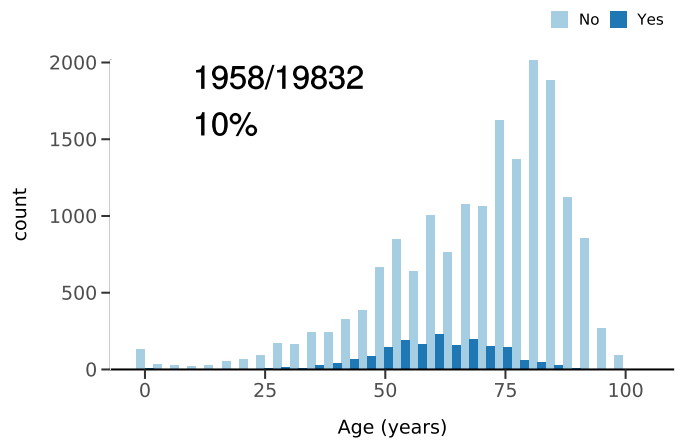
High flow oxygen
Figure 10B



Noninvasive ventilation
Figure 10C



Invasive ventilation
Figure 10D

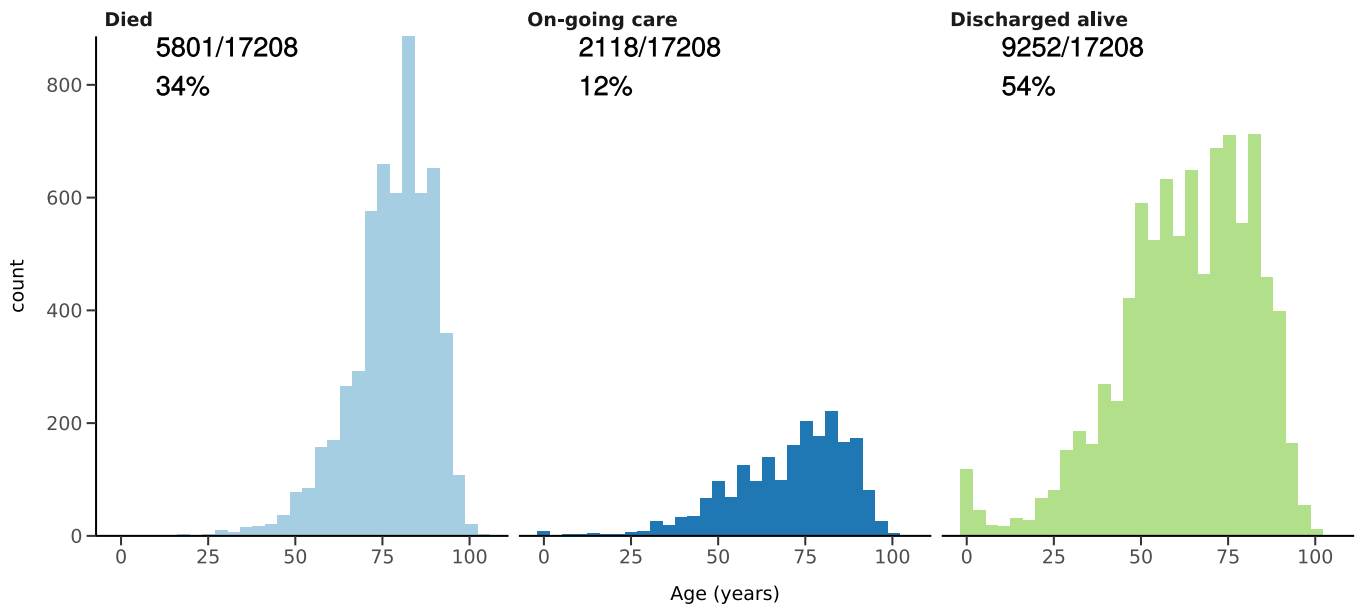


Status in patients admitted ≥ 14 days from today

Figure 11

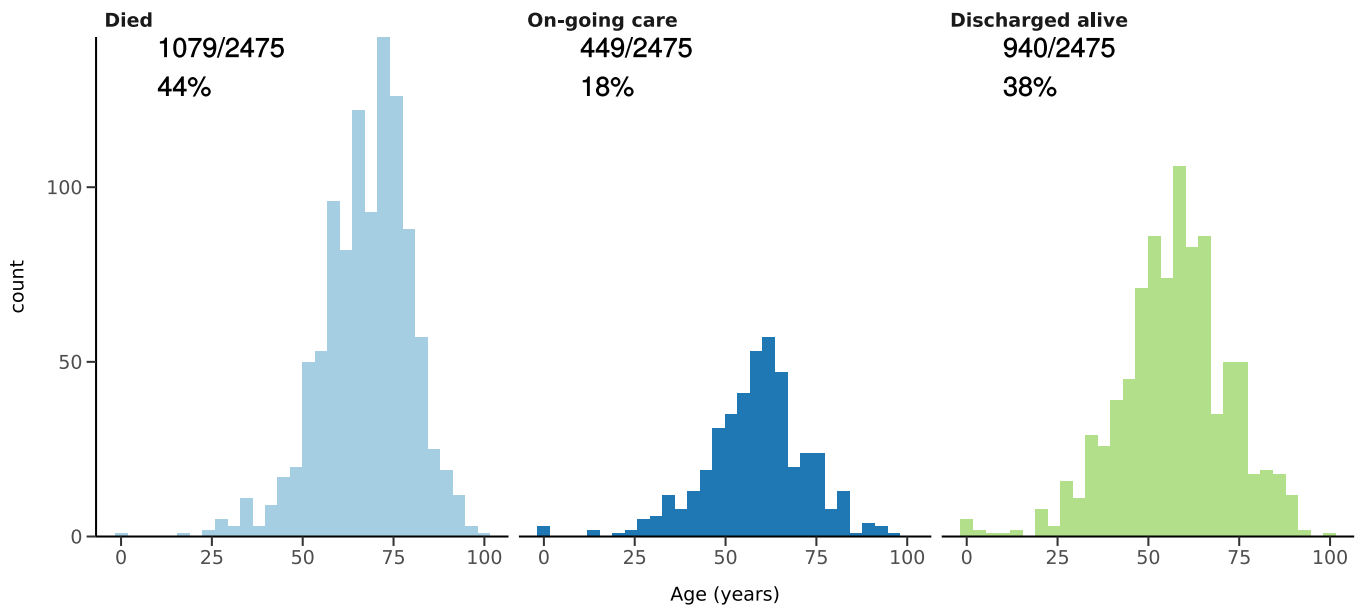
All: status in patients admitted ≥ 14 days ago

Figure 11A



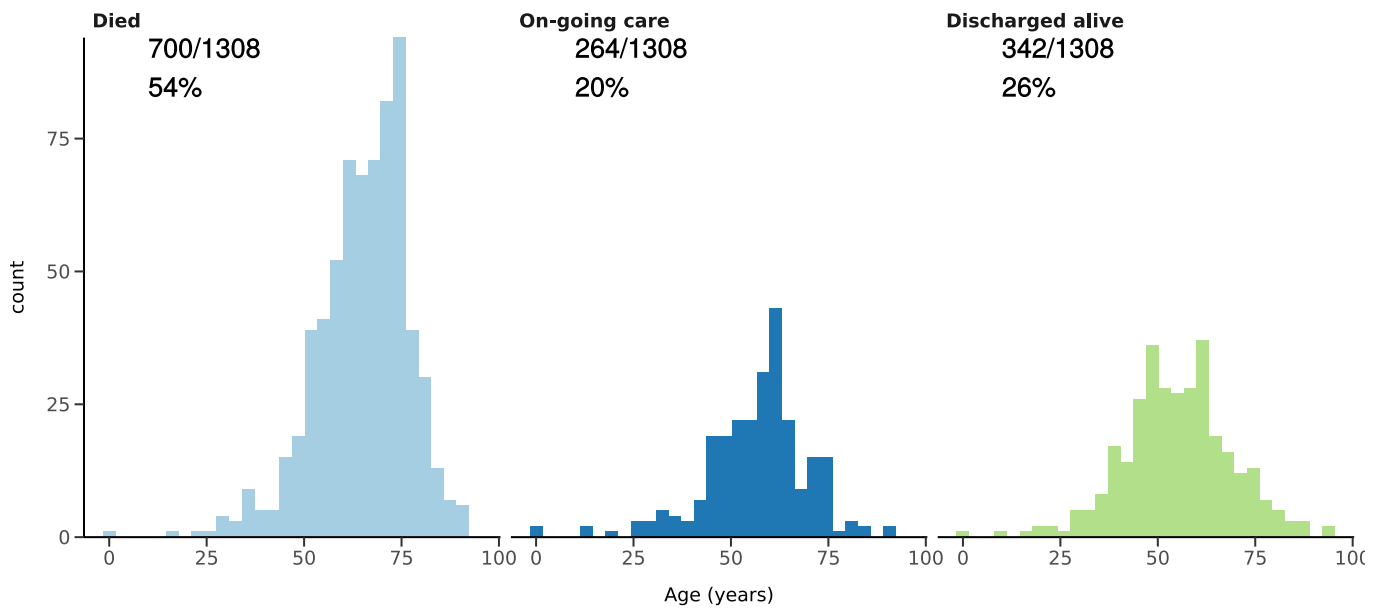
ICU/HDU admissions: status in patients admitted ≥ 14 days ago

Figure 11B



Invasive ventilation: status in patients admitted ≥ 14 days ago

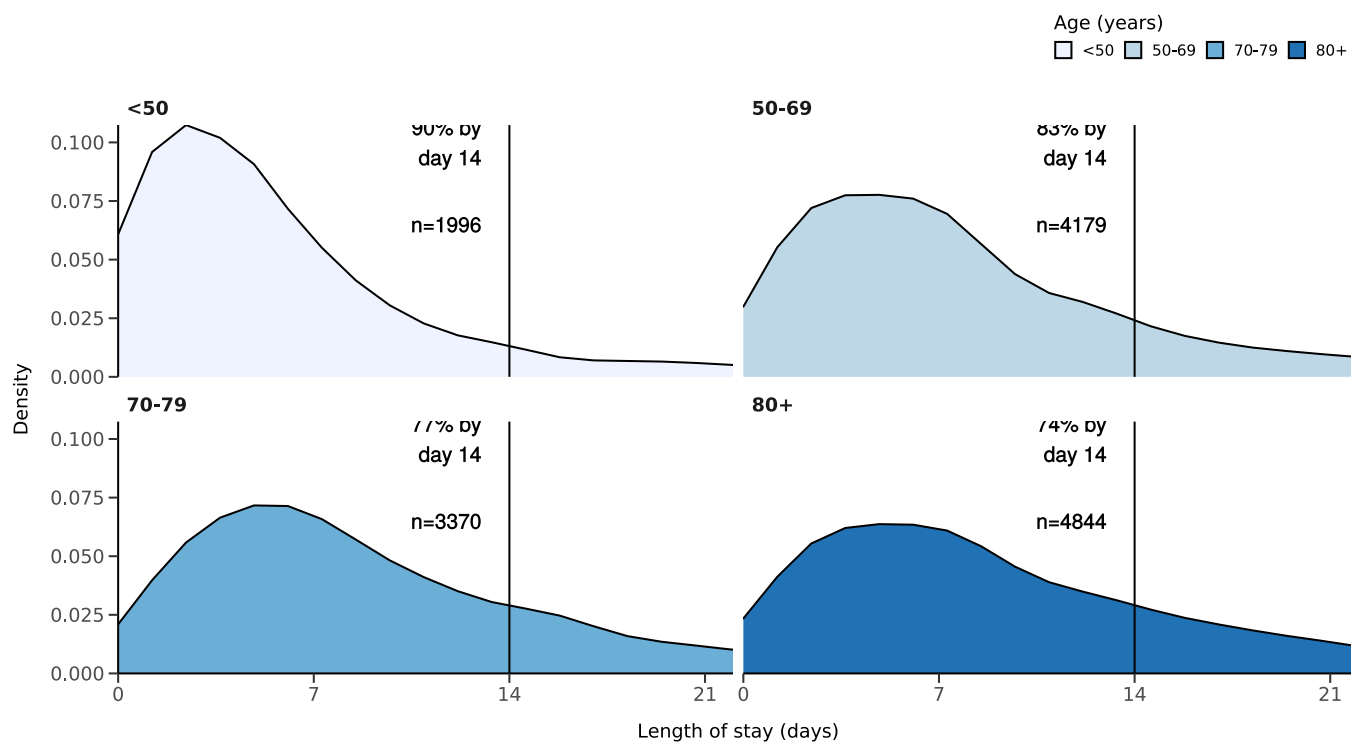
Figure 11c



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	2063 (94.0)	131 (6.0)	•	•	•
	50-69	3397 (76.7)	1030 (23.3)	4.77 (3.96-5.80, p<0.001)	4.37 (3.54-5.46, p<0.001)	
	70-79	1923 (54.3)	1618 (45.7)	13.25 (11.02-16.07, p<0.001)	10.84 (8.75-13.56, p<0.001)	
	80+	2293 (44.6)	2852 (55.4)	19.59 (16.35-23.67, p<0.001)	15.51 (12.52-19.41, p<0.001)	
Sex at Birth	Male	5717 (61.1)	3646 (38.9)	•	•	
	Female	4232 (66.5)	2131 (33.5)	0.79 (0.74-0.84, p<0.001)	0.72 (0.66-0.78, p<0.001)	
Chronic cardiac disease	NO	7024 (69.9)	3021 (30.1)	•	•	
	YES	2256 (50.5)	2212 (49.5)	2.28 (2.12-2.45, p<0.001)	1.26 (1.16-1.38, p<0.001)	
Chronic pulmonary disease	NO	7923 (66.7)	3959 (33.3)	•	•	
	YES	1321 (51.3)	1255 (48.7)	1.90 (1.74-2.07, p<0.001)	1.33 (1.20-1.48, p<0.001)	
Chronic neurological disorder	NO	8259 (65.3)	4380 (34.7)	•	•	
	YES	881 (53.6)	762 (46.4)	1.63 (1.47-1.81, p<0.001)	1.28 (1.13-1.46, p<0.001)	
Chronic hematologic disease	NO	8808 (64.7)	4811 (35.3)	•	•	
	YES	308 (50.8)	298 (49.2)	1.77 (1.50-2.09, p<0.001)	1.33 (1.09-1.63, p=0.005)	
Chronic kidney disease	NO	8074 (67.1)	3961 (32.9)	•	•	

Dependent: death		No	Yes	OR (univariable)	OR (multivariable)
Dementia	YES	1118 (47.9)	1215 (52.1)	2.22 (2.03-2.42, p<0.001)	1.38 (1.24-1.54, p<0.001)
	NO	8363 (67.4)	4043 (32.6)	•	•
Obesity	YES	815 (42.4)	1109 (57.6)	2.81 (2.55-3.10, p<0.001)	1.52 (1.35-1.72, p<0.001)
	NO	7569 (64.3)	4205 (35.7)	•	•
Malignancy	YES	903 (65.7)	472 (34.3)	0.94 (0.84-1.06, p=0.309)	1.56 (1.36-1.79, p<0.001)
	NO	8398 (65.5)	4432 (34.5)	•	•
	YES	732 (51.8)	680 (48.2)	1.76 (1.58-1.97, p<0.001)	1.22 (1.07-1.40, p=0.003)

Number in dataframe = 22099, Number in model = 12250, Missing = 9849, AIC = 13692, C-statistic = 0.742, H&L = Chi-sq(8) 54.20 (p<0.001)

Figure 13 - Adjusted odds ratio plot

Death

Age on admission (years)	<50	-
	50-69	4.37 (3.54-5.46, p<0.001)
	70-79	10.84 (8.75-13.56, p<0.001)
	80+	15.51 (12.52-19.41, p<0.001)
Sex at Birth	Female	0.72 (0.66-0.78, p<0.001)
Chronic cardiac disease	YES	1.26 (1.16-1.38, p<0.001)
Chronic pulmonary disease	YES	1.33 (1.20-1.48, p<0.001)
Chronic neurological disorder	YES	1.28 (1.13-1.46, p<0.001)
Chronic hematologic disease	YES	1.33 (1.09-1.63, p=0.005)
Chronic kidney disease	YES	1.38 (1.24-1.54, p<0.001)
Dementia	YES	1.52 (1.35-1.72, p<0.001)
Obesity	YES	1.56 (1.36-1.79, p<0.001)
Malignancy	YES	1.22 (1.07-1.40, p=0.003)

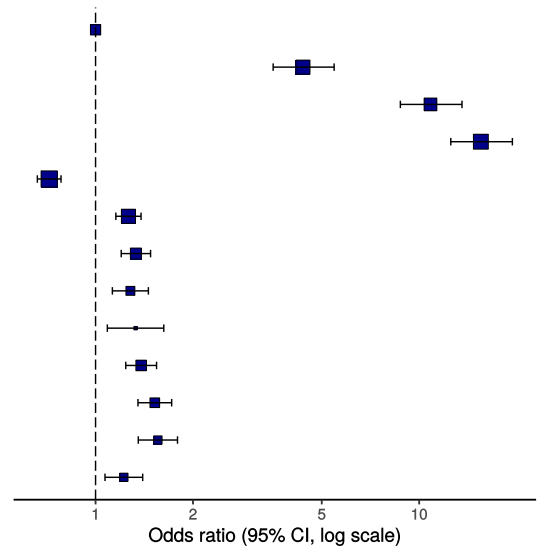
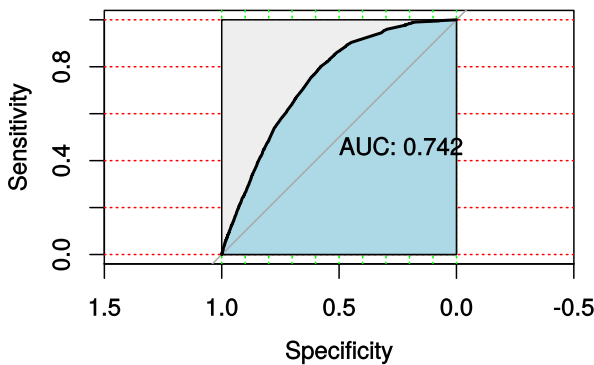


Figure 14 - ROC

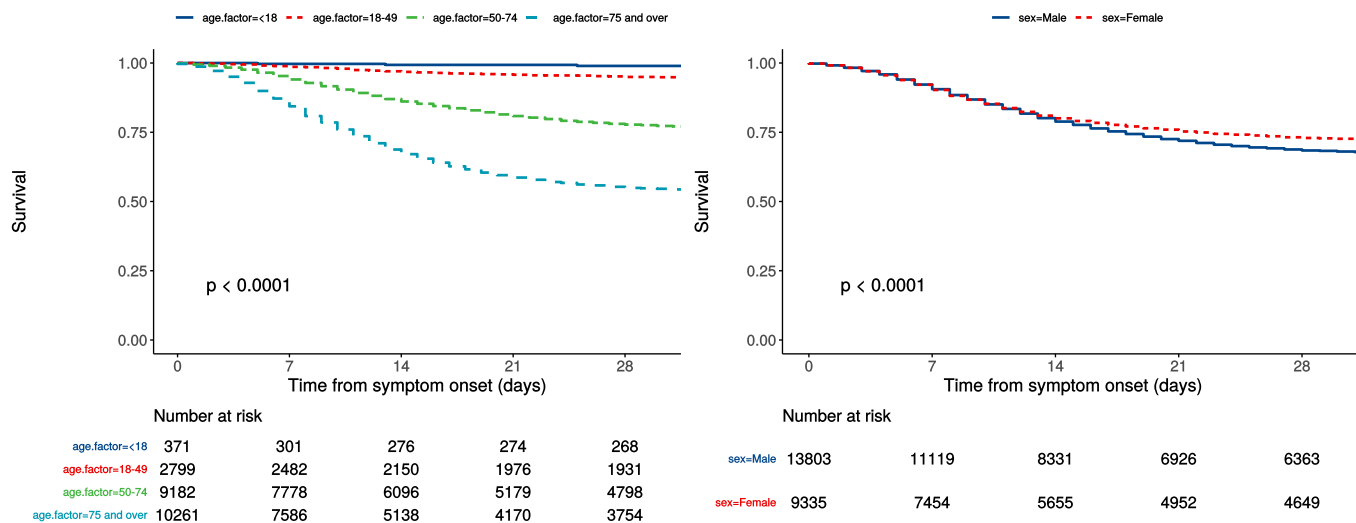


Survival models

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

Figure 15

P-value is log-rank test.



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	3298 (14.2)	•	•
	50-69	6985 (30.2)	4.21 (3.51-5.05, p<0.001)	3.99 (3.16-5.03, p<0.001)
	70-79	5237 (22.6)	10.05 (8.42-12.00, p<0.001)	9.32 (7.41-11.73, p<0.001)
	80+	7633 (33.0)	14.38 (12.08-17.12, p<0.001)	12.31 (9.79-15.47, p<0.001)
Sex at Birth	Male	14115 (59.6)	•	•
	Female	9570 (40.4)	0.85 (0.80-0.89, p<0.001)	0.82 (0.76-0.87, p<0.001)
qSOFA score on admission	0	6618 (39.5)	•	•
	1	8021 (47.9)	1.53 (1.43-1.64, p<0.001)	1.62 (1.50-1.75, p<0.001)
	2	1897 (11.3)	3.05 (2.80-3.33, p<0.001)	2.83 (2.56-3.12, p<0.001)
	3	207 (1.2)	4.80 (3.99-5.77, p<0.001)	3.86 (3.13-4.76, p<0.001)
Symptomatic at presentation	No symptoms	462 (2.1)	•	•
	Symptoms	21585 (97.9)	1.08 (0.89-1.30, p=0.458)	•
Chronic cardiac disease	NO	14405 (69.0)	•	•
	YES	6480 (31.0)	1.93 (1.83-2.04, p<0.001)	1.23 (1.15-1.32, p<0.001)
Chronic kidney disease	NO	17360 (84.0)	•	•
	YES	3295 (16.0)	1.89 (1.78-2.02, p<0.001)	1.26 (1.17-1.37, p<0.001)
Moderate/severe liver disease	NO	20136 (98.3)	•	•
	YES	353 (1.7)	1.47 (1.22-1.75, p<0.001)	1.64 (1.30-2.06, p<0.001)
Chronic neurological disorder	NO	18059 (88.0)	•	•
	YES	2471 (12.0)	1.47 (1.36-1.58, p<0.001)	•

Dependent: Surv(time, status)		all	HR (univariable)	HR (multivariable)
Malignancy	NO	18522 (90.4)	•	•
	YES	1971 (9.6)	1.57 (1.45-1.70, p<0.001)	1.17 (1.06-1.29, p=0.003)
Chronic hematologic disease	NO	19646 (96.1)	•	•
	YES	806 (3.9)	1.57 (1.40-1.77, p<0.001)	•
Obesity	NO	16954 (89.4)	•	•
	YES	2005 (10.6)	0.88 (0.80-0.97, p=0.009)	1.31 (1.17-1.46, p<0.001)
Diabetes without complications	NO	16564 (80.0)	•	•
	YES	4146 (20.0)	1.23 (1.15-1.31, p<0.001)	•
Rheumatologic disorder	NO	18370 (90.1)	•	•
	YES	2026 (9.9)	1.19 (1.09-1.29, p<0.001)	•
Dementia	NO	17743 (86.2)	•	•
	YES	2843 (13.8)	2.32 (2.17-2.48, p<0.001)	1.25 (1.15-1.36, p<0.001)
Malnutrition	NO	19188 (97.7)	•	•
	YES	455 (2.3)	1.74 (1.49-2.02, p<0.001)	•
smoking_mhyn_2levels	NO	15629 (93.7)	•	•
	YES	1045 (6.3)	1.09 (0.97-1.24, p=0.150)	•

Number in dataframe = 23980, Number in model = 13680, Missing = 10300, Number of events = 3607, Concordance = 0.737 (SE = 0.004), R-squared = 0.165 (Max possible = 0.992), Likelihood ratio test = 2469.122 (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	3.99 (3.16-5.03, p<0.001)
	70-79	9.32 (7.41-11.73, p<0.001)
	80+	12.31 (9.79-15.47, p<0.001)
Sex at Birth	Female	0.82 (0.76-0.87, p<0.001)
qSOFA score on admission	0	-
	1	1.62 (1.50-1.75, p<0.001)
	2	2.83 (2.56-3.12, p<0.001)
	3	3.86 (3.13-4.76, p<0.001)
Chronic cardiac disease	YES	1.23 (1.15-1.32, p<0.001)
Chronic kidney disease	YES	1.26 (1.17-1.37, p<0.001)
Moderate/severe liver disease	YES	1.64 (1.30-2.06, p<0.001)
Malignancy	YES	1.17 (1.06-1.29, p=0.003)
Obesity	YES	1.31 (1.17-1.46, p<0.001)
Dementia	YES	1.25 (1.15-1.36, p<0.001)

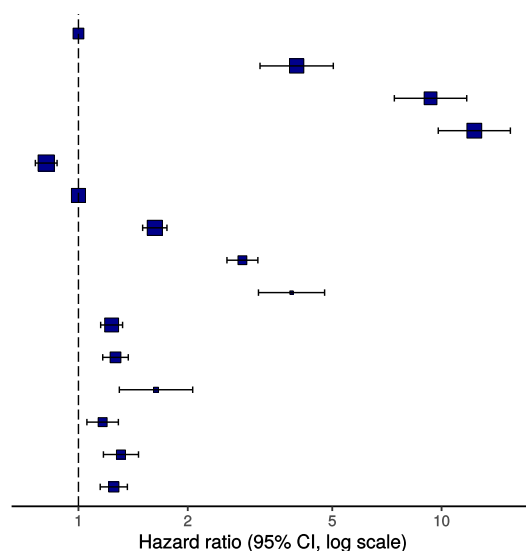
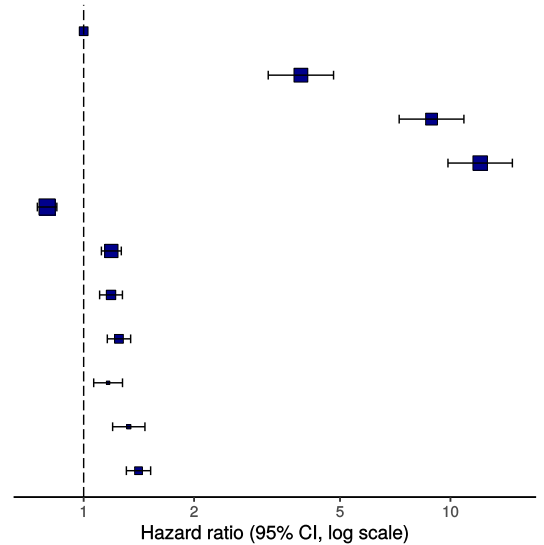


Figure 16b - Multivariable Cox proportional hazards model (age, sex, comorbidities only)

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

Age on admission (years)	<50	-
	50-69	3.91 (3.19-4.80, p<0.001)
	70-79	8.88 (7.25-10.88, p<0.001)
	80+	12.05 (9.85-14.75, p<0.001)
Sex at Birth	Female	0.79 (0.75-0.85, p<0.001)
Chronic cardiac disease	YES	1.19 (1.12-1.27, p<0.001)
Chronic pulmonary disease	YES	1.19 (1.11-1.28, p<0.001)
Chronic kidney disease	YES	1.25 (1.16-1.34, p<0.001)
Malignancy	YES	1.17 (1.07-1.28, p=0.001)
Obesity	YES	1.33 (1.20-1.47, p<0.001)
Dementia	YES	1.41 (1.31-1.52, p<0.001)



ROC = 0.7361762

Figure 17 - Predictions calibration plot

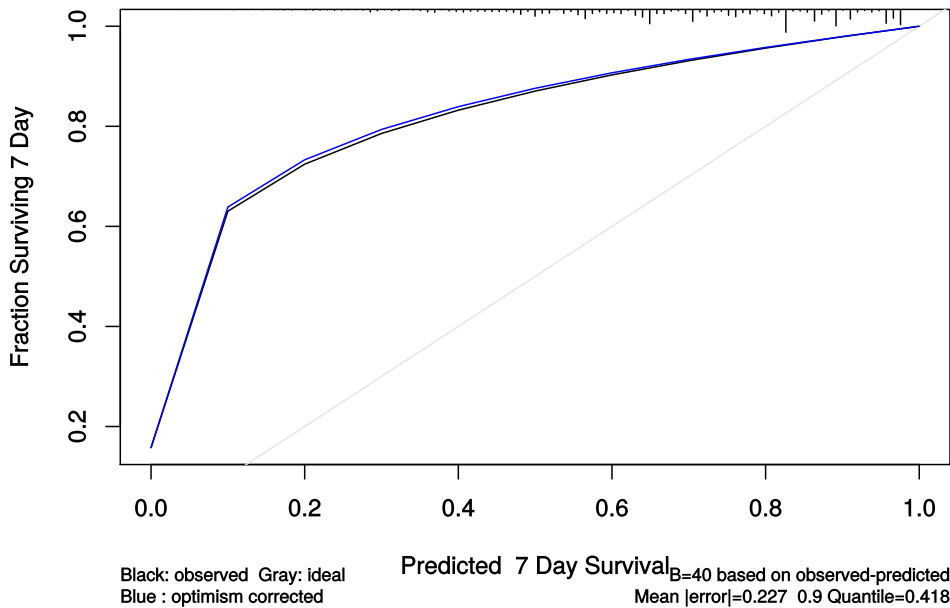
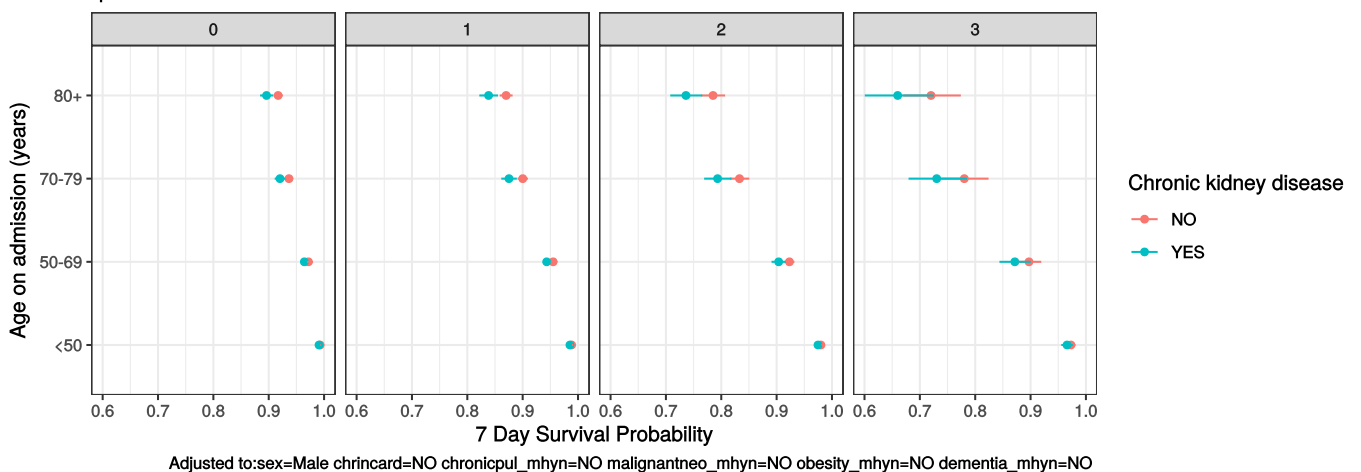


Figure 18 - Prognostic model predictions

Again, for demonstration of methods.

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



Adjusted to:sex=Male chrincard=NO chronicpul_mhyn=NO malignantheo_mhyn=NO obesity_mhyn=NO dementia_mhyn=NO

Figure 19 - Death by severity (NEWS) on admission

Number of deaths by NEWS score at admission

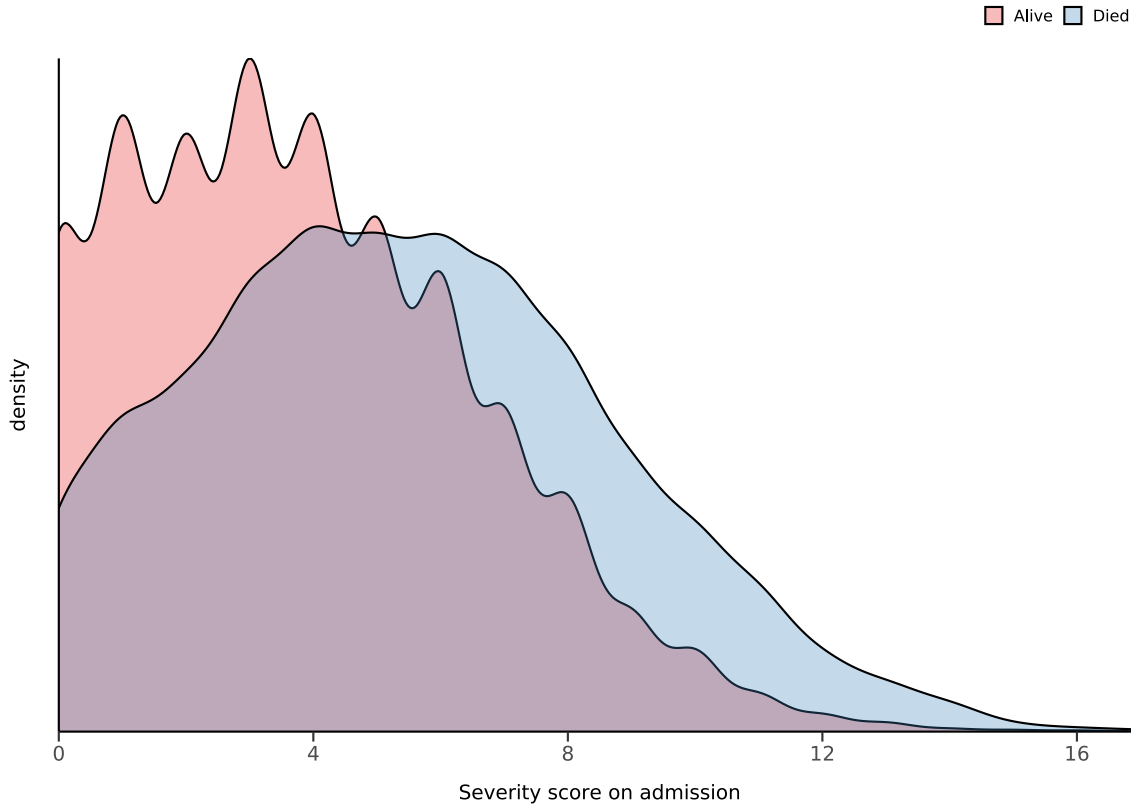


Figure 20 - Death by severity (NEWS) on admission stratified by age

Number of deaths by NEWS score at admission
Stratified by age

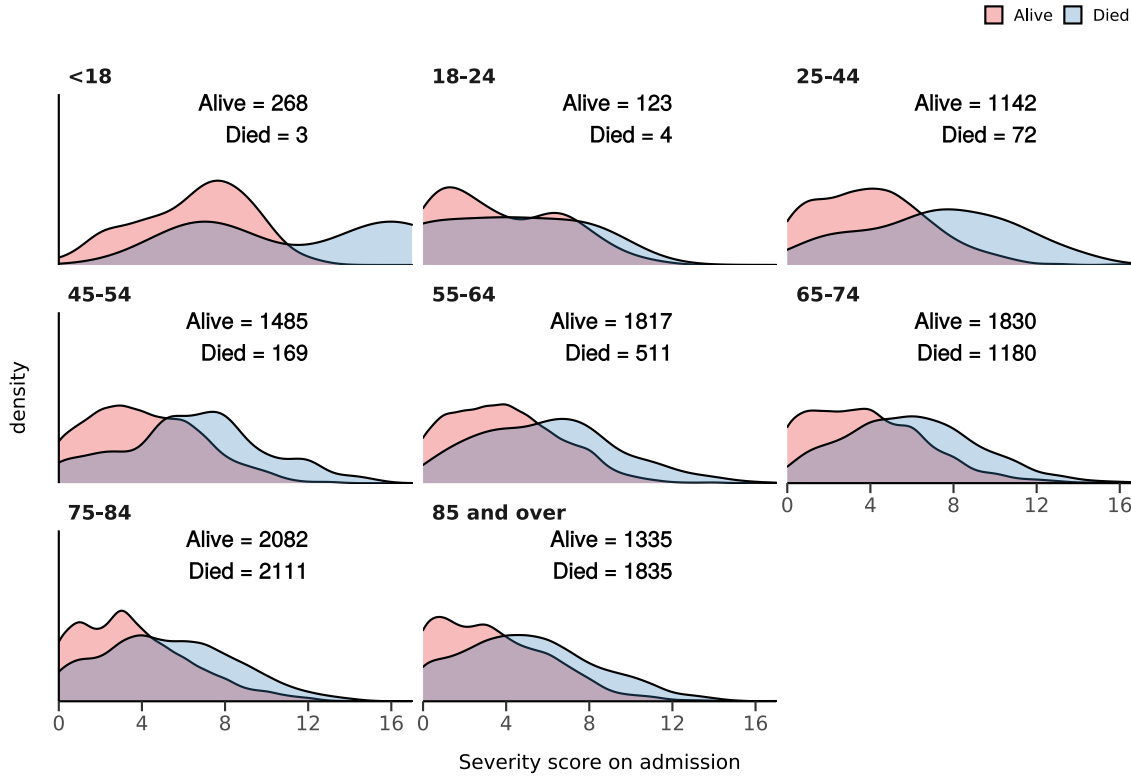
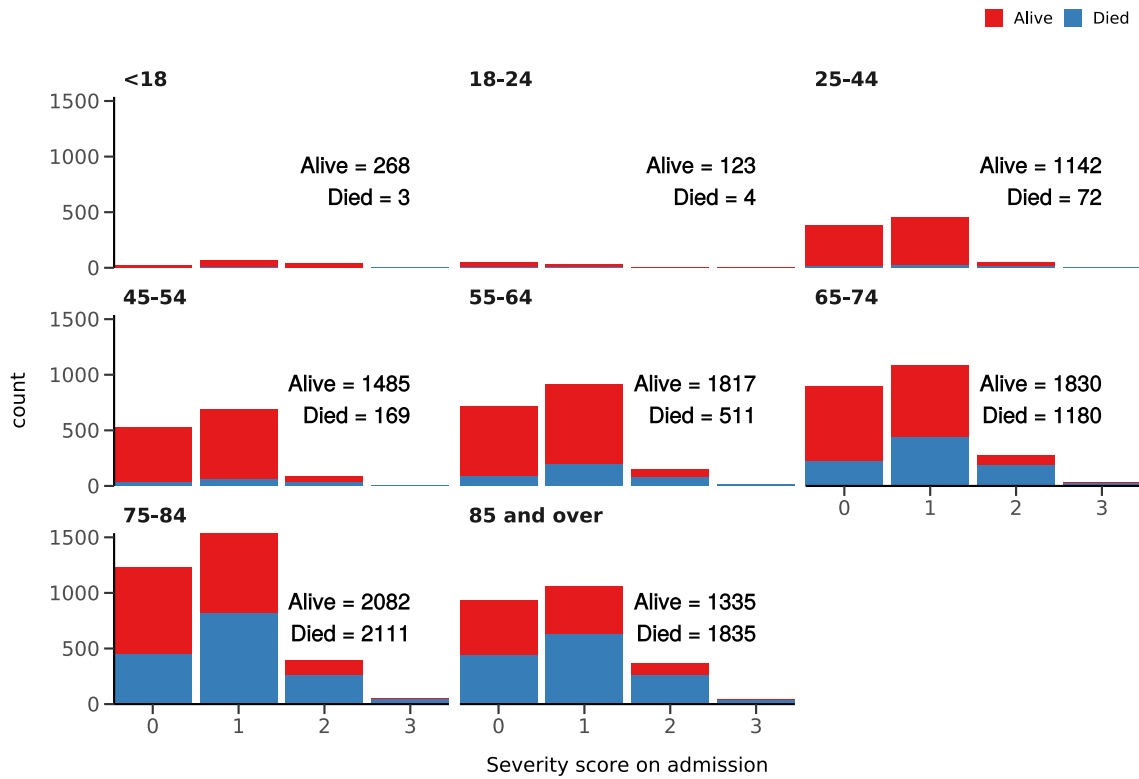


Figure 21 - Death by severity (qSOFA) on admission stratified by age

Number of deaths by qSOFA score at admission
Stratified by age



Healthcare workers

Healthcare worker		NO	YES	p
Total N (%)		20016 (94.9)	1074 (5.1)	
NEWS score on admission	Median (IQR)	4.0 (4.0)	4.0 (4.0)	0.594
Death	No	8392 (60.9)	663 (93.6)	<0.001
	Yes	5396 (39.1)	45 (6.4)	

Admission (detail)

Table 1

label	levels	all
Total N (%)		29575 (100.0)
age	Mean (SD)	68.8 (18.2)
sex	Male	14454 (48.9)
	Female	9863 (33.3)
	Not specified	47 (0.2)
	(Missing)	5211 (17.6)
healthwork_eterm	YES	1074 (3.6)
	NO	20016 (67.7)
	N/A	2416 (8.2)
	(Missing)	6069 (20.5)

label	levels	all
labwork_erterm	YES	66 (0.2)
	NO	19378 (65.5)
	N/A	2296 (7.8)
	(Missing)	7835 (26.5)
Onset to admission (days)	Mean (SD)	23.8 (2558.6)
hooccur	Yes-facility is a study site	386 (1.3)
	Yes-facility is not a study site	1281 (4.3)
	No	20360 (68.8)
	N/A	633 (2.1)
	(Missing)	6915 (23.4)
travel_erterm	Yes	725 (2.5)
	No	16611 (56.2)
	N/A	3095 (10.5)
	(Missing)	9144 (30.9)
supper_trcntry	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	18 (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	27 (0.1)
	Czechia	2 (0.0)
	Dominican Republic	3 (0.0)
	Egypt	7 (0.0)
France	32 (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	9 (0.0)
	Indonesia	1 (0.0)
	Iran	6 (0.0)
	Ireland	5 (0.0)
	Italy	87 (0.3)
	Japan	5 (0.0)
	Kenya	1 (0.0)
	Madagascar	1 (0.0)
	Malaysia	4 (0.0)
	Maldives	1 (0.0)
	Mexico	4 (0.0)
	Morocco	3 (0.0)
	Nepal	2 (0.0)
	Netherlands	9 (0.0)
	New Zealand	2 (0.0)
	Nigeria	2 (0.0)
	Norway	2 (0.0)
	Pakistan	9 (0.0)
	Philippines	4 (0.0)
	Poland	3 (0.0)
	Portugal	19 (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	171 (0.6)
	Swaziland	1 (0.0)

label	levels	all
	Switzerland	8 (0.0)
	Thailand	8 (0.0)
	Turkey	6 (0.0)
	United Arab Emirates	9 (0.0)
	United Kingdom	106 (0.4)
	Yemen	1 (0.0)
	Zimbabwe	1 (0.0)
	(Missing)	28914 (97.8)
supper_trcntry_2	Algeria	1 (0.0)
	Antigua and Barbuda	1 (0.0)
	Aruba	1 (0.0)
	Australia	3 (0.0)
	Austria	4 (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	2 (0.0)
	Qatar	1 (0.0)
	South Africa	1 (0.0)
	Spain	19 (0.1)
	Switzerland	1 (0.0)
	Thailand	1 (0.0)
	Turkey	4 (0.0)
	Vietnam	1 (0.0)

label	levels	all
	(Missing)	29491 (99.7)
animal_eryn	Yes	105 (0.4)
	No	7914 (26.8)
	Unknown	11400 (38.5)
	N/A	1284 (4.3)
	(Missing)	8872 (30.0)
animal_erterm	2 Budgerigars and 26 Cats at home	1 (1.0)
	2 dogs	1 (1.0)
	Bee Sting	1 (1.0)
	Bird (pet)	1 (1.0)
	bird (pigeon)	1 (1.0)
	Birds at home	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 (2.9)
	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 (3.9)
	Dog	12 (11.8)
	DOG	3 (2.9)
	DOG FAMILY PET	1 (1.0)
	Dog Pet	1 (1.0)
	Dog, domestic anima living in their home.	1 (1.0)
	Dogs	1 (1.0)
	dogs and cats	1 (1.0)
	Dogs at home	1 (1.0)
	domestic	1 (1.0)

label	levels	all
	Domestic pet dog	1 (1.0)
	DOMESTIC ANIMAL	2 (2.0)
	Domestic animal and faeces/nest	1 (1.0)
	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 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 (4.9)
	Domestic Pet (Dog)	6 (5.9)
	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	2 (2.0)
	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)

label	levels	all
	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 (%)		29575 (100.0)
fever_ceoccur_v2	YES	14515 (49.1)
	NO	5942 (20.1)
	Unknown	1163 (3.9)
	(Missing)	7955 (26.9)
cough_ceoccur_v2	YES	14771 (49.9)
	NO	5578 (18.9)
	Unknown	1253 (4.2)
	(Missing)	7973 (27.0)
coughsput_ceoccur_v2	YES	4380 (14.8)
	NO	12446 (42.1)
	Unknown	4605 (15.6)
	(Missing)	8144 (27.5)
coughhb_ceoccur_v2	YES	561 (1.9)
	NO	15857 (53.6)
	Unknown	4973 (16.8)
	(Missing)	8184 (27.7)
sorethroat_ceoccur_v2	YES	1502 (5.1)
	NO	13902 (47.0)
	Unknown	6023 (20.4)
	(Missing)	8148 (27.6)
runnynose_ceoccur_v2	YES	531 (1.8)
	NO	14529 (49.1)
	Unknown	6364 (21.5)
	(Missing)	8151 (27.6)
earpain_ceoccur_v2	YES	87 (0.3)
	NO	14961 (50.6)
	Unknown	6369 (21.5)

Stratified: all**all**

	(Missing)	8158 (27.6)
wheeze_ceoccur_v2	YES	1738 (5.9)
	NO	14584 (49.3)
	Unknown	5106 (17.3)
	(Missing)	8147 (27.5)
chestpain_ceoccur_v2	YES	2486 (8.4)
	NO	14729 (49.8)
	Unknown	4224 (14.3)
	(Missing)	8136 (27.5)
myalgia_ceoccur_v2	YES	3192 (10.8)
	NO	12510 (42.3)
	Unknown	5711 (19.3)
	(Missing)	8162 (27.6)
jointpain_ceoccur_v2	YES	1107 (3.7)
	NO	13967 (47.2)
	Unknown	6310 (21.3)
	(Missing)	8191 (27.7)
fatigue_ceoccur_v2	YES	7565 (25.6)
	NO	9194 (31.1)
	Unknown	4664 (15.8)
	(Missing)	8152 (27.6)
shortbreath_ceoccur_v2	YES	14115 (47.7)
	NO	5790 (19.6)
	Unknown	1693 (5.7)
	(Missing)	7977 (27.0)
lowerchest_ceoccur_v2	YES	220 (0.7)
	NO	14178 (47.9)
	Unknown	7005 (23.7)
	(Missing)	8172 (27.6)
headache_ceoccur_v2	YES	1932 (6.5)
	NO	13678 (46.2)
	Unknown	5797 (19.6)
	(Missing)	8168 (27.6)
confusion_ceoccur_v2	YES	4937 (16.7)
	NO	13356 (45.2)
	Unknown	3165 (10.7)

Stratified: all

all

	(Missing)	8117 (27.4)
seizures_ceoccur_v2	YES	304 (1.0)
	NO	16925 (57.2)
	Unknown	4174 (14.1)
	(Missing)	8172 (27.6)
abdopain_ceoccur_v2	YES	1758 (5.9)
	NO	15383 (52.0)
	Unknown	4298 (14.5)
	(Missing)	8136 (27.5)
vomit_ceoccur_v2	YES	3537 (12.0)
	NO	14348 (48.5)
	Unknown	3574 (12.1)
	(Missing)	8116 (27.4)
diarrhoea_ceoccur_v2	YES	3613 (12.2)
	NO	14206 (48.0)
	Unknown	3628 (12.3)
	(Missing)	8128 (27.5)
conjunct_ceoccur_v2	YES	62 (0.2)
	NO	15952 (53.9)
	Unknown	5394 (18.2)
	(Missing)	8167 (27.6)
rash_ceoccur_v2	YES	272 (0.9)
	NO	16104 (54.5)
	Unknown	5032 (17.0)
	(Missing)	8167 (27.6)
skinulcers_ceoccur_v2	YES	408 (1.4)
	NO	15952 (53.9)
	Unknown	5048 (17.1)
	(Missing)	8167 (27.6)
lymp_ceoccur_v2	YES	107 (0.4)
	NO	15949 (53.9)
	Unknown	5340 (18.1)
	(Missing)	8179 (27.7)
bleed_ceoccur_v2	YES	216 (0.7)
	NO	16737 (56.6)
	Unknown	4441 (15.0)

Stratified: all		all
	(Missing)	8181 (27.7)
bleed_ceterm_v2	YES	343 (1.2)
	NO	15110 (51.1)
	Unknown	4296 (14.5)
	(Missing)	9826 (33.2)

Comorbidity (detail)

Table 3

Stratified: all		all
Total N (%)		29575 (100.0)
chrincard	YES	6420 (21.7)
	NO	14280 (48.3)
	Unknown	940 (3.2)
	(Missing)	7935 (26.8)
chronicpul_mhyn	YES	3701 (12.5)
	NO	16905 (57.2)
	Unknown	1018 (3.4)
	(Missing)	7951 (26.9)
asthma_mhyn	YES	2921 (9.9)
	NO	17590 (59.5)
	Unknown	1083 (3.7)
	(Missing)	7981 (27.0)
renal_mhyn	YES	3334 (11.3)
	NO	17134 (57.9)
	Unknown	1120 (3.8)
	(Missing)	7987 (27.0)
modliv	YES	357 (1.2)
	NO	19938 (67.4)
	Unknown	1282 (4.3)
	(Missing)	7998 (27.0)
mildliver	YES	321 (1.1)
	NO	19934 (67.4)
	Unknown	1320 (4.5)
	(Missing)	8000 (27.0)
chronicneu_mhyn	YES	2339 (7.9)
	NO	17995 (60.8)

Stratified: all

all

	Unknown	1246 (4.2)
	(Missing)	7995 (27.0)
malignantneo_mhyn	YES	2002 (6.8)
	NO	18291 (61.8)
	Unknown	1296 (4.4)
	(Missing)	7986 (27.0)
chronichaemo_mhyn	YES	815 (2.8)
	NO	19441 (65.7)
	Unknown	1308 (4.4)
	(Missing)	8011 (27.1)
aidshiv_mhyn	YES	91 (0.3)
	NO	20071 (67.9)
	Unknown	1414 (4.8)
	(Missing)	7999 (27.0)
obesity_mhyn	YES	1985 (6.7)
	NO	16774 (56.7)
	Unknown	2678 (9.1)
	(Missing)	8138 (27.5)
diabetescom_mhyn	YES	1507 (5.1)
	NO	18927 (64.0)
	Unknown	1155 (3.9)
	(Missing)	7986 (27.0)
diabetes_mhyn	YES	4169 (14.1)
	NO	16355 (55.3)
	Unknown	1083 (3.7)
	(Missing)	7968 (26.9)
rheumatologic_mhyn	YES	1991 (6.7)
	NO	18213 (61.6)
	Unknown	1331 (4.5)
	(Missing)	8040 (27.2)
dementia_mhyn	YES	2821 (9.5)
	NO	17580 (59.4)
	Unknown	1180 (4.0)
	(Missing)	7994 (27.0)
malnutrition_mhyn	YES	459 (1.6)
	NO	18989 (64.2)

Stratified: all

all

	Unknown	2042 (6.9)
	(Missing)	8085 (27.3)
Smoking	YES	1023 (3.5)
	NO	15363 (51.9)
	(Missing)	13189 (44.6)