Dynamic CO-CIN report to SAGE and NERVTAG

[OFFICIAL-SENSITIVE PROTECT]

Dynamic content updated: 2020-05-06 10:04:30.

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 06 May 2020, CO-CIN has recruited **31060 patients** with confirmed Coronavirus (Figure 1).

The CO-CIN dataset represents NA% (31060/NA) of cases of confirmed Coronovirus cases in the UK, per the PHE daily reports (last updated 9am on 5 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 891 had travelled abroad recently, and 5766 reported visiting or working in a hospital where COVID-19 cases are being managed.

The median age is 73 (range: 0-105), Male/Female 15360/10481.

The most common symptoms were cough_ceoccur_v2 (68%), fever_ceoccur_v2 (67%) and shortbreath_ceoccur_v2 (65%) (Figure 3A).
947/23302 (4%) of patients have reported no symptoms. Comorbidity can be seen in Figure 3B. The most common comorbidities were chrincard (30%), diabetes_mhyn (19%) and chronicpul_mhyn (17%). 12857/31060 (41%) of patients have reported no co morbidity. 122/1982 (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 = 16648).
2194/16293 (13%) patients required high-flow oxygen after day 1 of treatment.

Currently 6573 patient(s) have died and 3668 required ICU. 10435 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.

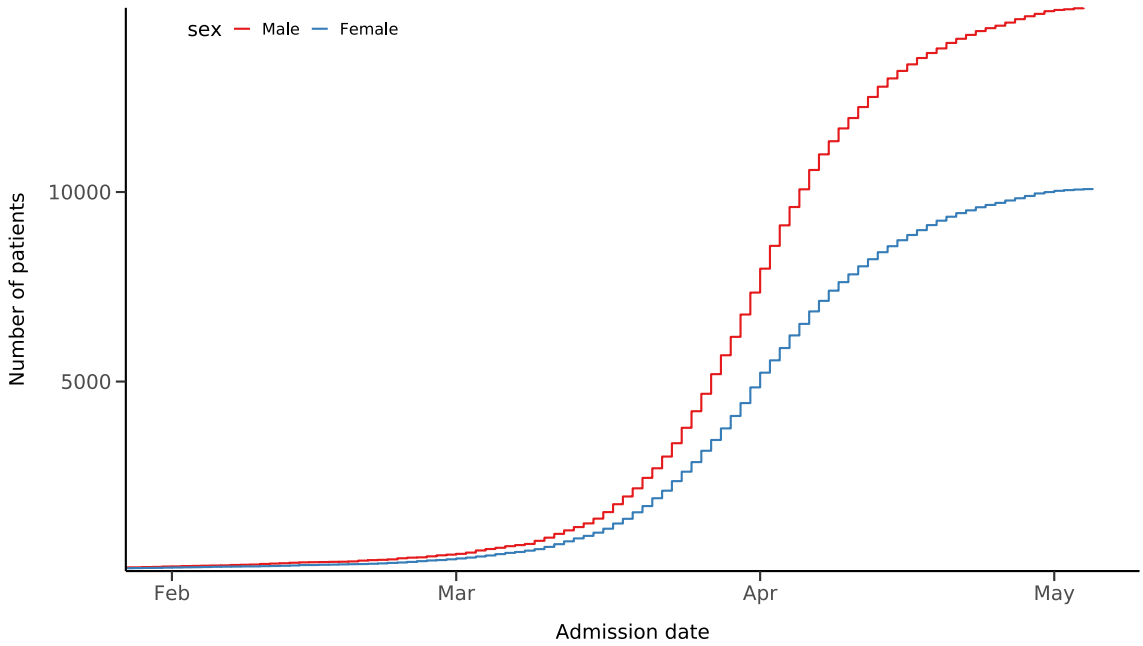
Prof Calum Semple, Professor in Child Health and Outbreak Medicine, University of Liverpool.
Dr Annemarie Docherty, Academic Consultant Intensive Care University of Edinburgh.
Dr Chris Green, Academic Consultant Infectious Disease University of Birmingham.
Prof Ewen Harrison, Director Centre for Medical 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

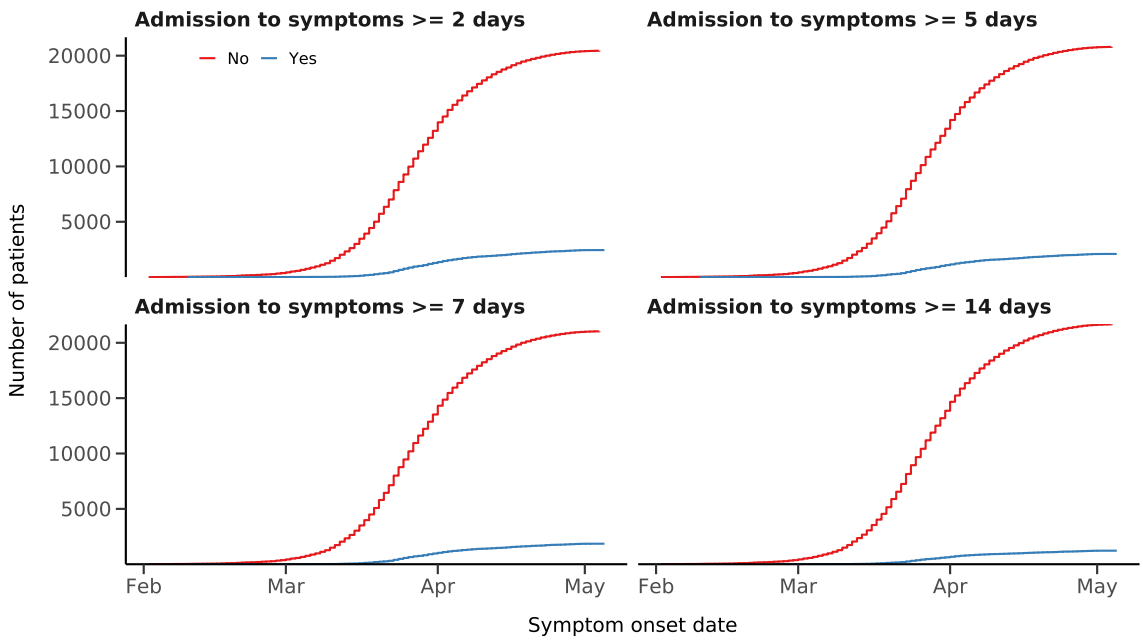
Hospital admission with COVID-19 by sex

Figure 1A



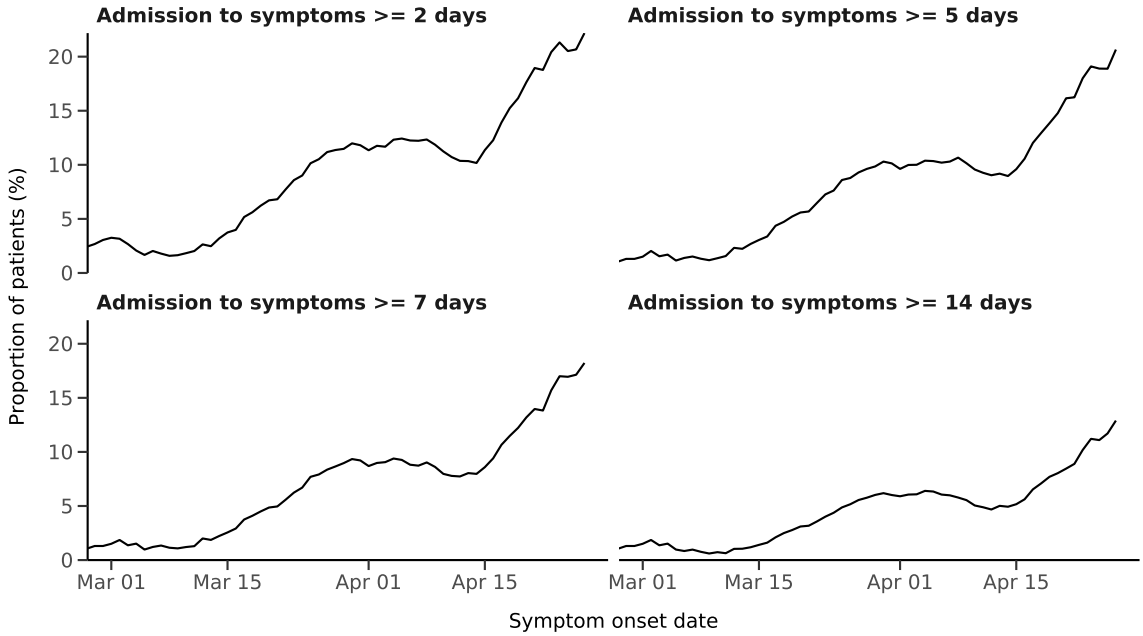
Number with symptom onset occuring after admission to hospital

Figure 1B



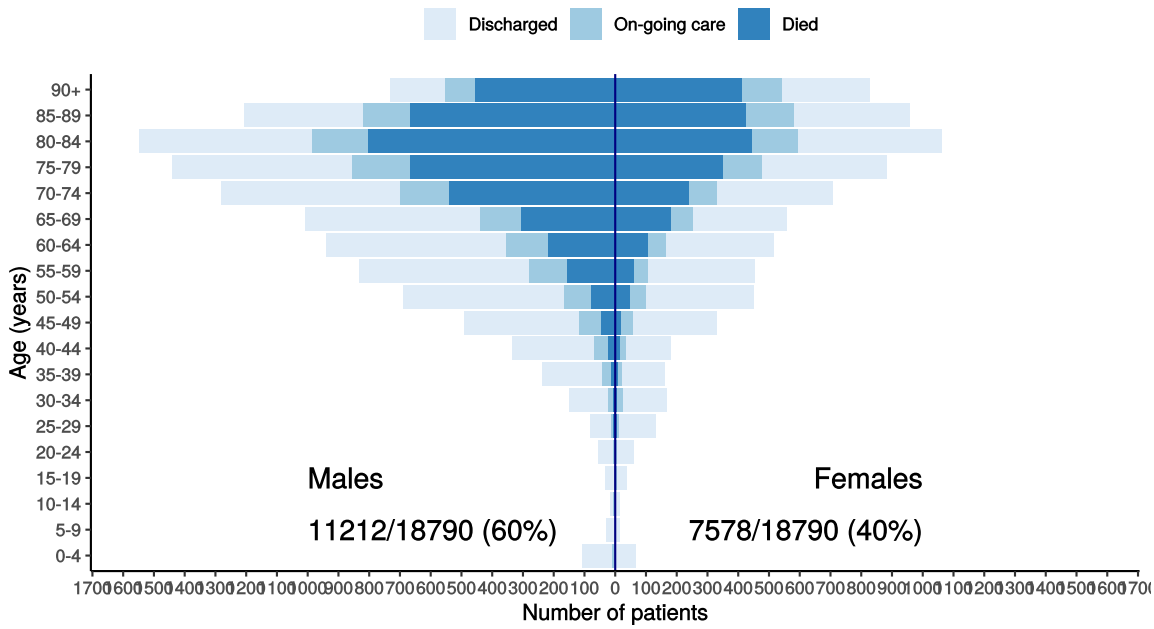
Proportion with symptom onset occuring after hospital admission

Figure 1C - 7-day rolling percentage. n = 22899



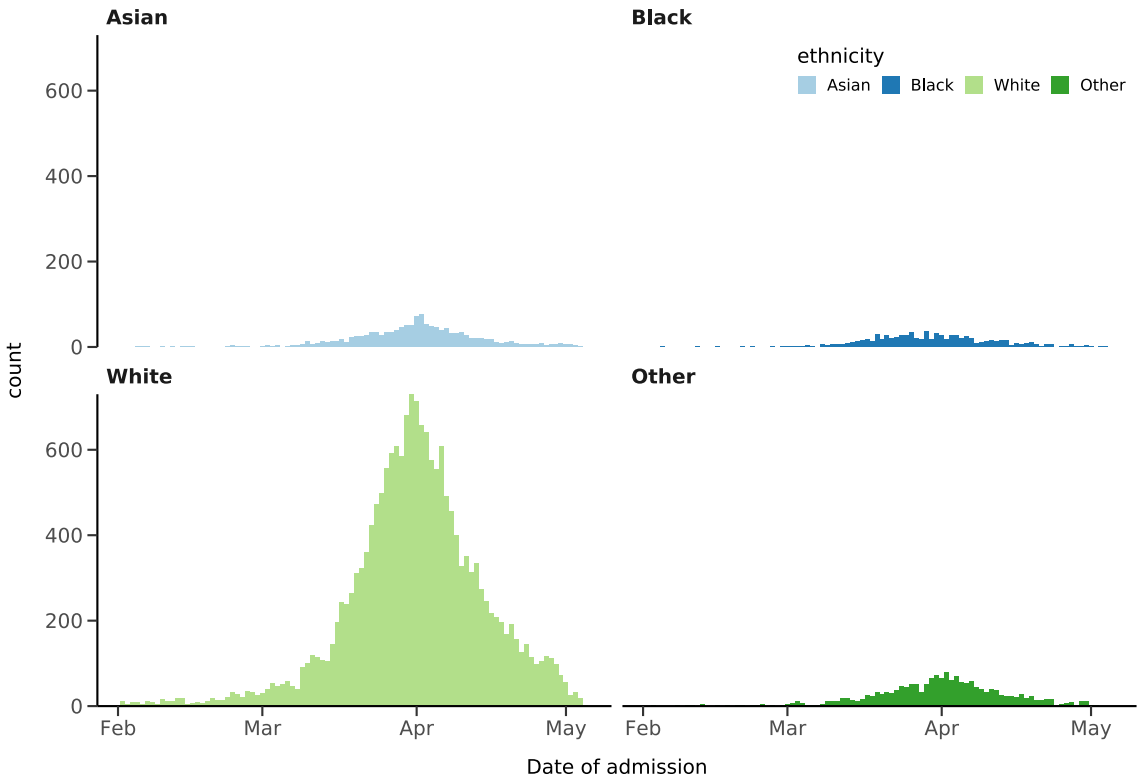
Patients with outcome stratified by age, and sex

Figure 1D



Hospital admission with COVID-19 by ethnicity

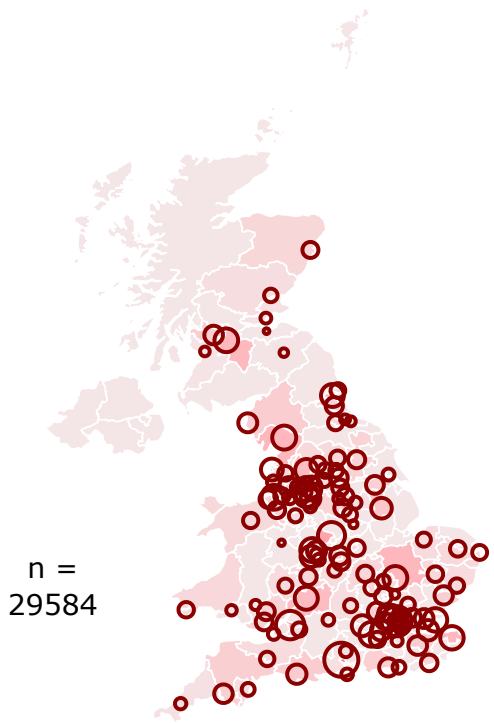
Figure 1E



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

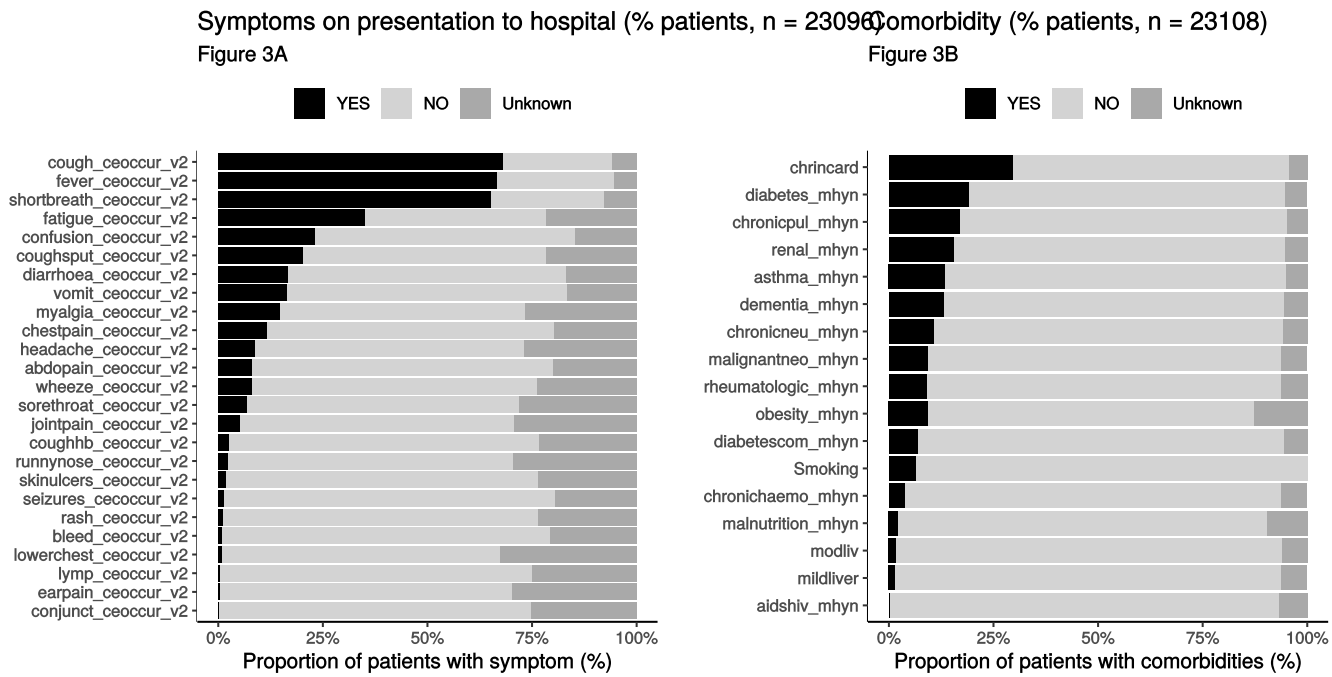
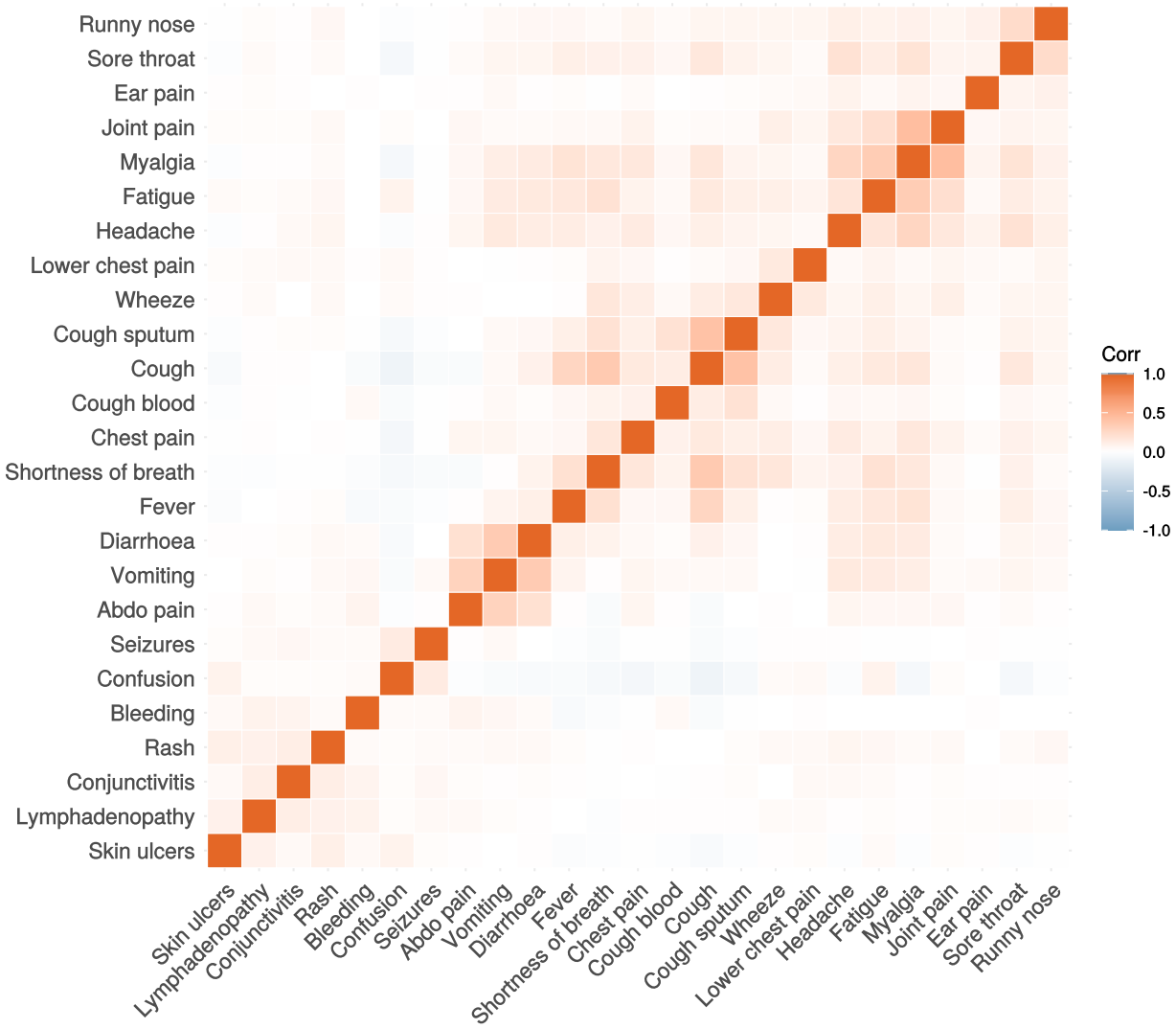


Figure 3C

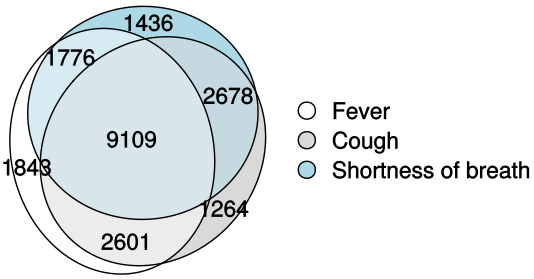
Correlation of symtpoms in all pages. Note clusters, top right to bottom left, flu-like, coryzal, abdominal, respiratory, neurocutaneous.



Symptoms (diagnostic criteria)

Figure 4A

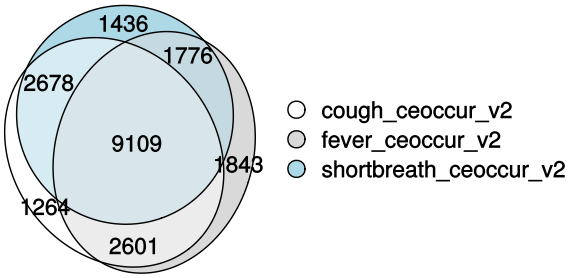
n = 23096



Symptoms (most common)

Figure 4B

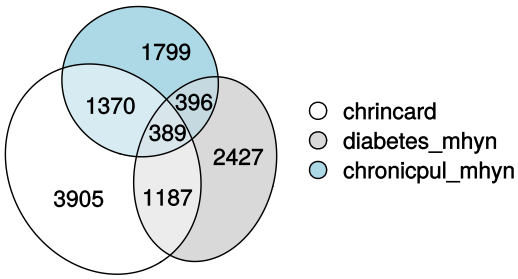
n = 23096



Comorbidity (most common)

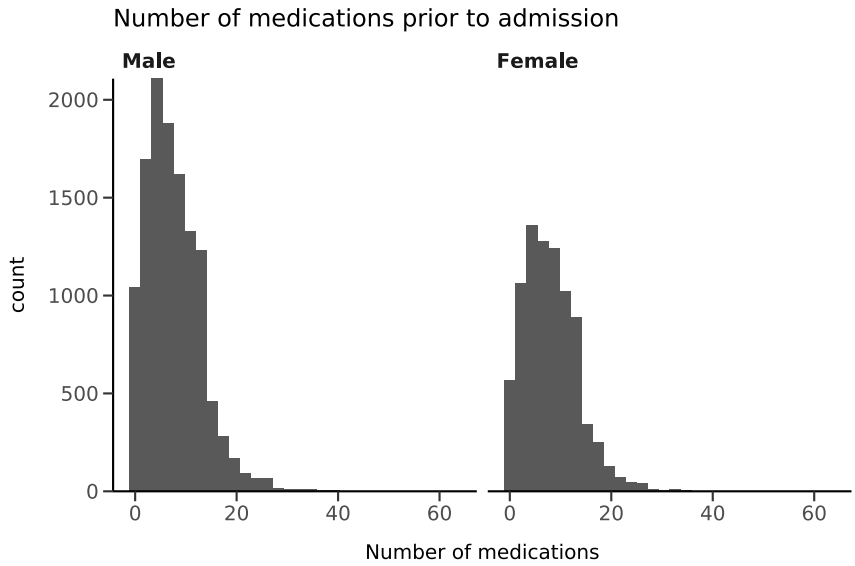
Figure 4C

n = 23108



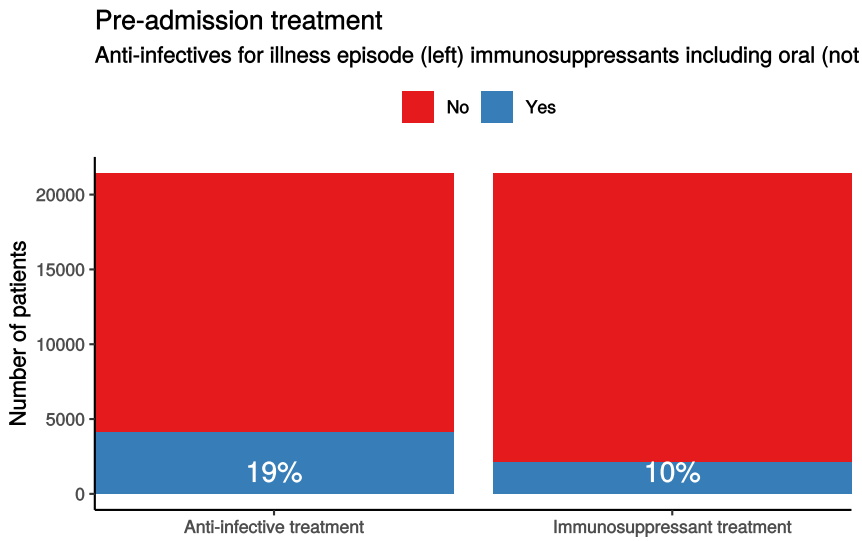
Medication prior to illness

Figure 5



Preadmission treatment

Figure 6



Patient flow

Figure 7A - All patients

N = 23566

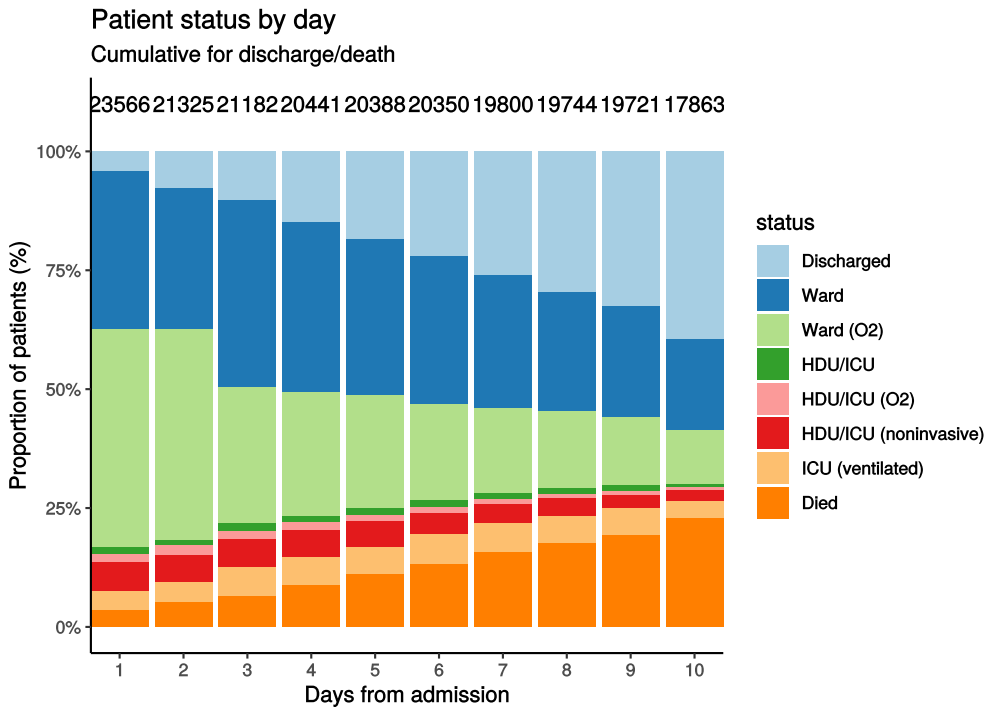
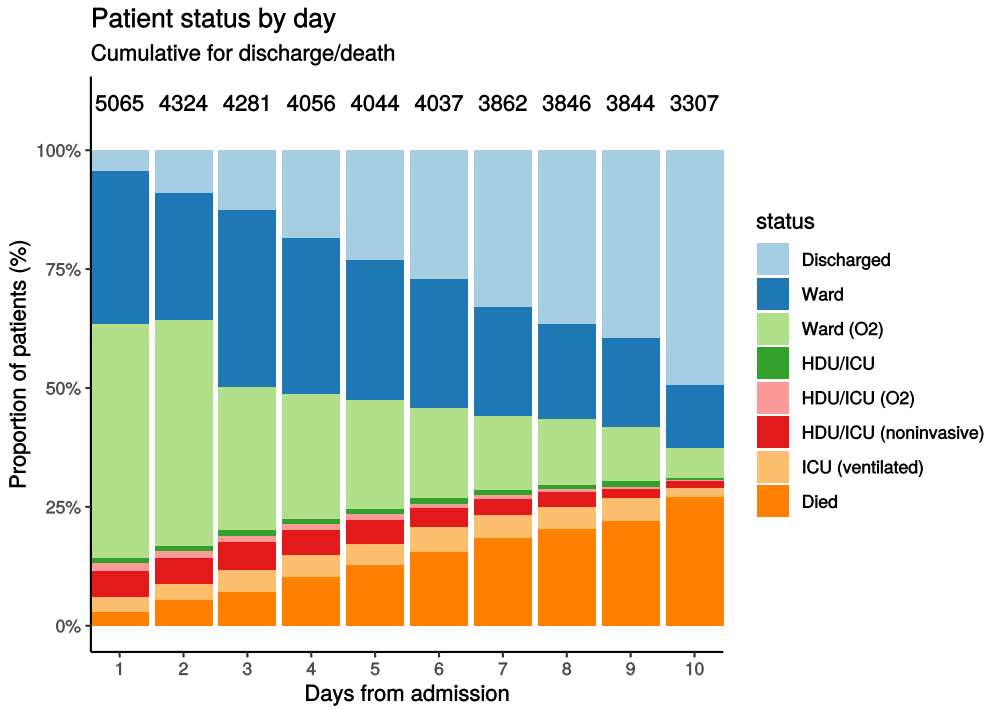


Figure 7B - Patients admitted >=14 days and <=28 days ago

N = 5065



Oxygen requirement

Figure 8A - All patients

N = 21548

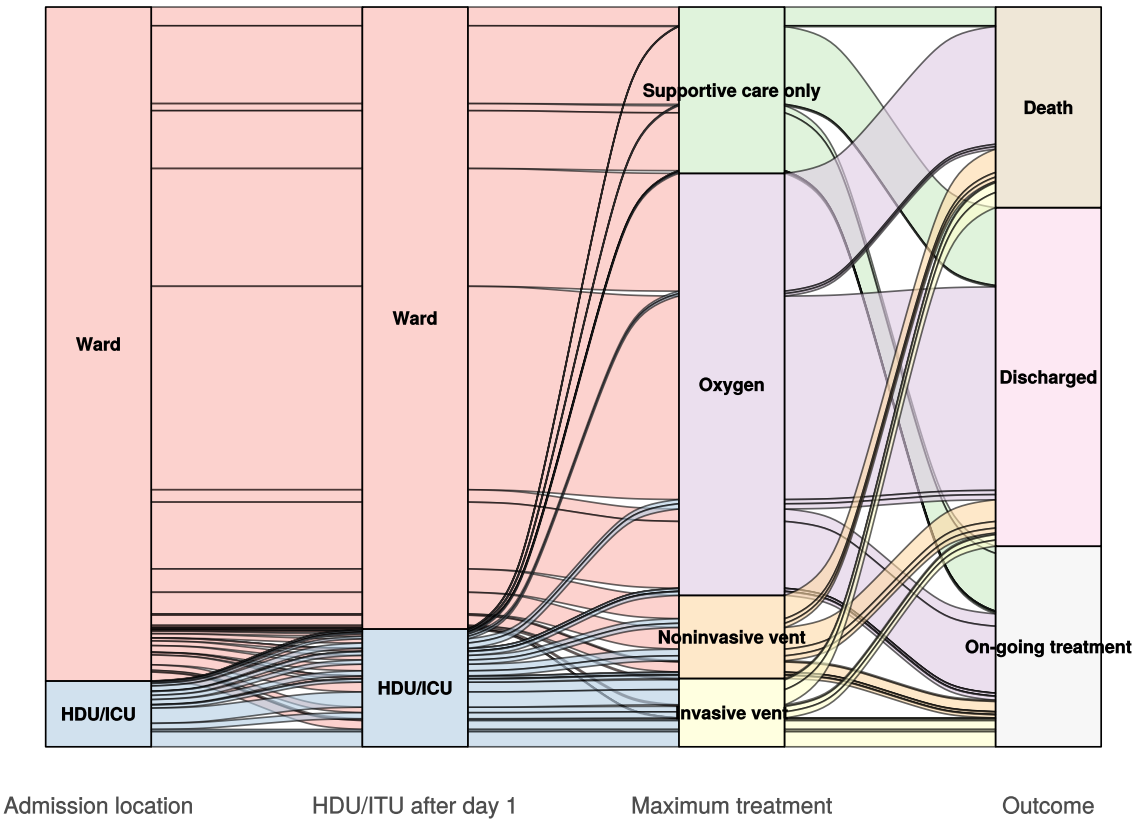
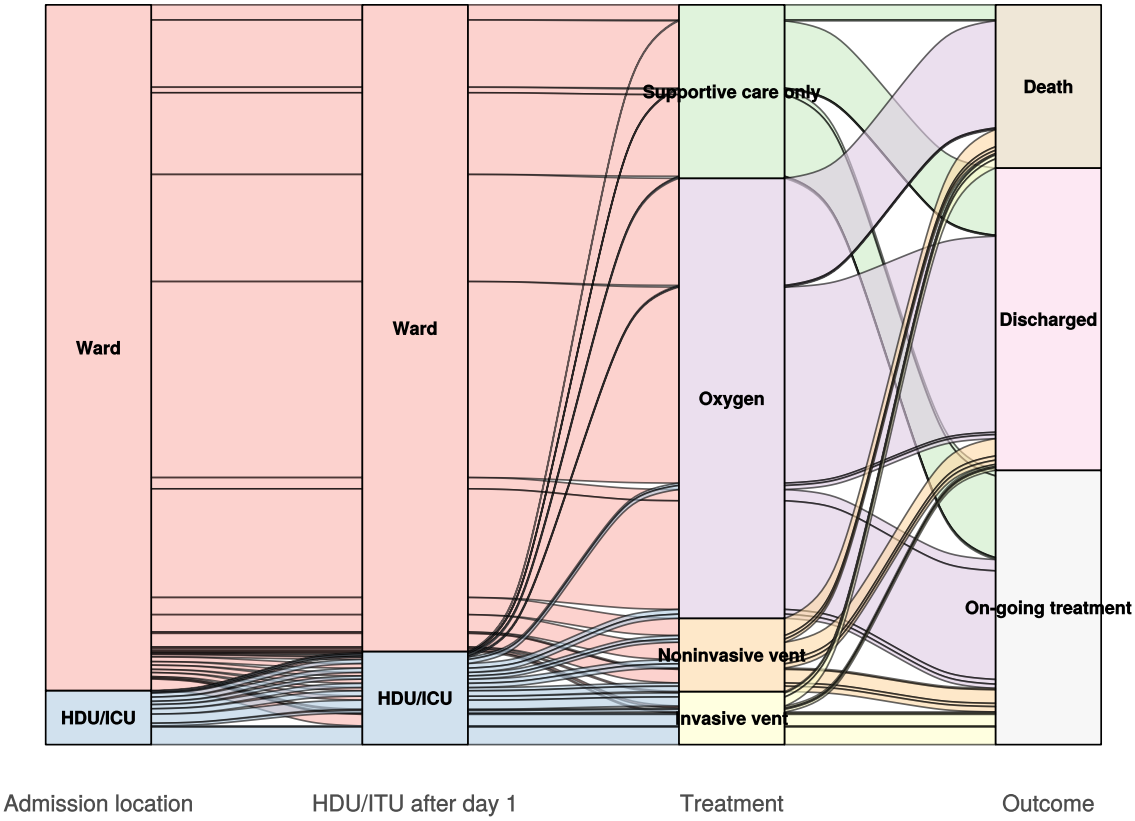


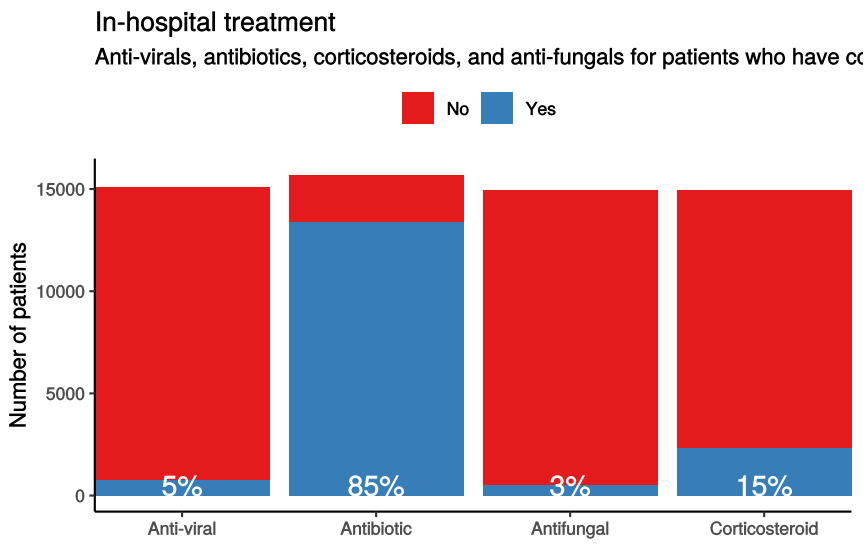
Figure 8B - Patients admitted >=14 days and <=28 days ago

N = 4707



In-hospital medical treatment

Figure 9

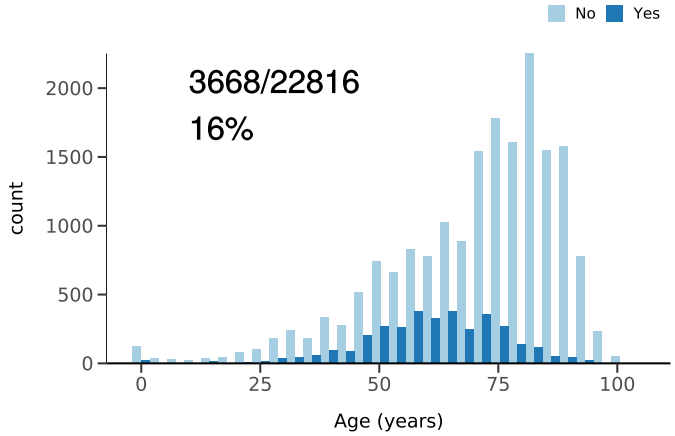


Treatment

Figure 10

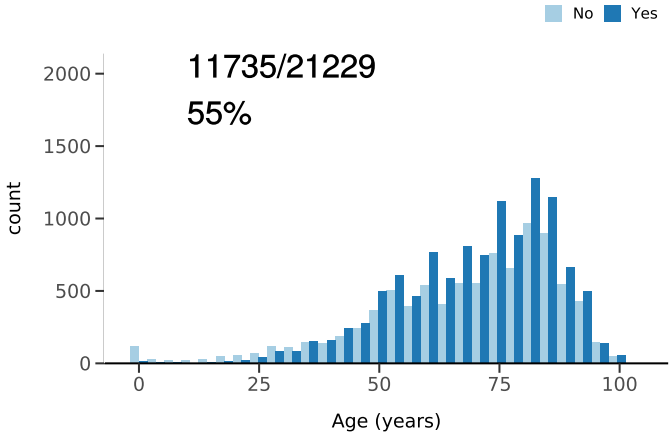
ICU/HDU admission

Figure 10A



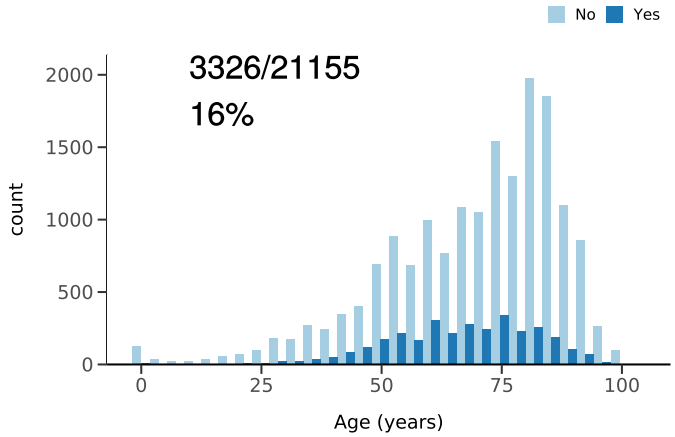
High flow oxygen

Figure 10B



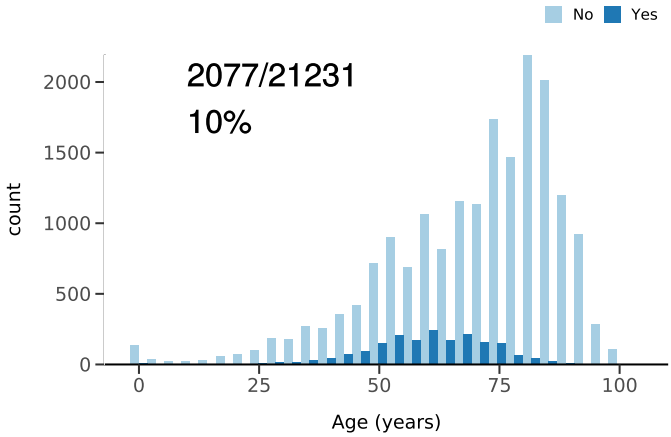
Noninvasive ventilation

Figure 10C



Invasive ventilation

Figure 10D

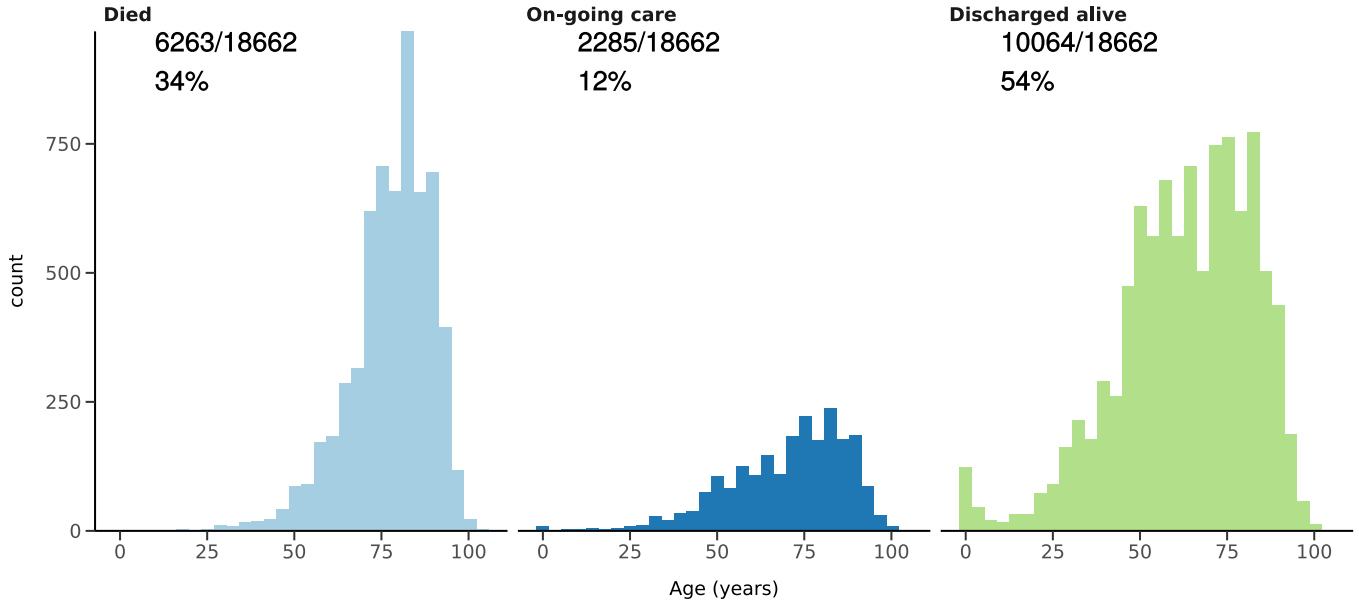


Status in patients admitted >=14 days from today

Figure 11

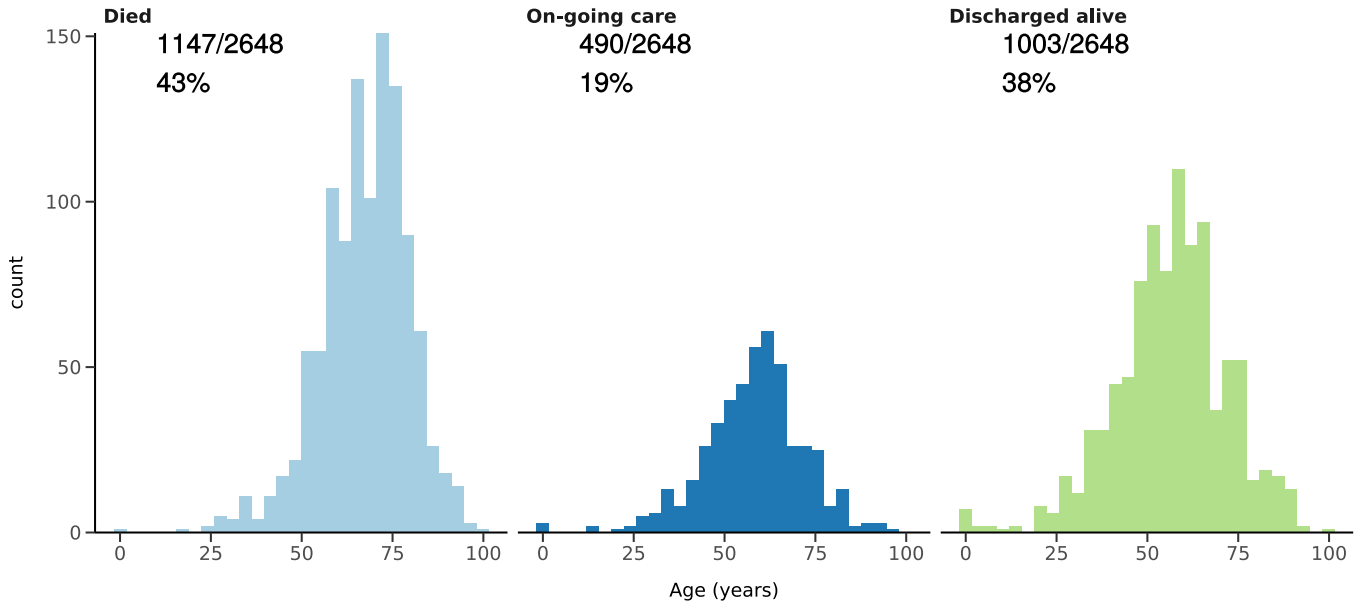
All: status in patients admitted >=14 days ago

Figure 11A



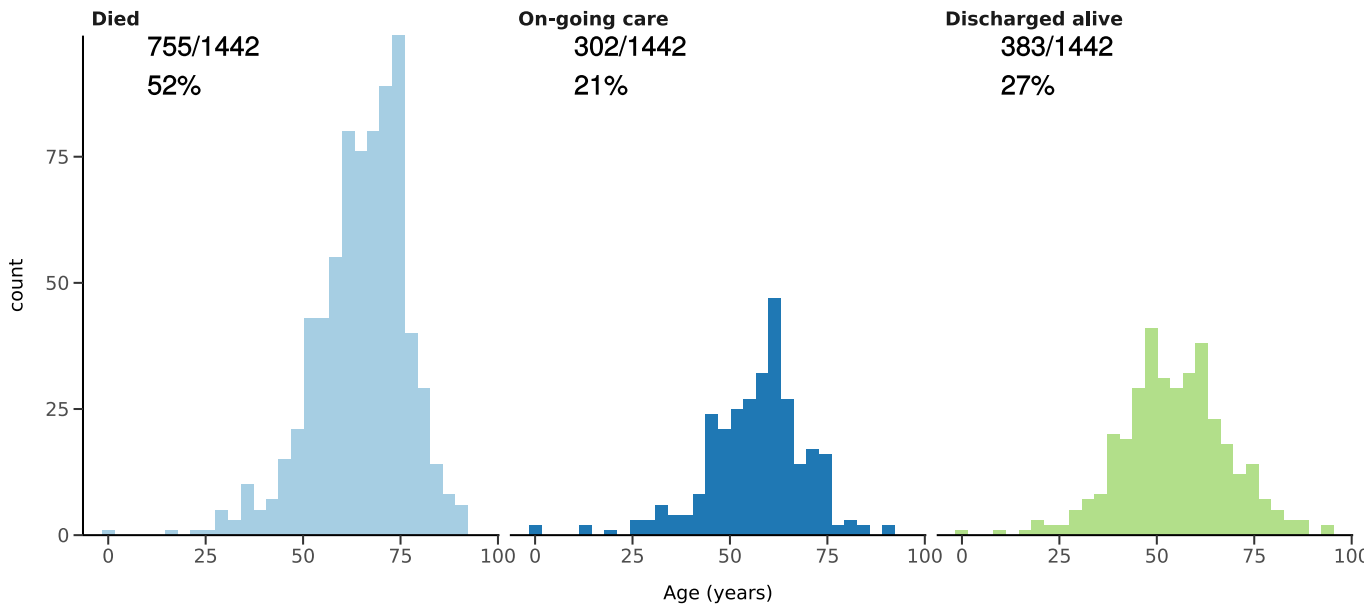
ICU/HDU admissions: status in patients admitted >=14 days ago

Figure 11B



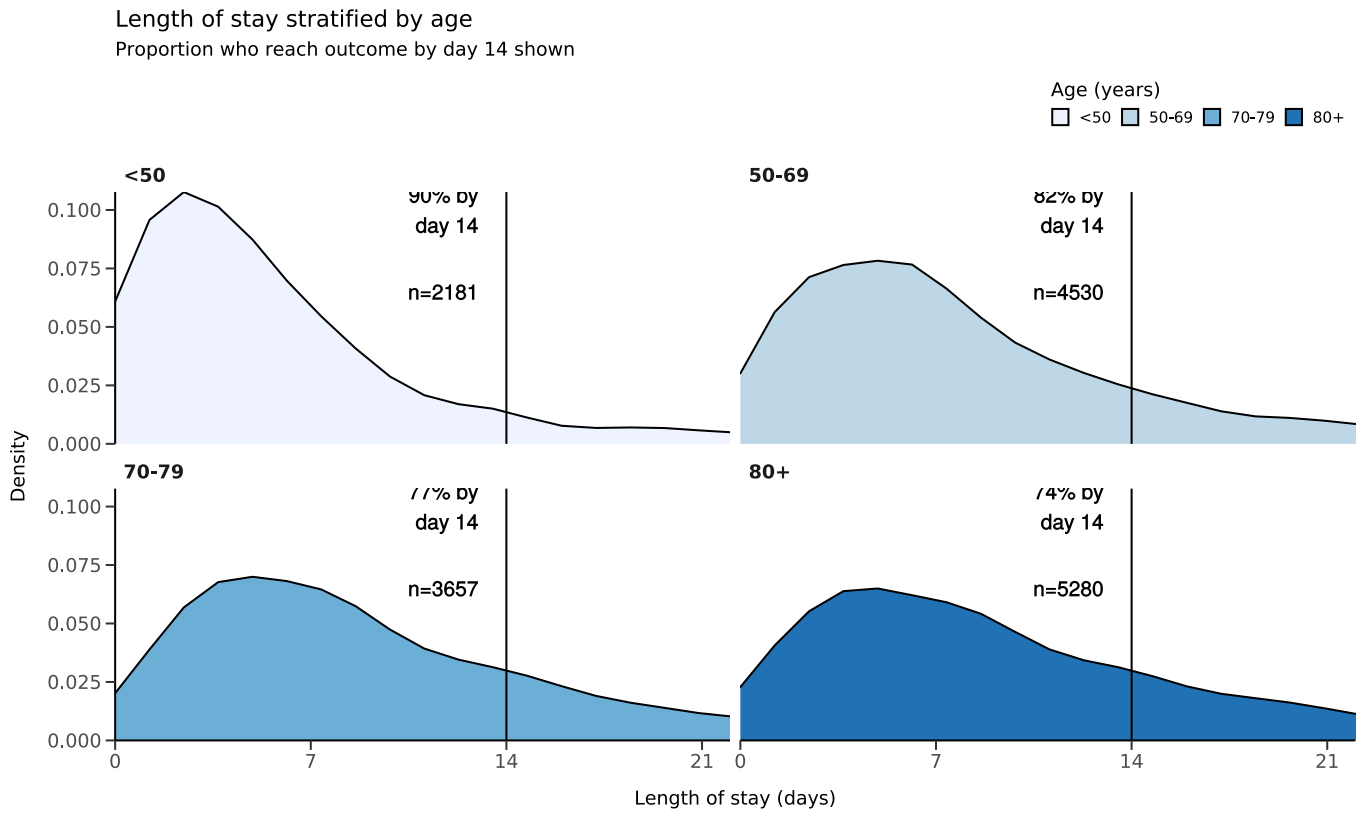
Invasive ventilation: status in patients admitted >=14 days ago

Figure 11c



Length of stay stratified by age

Figure 12



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	2261 (93.9)	148 (6.1)	•	•
	50-69	3686 (76.8)	1113 (23.2)	4.61 (3.87-5.54, p<0.001)	4.15 (3.40-5.10, p<0.001)
	70-79	2099 (54.6)	1742 (45.4)	12.68 (10.65-15.20, p<0.001)	10.25 (8.38-12.65, p<0.001)
	80+	2512 (44.8)	3099 (55.2)	18.85 (15.89-22.52, p<0.001)	14.81 (12.11-18.27, p<0.001)
Sex at Birth	Male	6241 (61.2)	3960 (38.8)	•	•
	Female	4610 (66.8)	2289 (33.2)	0.78 (0.73-0.83, p<0.001)	0.71 (0.66-0.77, p<0.001)
Chronic cardiac disease	NO	7639 (70.1)	3265 (29.9)	•	•
	YES	2464 (50.6)	2410 (49.4)	2.29 (2.13-2.45, p<0.001)	1.27 (1.17-1.39, p<0.001)
Chronic pulmonary disease	NO	8620 (66.7)	4301 (33.3)	•	•
	YES	1438 (51.5)	1356 (48.5)	1.89 (1.74-2.05, p<0.001)	1.33 (1.20-1.47, p<0.001)
Chronic neurological disorder	NO	9001 (65.5)	4738 (34.5)	•	•
	YES	954 (53.2)	839 (46.8)	1.67 (1.51-1.84, p<0.001)	1.30 (1.15-1.47, p<0.001)
Chronic hematologic disease	NO	9583 (64.7)	5221 (35.3)	•	•
	YES	344 (51.7)	321 (48.3)	1.71 (1.47-2.00, p<0.001)	1.32 (1.09-1.59, p=0.005)
Chronic kidney disease	NO	8784 (67.2)	4287 (32.8)	•	•

Dependent: death		No	Yes	OR (univariable)	OR (multivariable)
	YES	1222 (47.9)	1328 (52.1)	2.23 (2.04-2.43, p<0.001)	1.38 (1.24-1.53, p<0.001)
Dementia	NO	9079 (67.5)	4381 (32.5)	•	•
	YES	918 (43.1)	1214 (56.9)	2.74 (2.50-3.01, p<0.001)	1.49 (1.33-1.67, p<0.001)
Obesity	NO	8204 (64.3)	4561 (35.7)	•	•
	YES	1017 (66.6)	510 (33.4)	0.90 (0.81-1.01, p=0.072)	1.53 (1.34-1.75, p<0.001)
Malignancy	NO	9149 (65.6)	4806 (34.4)	•	•
	YES	794 (51.7)	742 (48.3)	1.78 (1.60-1.98, p<0.001)	1.24 (1.09-1.41, p=0.001)

Number in dataframe = 23663, Number in model = 13323, Missing = 10340, AIC = 14895.9, C-statistic = 0.742, H&L = Chi-sq(8) 57.42 (p<0.001)

Figure 13 - Adjusted odds ratio plot

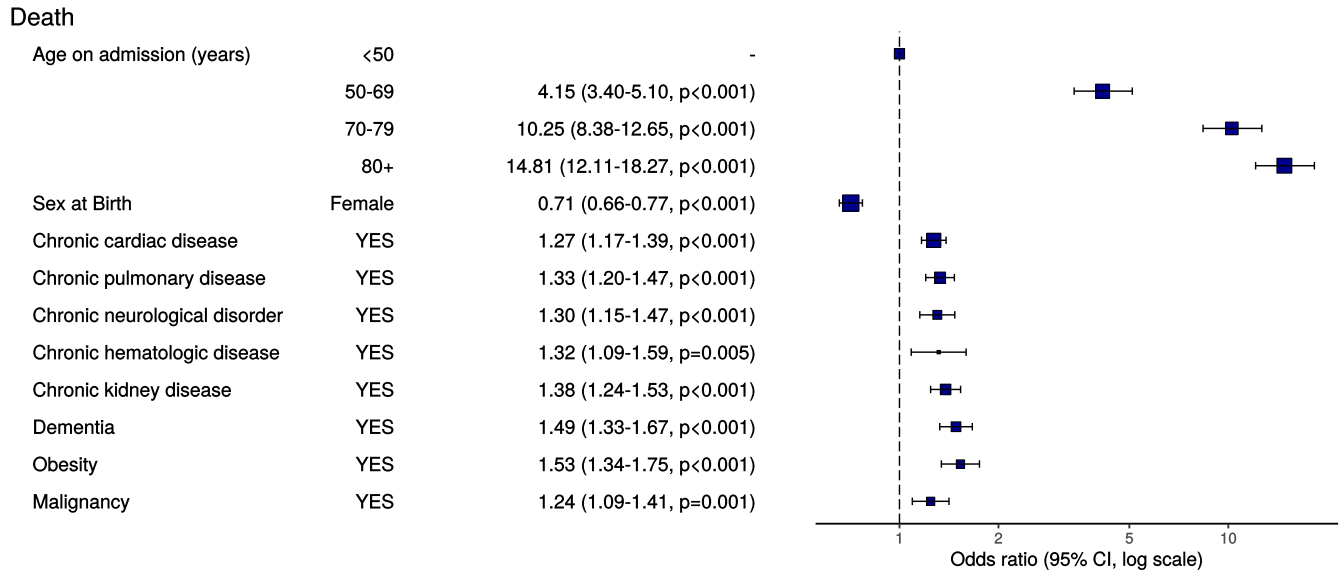
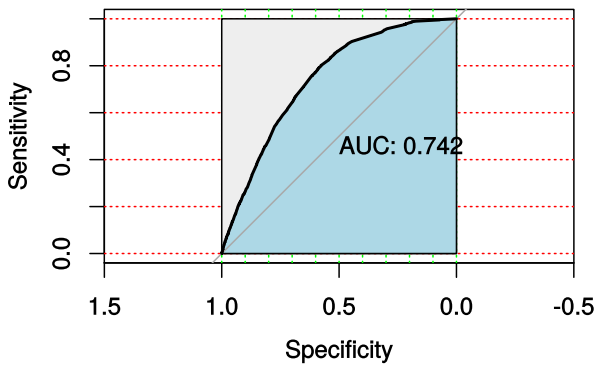


Figure 14 - ROC

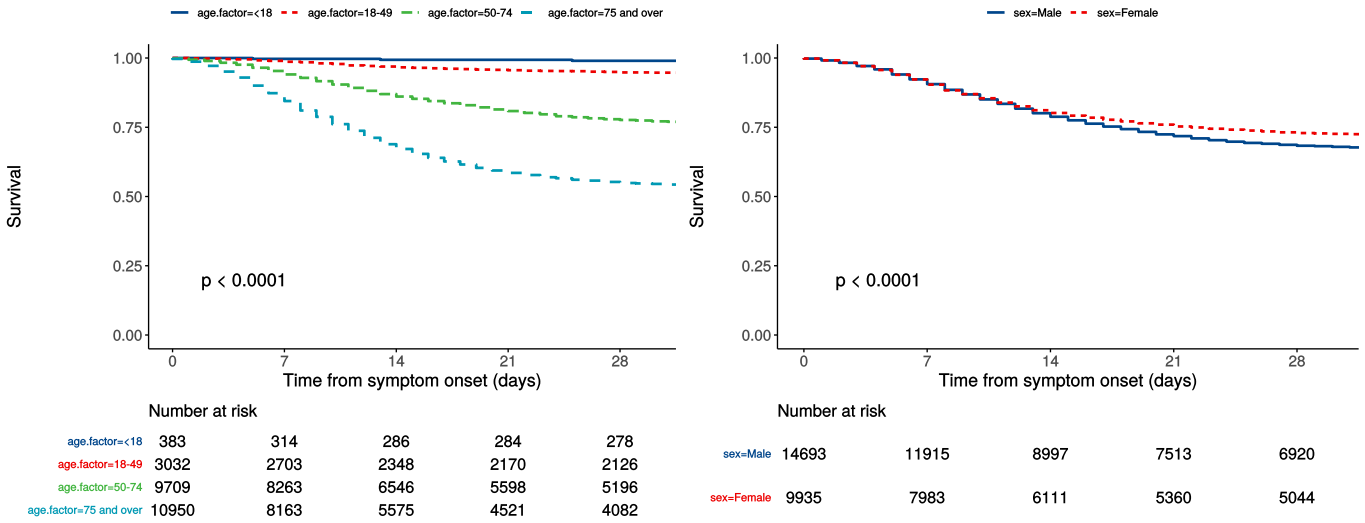


Survival models

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	3549 (14.4)	•	•
	50-69	7373 (29.8)	3.95 (3.34-4.67, p<0.001)	3.62 (2.93-4.47, p<0.001)
	70-79	5557 (22.5)	9.42 (7.99-11.11, p<0.001)	8.49 (6.89-10.46, p<0.001)
	80+	8227 (33.3)	13.49 (11.47-15.85, p<0.001)	11.36 (9.23-13.98, p<0.001)
Sex at Birth	Male	15090 (59.7)	•	•
	Female	10177 (40.3)	0.83 (0.79-0.87, p<0.001)	0.81 (0.76-0.86, p<0.001)
qSOFA score on admission	0	7188 (39.8)	•	•
	1	8630 (47.8)	1.48 (1.39-1.58, p<0.001)	1.57 (1.46-1.69, p<0.001)
	2	2028 (11.2)	2.97 (2.74-3.23, p<0.001)	2.77 (2.53-3.04, p<0.001)
	3	227 (1.3)	4.77 (4.00-5.68, p<0.001)	3.85 (3.15-4.70, p<0.001)
Symptomatic at presentation	No symptoms	511 (2.2)	•	•
	Symptoms	23097 (97.8)	1.09 (0.91-1.31, p=0.342)	•
Chronic cardiac disease	NO	15426 (69.0)	•	•
	YES	6927 (31.0)	1.91 (1.81-2.01, p<0.001)	1.21 (1.13-1.29, p<0.001)
Chronic kidney disease	NO	18557 (83.9)	•	•
	YES	3553 (16.1)	1.89 (1.78-2.01, p<0.001)	1.26 (1.17-1.37, p<0.001)
Moderate/severe liver disease	NO	21539 (98.2)	•	•
	YES	386 (1.8)	1.43 (1.21-1.70, p<0.001)	1.57 (1.26-1.97, p<0.001)
Chronic neurological disorder	NO	19274 (87.7)	•	•
	YES	2700 (12.3)	1.55 (1.44-1.66, p<0.001)	•

Dependent: Surv(time, status)		all	HR (univariable)	HR (multivariable)
Malignancy	NO	19824 (90.4)	•	•
	YES	2107 (9.6)	1.56 (1.44-1.68, p<0.001)	1.17 (1.06-1.28, p=0.001)
Chronic hematologic disease	NO	21018 (96.1)	•	•
	YES	864 (3.9)	1.54 (1.37-1.72, p<0.001)	•
Obesity	NO	18113 (89.3)	•	•
	YES	2171 (10.7)	0.87 (0.79-0.95, p=0.002)	1.32 (1.18-1.46, p<0.001)
Diabetes without complications	NO	17757 (80.2)	•	•
	YES	4394 (19.8)	1.20 (1.13-1.27, p<0.001)	•
Rheumatologic disorder	NO	19654 (90.0)	•	•
	YES	2176 (10.0)	1.15 (1.06-1.25, p=0.001)	•
Dementia	NO	18970 (86.1)	•	•
	YES	3075 (13.9)	2.25 (2.11-2.39, p<0.001)	1.21 (1.11-1.31, p<0.001)
Malnutrition	NO	20526 (97.6)	•	•
	YES	494 (2.4)	1.73 (1.49-2.00, p<0.001)	•
smoking_mhyn_2levels	NO	16435 (93.6)	•	•
	YES	1132 (6.4)	1.09 (0.97-1.22, p=0.164)	•

Number in dataframe = 25553, Number in model = 14747, Missing = 10806, Number of events = 3961, Concordance = 0.734 (SE = 0.004), R-squared = 0.164(Max possible = 0.993), Likelihood ratio test = 2645.806 (df = 13, p = 0.000)

Figure 16a - Multivariable Cox proportional hazards model

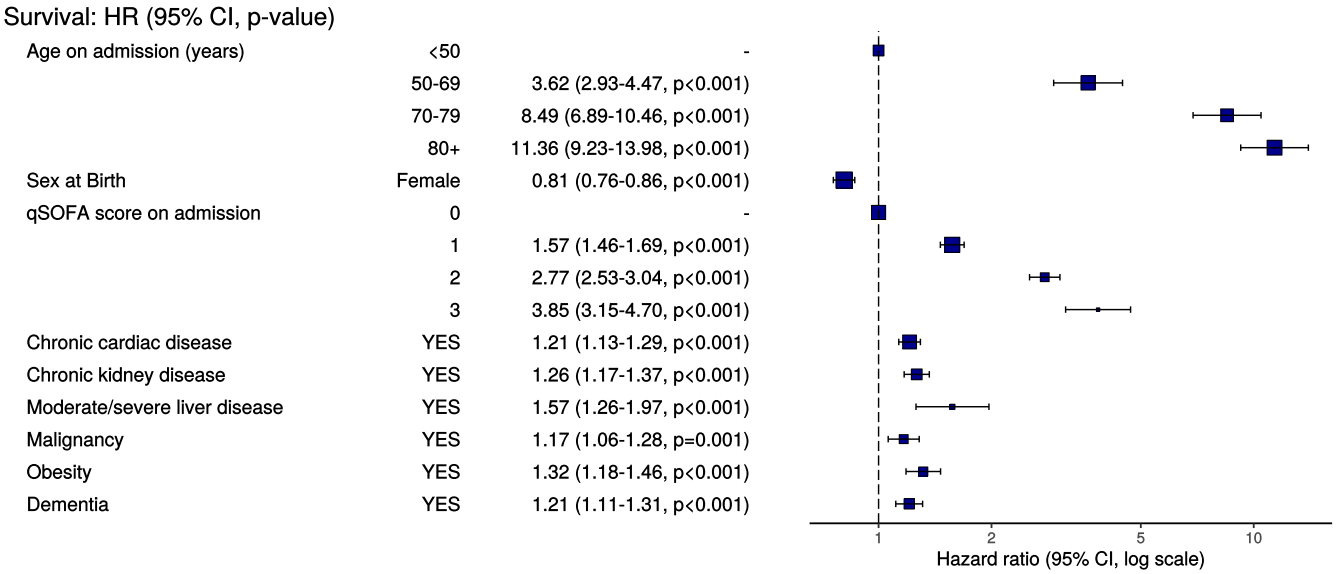
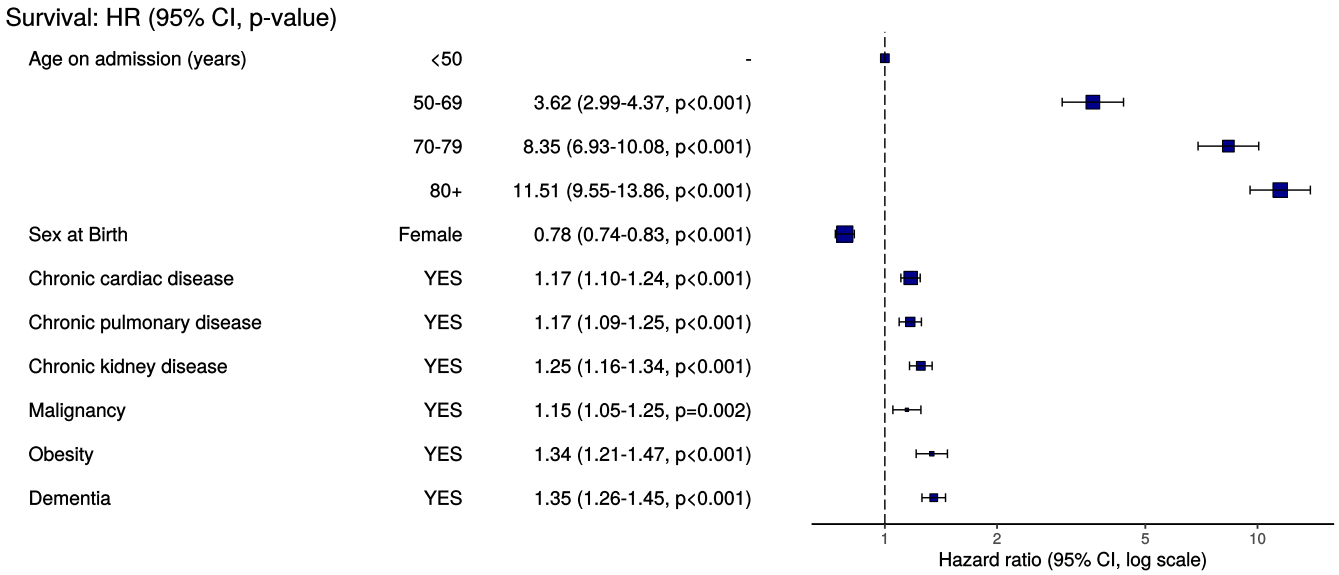


Figure 16b - Multivariable Cox proportional hazards model (age, sex, comorbidities only)



ROC = 0.7337962

Figure 17 - Predictions calibration plot

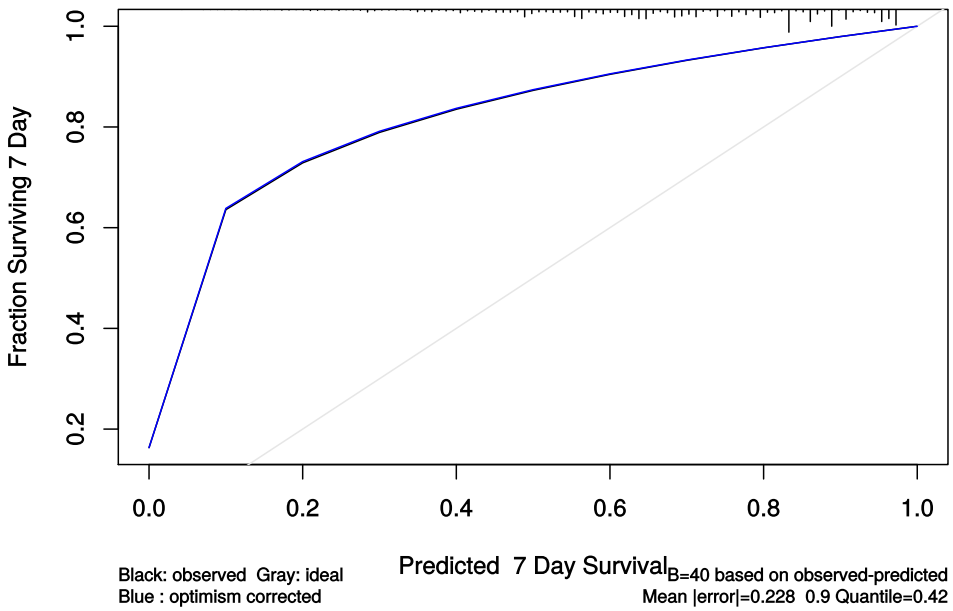


Figure 18 - Prognostic model predictions

Again, for demonstration of methods.

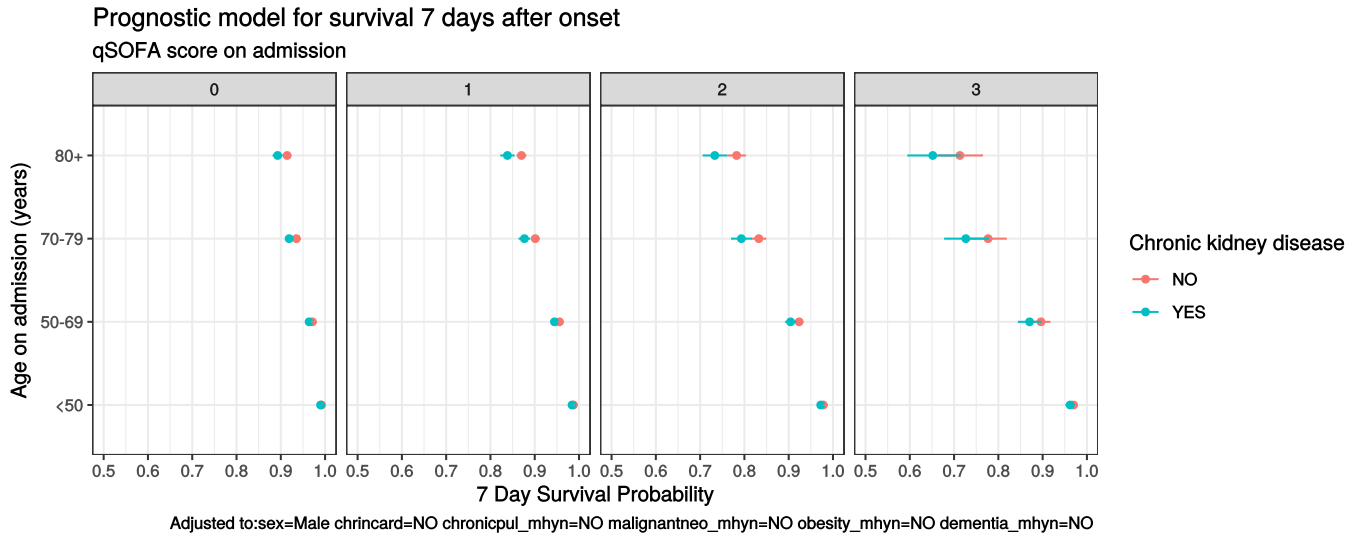


Figure 19 - Death by severity (NEWS) on admission

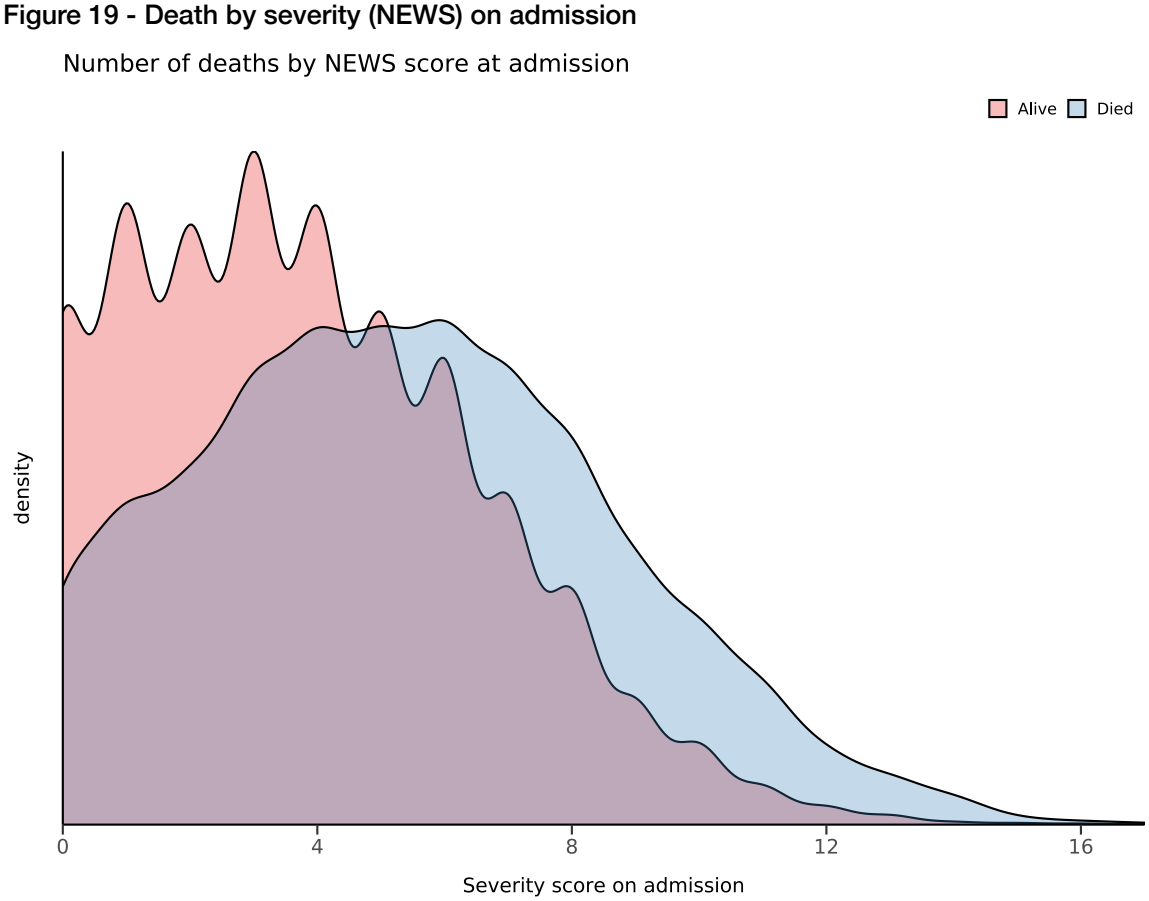


Figure 20 - Death by severity (NEWS) on admission stratified by age

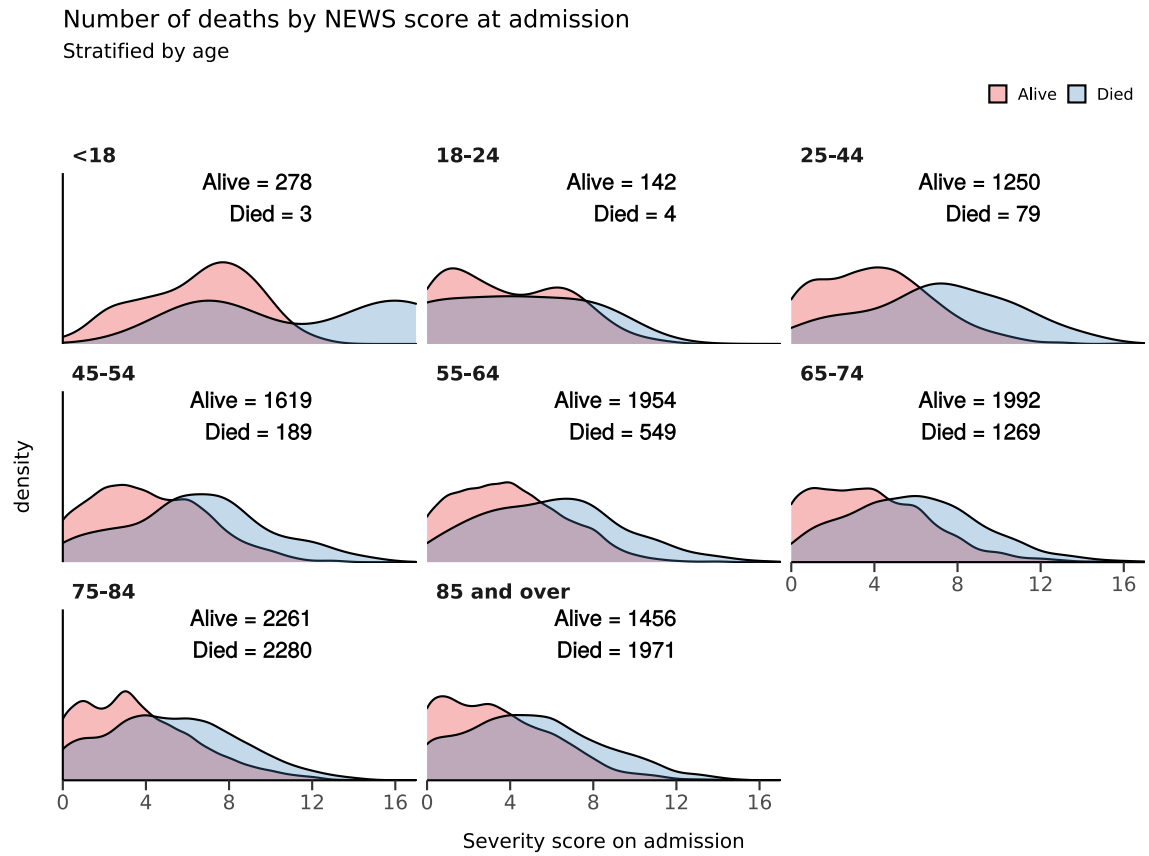
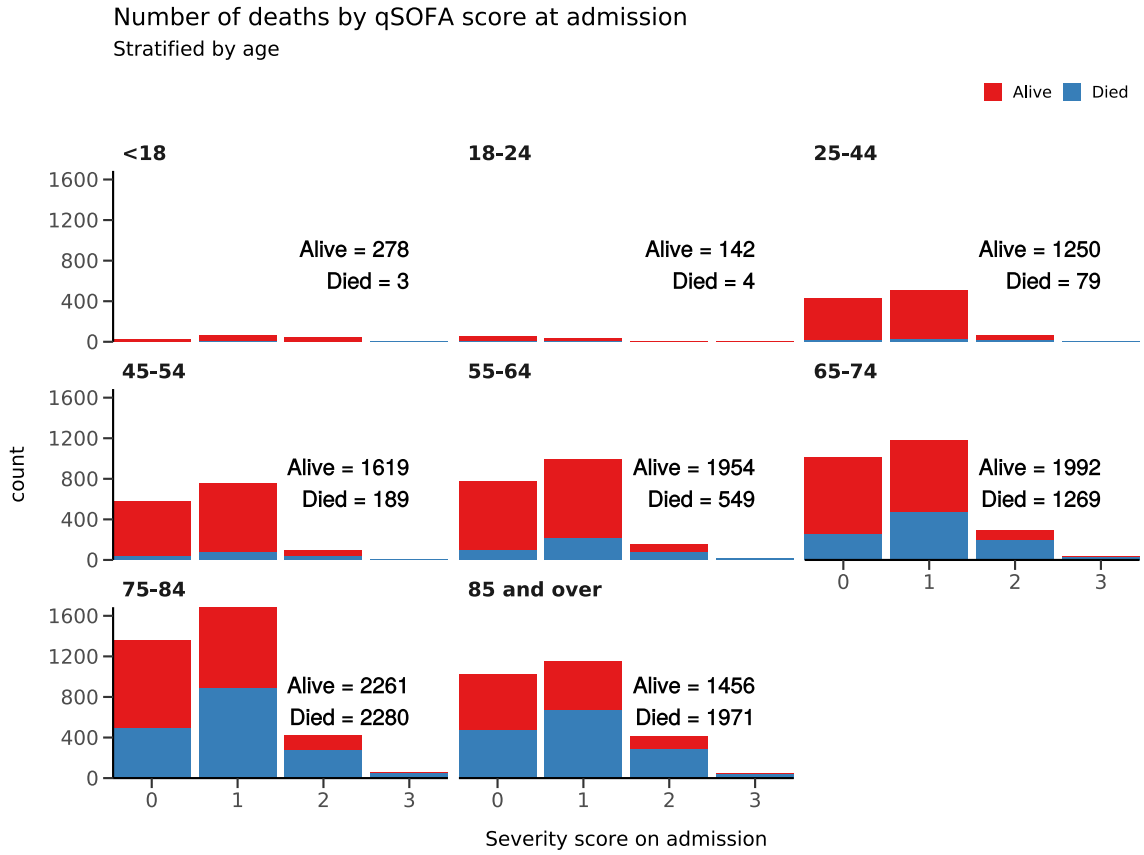


Figure 21 - Death by severity (qSOFA) on admission stratified by age



Healthcare workers

Healthcare worker		NO	YES	p
Total N (%)		21296 (94.9)	1149 (5.1)	
NEWS score on admission	Median (IQR)	4.0 (4.0)	4.0 (4.0)	0.381
Death	No	9120 (61.1)	718 (93.6)	<0.001
	Yes	5812 (38.9)	49 (6.4)	

Admission (detail)

Table 1

label	levels	all
Total N (%)		31060 (100.0)
age	Mean (SD)	68.8 (18.2)
sex	Male	15360 (49.5)
	Female	10481 (33.7)
	Not specified	48 (0.2)
	(Missing)	5171 (16.6)
healthwork_erterm	YES	1149 (3.7)
	NO	21296 (68.6)
	N/A	2558 (8.2)
	(Missing)	6057 (19.5)

label	levels	all
labwork_erterm	YES	67 (0.2)
	NO	19834 (63.9)
	N/A	2352 (7.6)
	(Missing)	8807 (28.4)
Onset to admission (days)	Mean (SD)	22.6 (2476.2)
hooccur	Yes-facility is a study site	417 (1.3)
	Yes-facility is not a study site	1354 (4.4)
	No	21678 (69.8)
	N/A	707 (2.3)
	(Missing)	6904 (22.2)
travel_erterm	Yes	734 (2.4)
	No	17049 (54.9)
	N/A	3205 (10.3)
	(Missing)	10072 (32.4)
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	1 (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	6 (0.0)
	Italy	87 (0.3)
	Japan	5 (0.0)
	Kenya	1 (0.0)
	Kuwait	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	176 (0.6)

label	levels	all
	Swaziland	1 (0.0)
	Switzerland	8 (0.0)
	Thailand	8 (0.0)
	Turkey	6 (0.0)
	United Arab Emirates	9 (0.0)
	United Kingdom	108 (0.3)
	Yemen	1 (0.0)
	Zimbabwe	1 (0.0)
	(Missing)	30391 (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	4 (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 (0.0)
	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)

label	levels	all
	Vietnam	1 (0.0)
	(Missing)	30975 (99.7)
animal_eryn	Yes	107 (0.3)
	No	8111 (26.1)
	Unknown	11701 (37.7)
	N/A	1330 (4.3)
	(Missing)	9811 (31.6)
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 (1.9)
	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	4 (3.8)
	Cats	2 (1.9)
	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	5 (4.8)
	Dog	12 (11.5)
	DOG	3 (2.9)
	DOG FAMILY PET	1 (1.0)
	Dog Pet	1 (1.0)
	Dog, domestic animla living in their home.	1 (1.0)
	Dogs	1 (1.0)
	dogs and cats	1 (1.0)
	Dogs at home	1 (1.0)

label	levels	all
	domestic	1 (1.0)
	Domestic pet dog	1 (1.0)
	DOMESTIC ANIMAL	2 (1.9)
	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 (4.8)
	Domestic Pet (Dog)	6 (5.8)
	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 (1.9)
	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 (1.9)
	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)

label	levels	all
	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 (%)		31060 (100.0)
fever_ceoccur_v2	YES	15412 (49.6)
	NO	6443 (20.7)
	Unknown	1241 (4.0)
	(Missing)	7964 (25.6)
cough_ceoccur_v2	YES	15721 (50.6)
	NO	6001 (19.3)
	Unknown	1351 (4.3)
	(Missing)	7987 (25.7)
coughsput_ceoccur_v2	YES	4664 (15.0)
	NO	13309 (42.8)
	Unknown	4935 (15.9)
	(Missing)	8152 (26.2)
coughhb_ceoccur_v2	YES	598 (1.9)
	NO	16959 (54.6)
	Unknown	5313 (17.1)
	(Missing)	8190 (26.4)
sorethroat_ceoccur_v2	YES	1591 (5.1)
	NO	14884 (47.9)
	Unknown	6427 (20.7)
	(Missing)	8158 (26.3)
runnynose_ceoccur_v2	YES	555 (1.8)
	NO	15558 (50.1)
	Unknown	6785 (21.8)
	(Missing)	8162 (26.3)
earpain_ceoccur_v2	YES	91 (0.3)
	NO	16013 (51.6)

Stratified: all		all
	Unknown	6786 (21.8)
	(Missing)	8170 (26.3)
wheeze_ceoccur_v2	YES	1846 (5.9)
	NO	15617 (50.3)
	Unknown	5442 (17.5)
	(Missing)	8155 (26.3)
chestpain_ceoccur_v2	YES	2663 (8.6)
	NO	15746 (50.7)
	Unknown	4499 (14.5)
	(Missing)	8152 (26.2)
myalgia_ceoccur_v2	YES	3382 (10.9)
	NO	13415 (43.2)
	Unknown	6092 (19.6)
	(Missing)	8171 (26.3)
jointpain_ceoccur_v2	YES	1180 (3.8)
	NO	14959 (48.2)
	Unknown	6719 (21.6)
	(Missing)	8202 (26.4)
fatigue_ceoccur_v2	YES	8070 (26.0)
	NO	9858 (31.7)
	Unknown	4970 (16.0)
	(Missing)	8162 (26.3)
shortbreath_ceoccur_v2	YES	15062 (48.5)
	NO	6211 (20.0)
	Unknown	1809 (5.8)
	(Missing)	7978 (25.7)
lowerchest_ceoccur_v2	YES	226 (0.7)
	NO	15189 (48.9)
	Unknown	7463 (24.0)
	(Missing)	8182 (26.3)
headache_ceoccur_v2	YES	2044 (6.6)
	NO	14670 (47.2)
	Unknown	6169 (19.9)
	(Missing)	8177 (26.3)
confusion_ceoccur_v2	YES	5328 (17.2)
	NO	14224 (45.8)

Stratified: all		all
	Unknown	3380 (10.9)
	(Missing)	8128 (26.2)
seizures_cecoccur_v2	YES	321 (1.0)
	NO	18106 (58.3)
	Unknown	4451 (14.3)
	(Missing)	8182 (26.3)
abdopain_ceoccur_v2	YES	1870 (6.0)
	NO	16473 (53.0)
	Unknown	4566 (14.7)
	(Missing)	8151 (26.2)
vomit_ceoccur_v2	YES	3771 (12.1)
	NO	15353 (49.4)
	Unknown	3804 (12.2)
	(Missing)	8132 (26.2)
diarrhoea_ceoccur_v2	YES	3821 (12.3)
	NO	15232 (49.0)
	Unknown	3871 (12.5)
	(Missing)	8136 (26.2)
conjunct_ceoccur_v2	YES	67 (0.2)
	NO	17050 (54.9)
	Unknown	5761 (18.5)
	(Missing)	8182 (26.3)
rash_ceoccur_v2	YES	287 (0.9)
	NO	17210 (55.4)
	Unknown	5383 (17.3)
	(Missing)	8180 (26.3)
skinulcers_ceoccur_v2	YES	430 (1.4)
	NO	17050 (54.9)
	Unknown	5399 (17.4)
	(Missing)	8181 (26.3)
lymp_ceoccur_v2	YES	110 (0.4)
	NO	17045 (54.9)
	Unknown	5713 (18.4)
	(Missing)	8192 (26.4)
bleed_ceoccur_v2	YES	232 (0.7)
	NO	17895 (57.6)

Stratified: all		all
	Unknown	4738 (15.3)
	(Missing)	8195 (26.4)
bleed_ceterm_v2	YES	353 (1.1)
	NO	15561 (50.1)
	Unknown	4381 (14.1)
	(Missing)	10765 (34.7)

Comorbidity (detail)

Table 3

Stratified: all		all
Total N (%)		31060 (100.0)
chrincard	YES	6870 (22.1)
	NO	15219 (49.0)
	Unknown	1019 (3.3)
	(Missing)	7952 (25.6)
chronicpul_mhyn	YES	3955 (12.7)
	NO	18029 (58.0)
	Unknown	1105 (3.6)
	(Missing)	7971 (25.7)
asthma_mhyn	YES	3089 (9.9)
	NO	18794 (60.5)
	Unknown	1180 (3.8)
	(Missing)	7997 (25.7)
renal_mhyn	YES	3579 (11.5)
	NO	18264 (58.8)
	Unknown	1216 (3.9)
	(Missing)	8001 (25.8)
modliv	YES	393 (1.3)
	NO	21260 (68.4)
	Unknown	1391 (4.5)
	(Missing)	8016 (25.8)
mildliver	YES	338 (1.1)
	NO	21275 (68.5)
	Unknown	1429 (4.6)
	(Missing)	8018 (25.8)
chronicneu_mhyn	YES	2515 (8.1)

Stratified: all		all
	NO	19183 (61.8)
	Unknown	1350 (4.3)
	(Missing)	8012 (25.8)
malignantneo_mhyn	YES	2143 (6.9)
	NO	19509 (62.8)
	Unknown	1408 (4.5)
	(Missing)	8000 (25.8)
chronichaemo_mhyn	YES	872 (2.8)
	NO	20734 (66.8)
	Unknown	1424 (4.6)
	(Missing)	8030 (25.9)
aidshiv_mhyn	YES	97 (0.3)
	NO	21406 (68.9)
	Unknown	1545 (5.0)
	(Missing)	8012 (25.8)
obesity_mhyn	YES	2140 (6.9)
	NO	17865 (57.5)
	Unknown	2902 (9.3)
	(Missing)	8153 (26.2)
diabetescom_mhyn	YES	1612 (5.2)
	NO	20183 (65.0)
	Unknown	1268 (4.1)
	(Missing)	7997 (25.7)
diabetes_mhyn	YES	4409 (14.2)
	NO	17476 (56.3)
	Unknown	1193 (3.8)
	(Missing)	7982 (25.7)
rheumatologic_mhyn	YES	2142 (6.9)
	NO	19416 (62.5)
	Unknown	1446 (4.7)
	(Missing)	8056 (25.9)
dementia_mhyn	YES	3056 (9.8)
	NO	18726 (60.3)
	Unknown	1269 (4.1)
	(Missing)	8009 (25.8)
malnutrition_mhyn	YES	500 (1.6)

Stratified: all		all
	NO	20243 (65.2)
	Unknown	2217 (7.1)
	(Missing)	8100 (26.1)
Smoking	YES	1111 (3.6)
	NO	16140 (52.0)
	(Missing)	13809 (44.5)