Dynamic CO-CIN report to SAGE and NERVTAG

[OFFICIAL-SENSITIVE PROTECT]

Dynamic content updated: 2020-04-22 18:03:02.

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 22 April 2020, CO-CIN has recruited **21438 patients** with confirmed Coronavirus (Figure 1).

The CO-CIN dataset represents NA% (21438/133,495 have) of cases of confirmed Coronovirus cases in the UK, per the PHE daily reports (last updated 9am 22 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 742 had travelled abroad recently, and 4081 reported visiting or working in a hospital where COVID-19 cases are being managed.

The median age is 72 (range: 0-104), Male/Female 10098/6772.

The most common symptoms were cough (69%), fever (68%) and shortness of breath (66%) (Figure 3A). 601/15115 (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%). 9661/21438 (45%) of patients have reported no co morbidity. 74/1271 (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 (range: 1-201, n = 8928).
1277/9727 (13%) patients required high-flow oxygen after day 1 of treatment.

Currently 3748 patient(s) have died and 2482 required ICU. 5562 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.

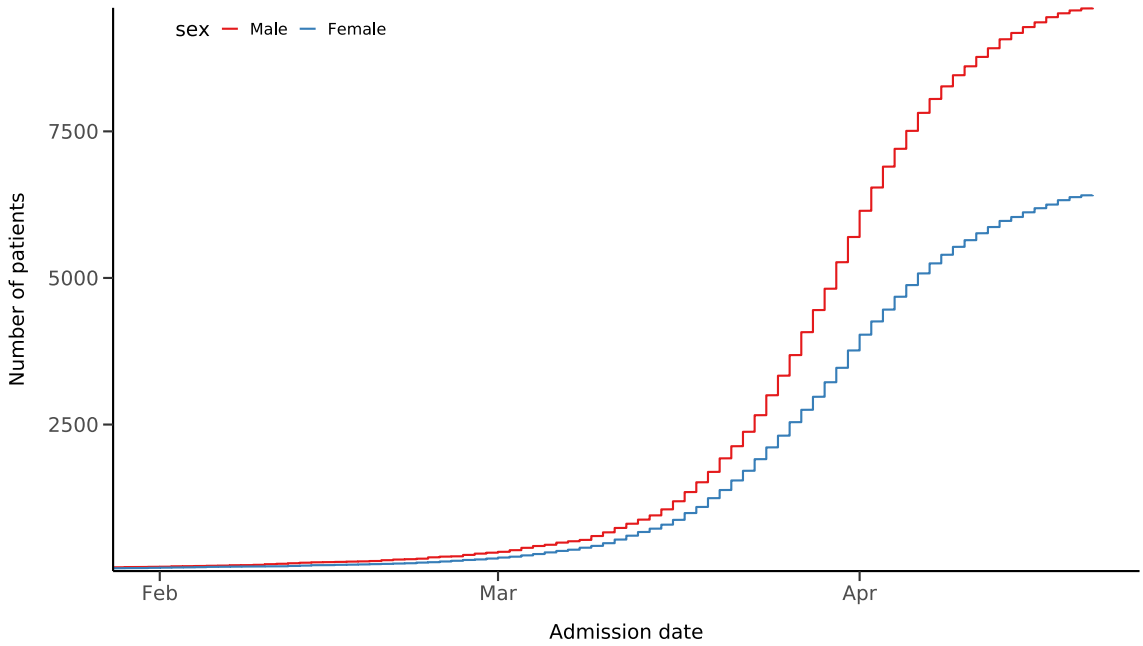
Prof Calum Semple, Professor in Child Health and Outbreak Medicine, University of Liverpool.
Dr Annemarie Docherty, Academic Consultant Intensive Care University of Edinburgh.
Dr Chris Green, Academic Consultant Infectious Disease University of Birmingham.
Prof Ewen Harrison, Director Centre for Medical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

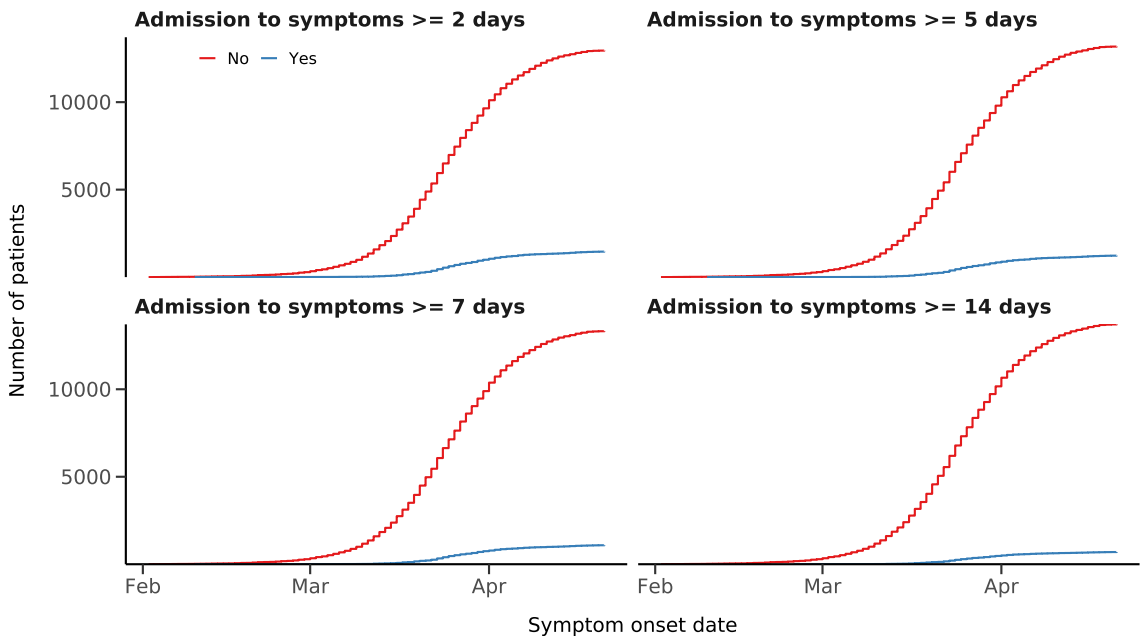
Hospital admission with COVID-19 by sex

Figure 1A



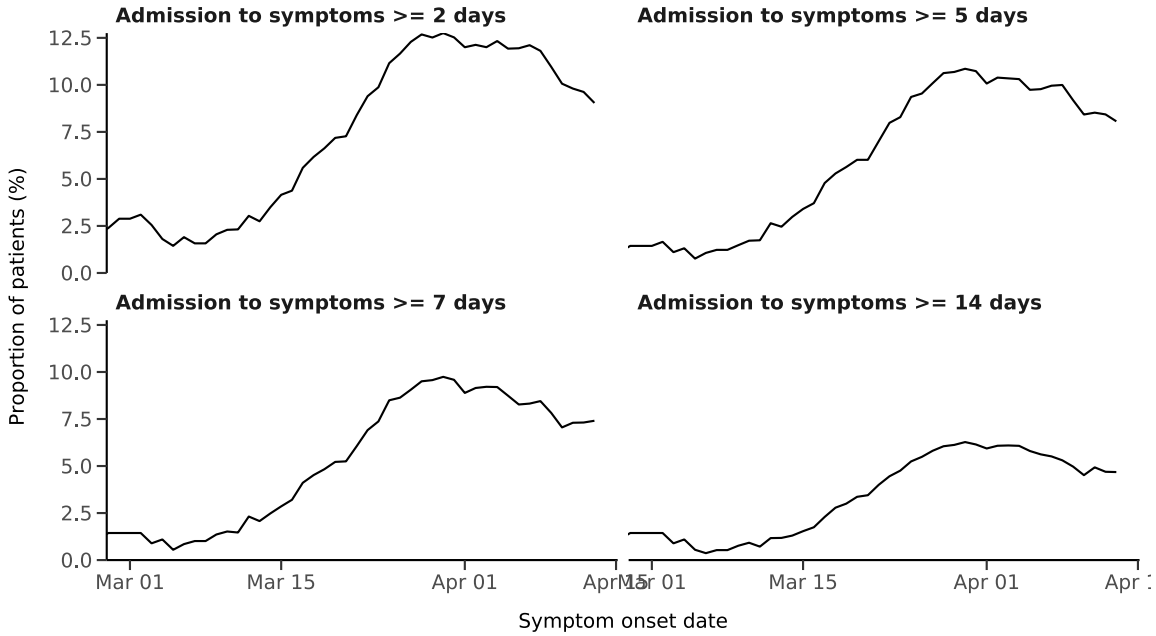
Number with symptom onset occuring after admission to hospital

Figure 1B



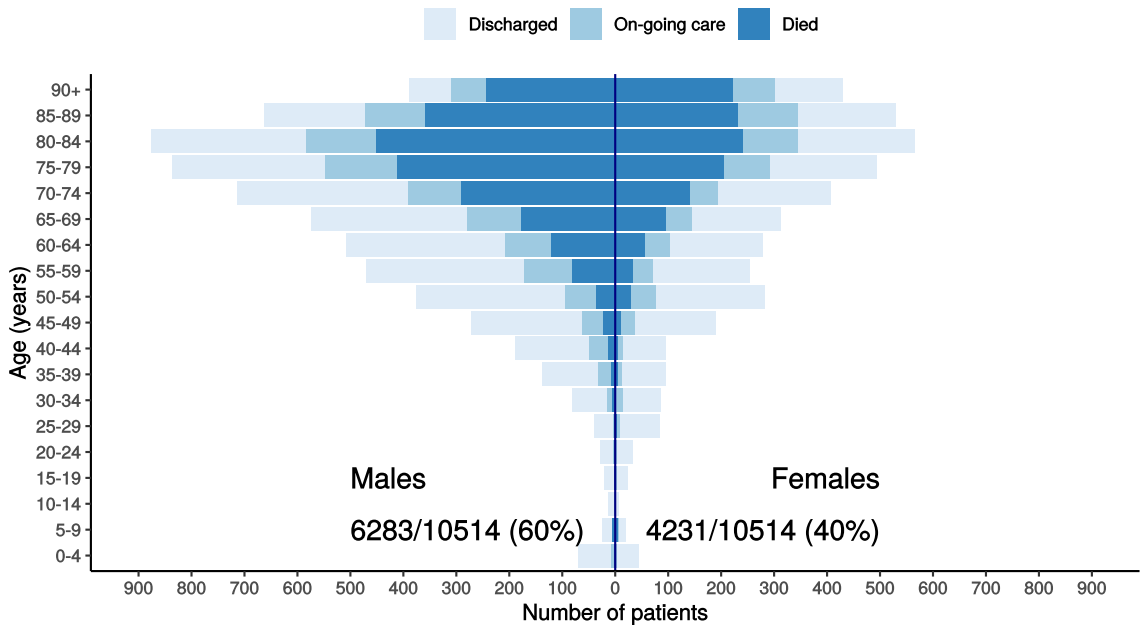
Proportion with symptom onset occuring after hospital admission

Figure 1C - 7-day rolling percentage. n = 14411



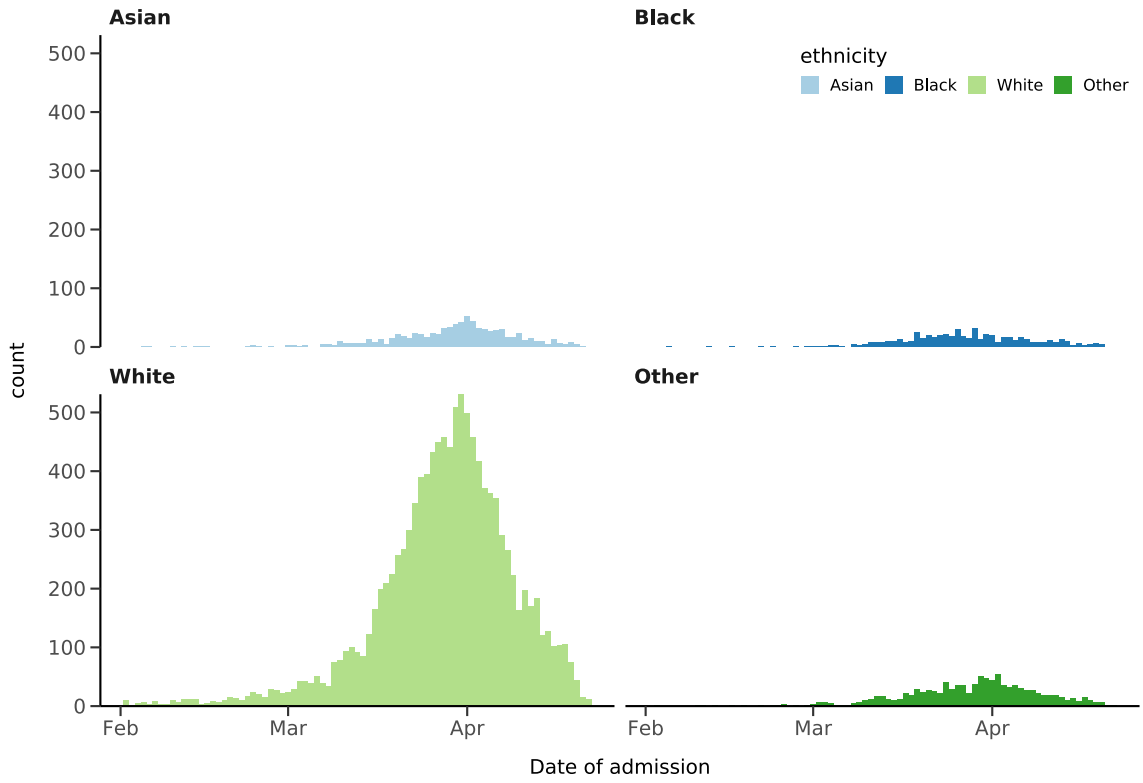
Patients with outcome stratified by age, and sex

Figure 1D



Hospital admission with COVID-19 by ethnicity

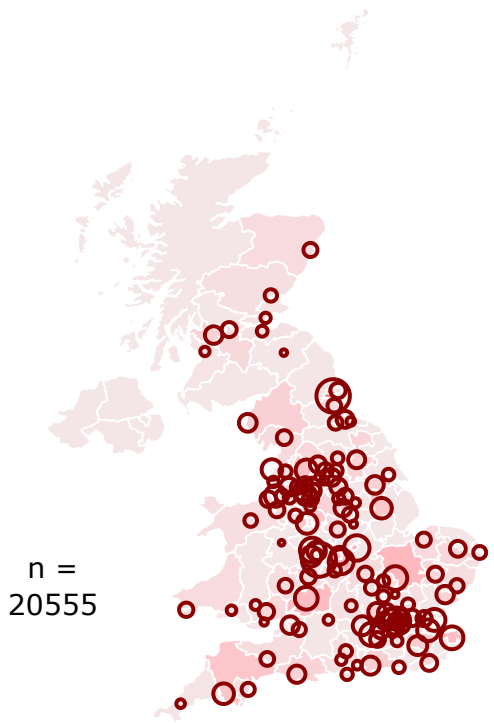
Figure 1E



Location by CCG / Healthboard

Figure 2

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

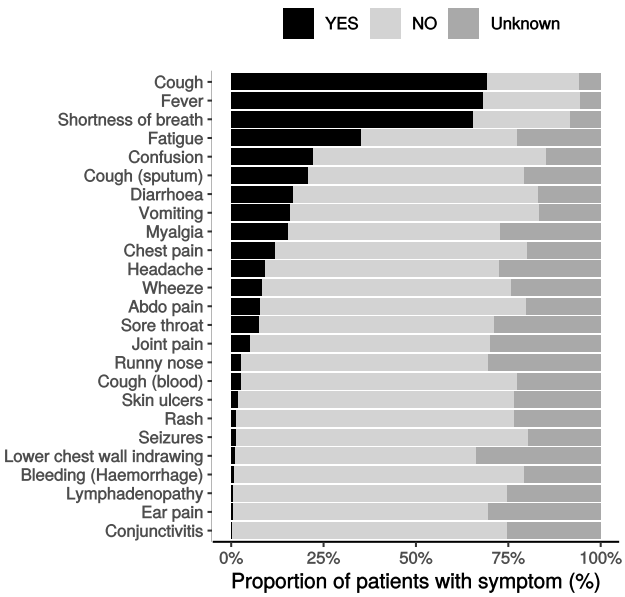


Symptoms and comorbidity

Figure 3A

Symptoms on presentation to hospital (% patients, n = 14939)

Figure 3A



Comorbidity (% patients, n = 15028)

Figure 3B

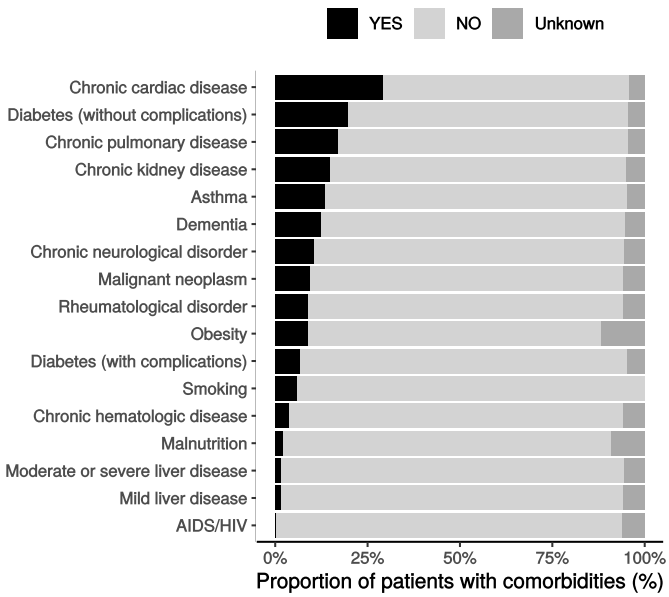
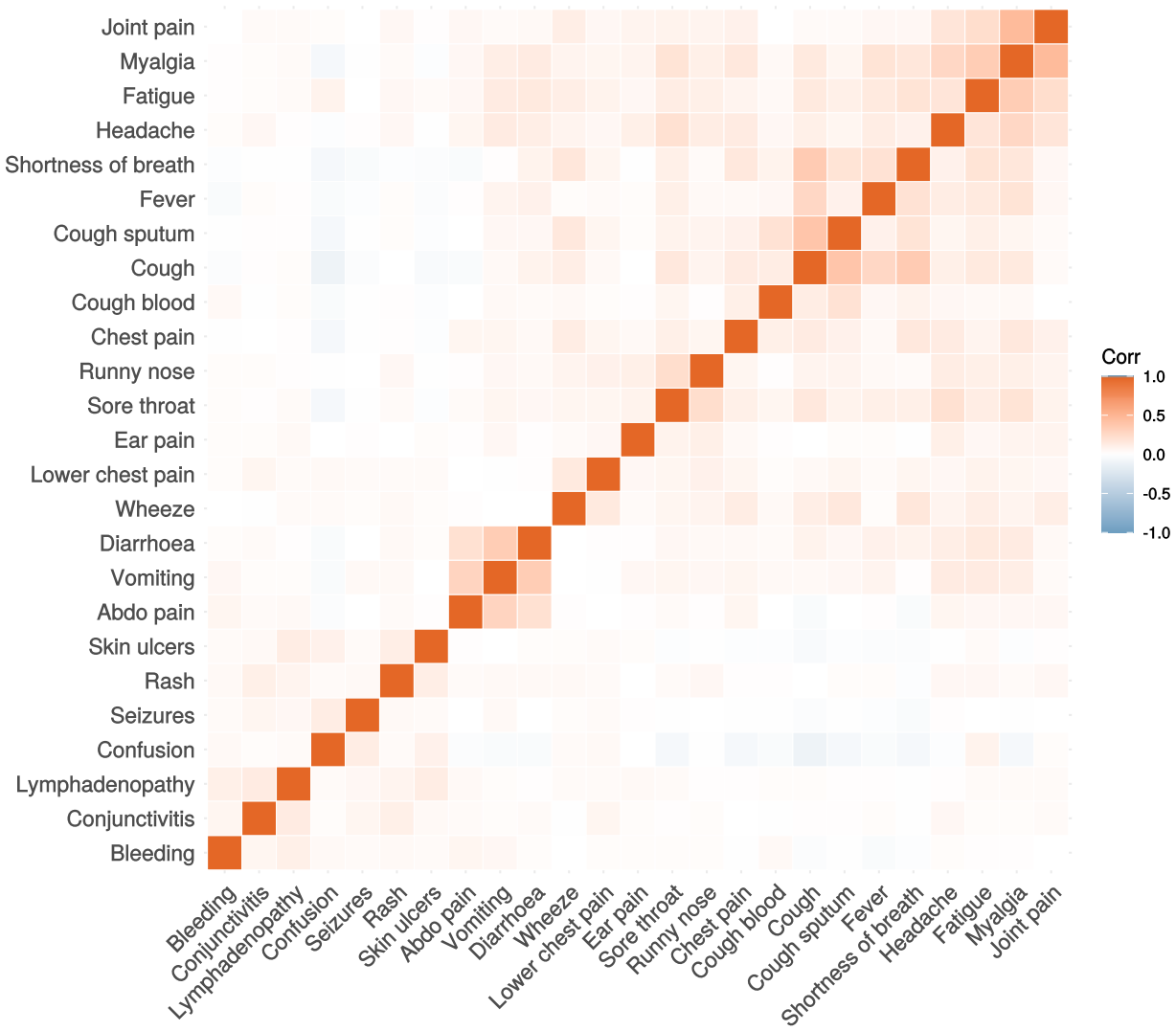


Figure 3C

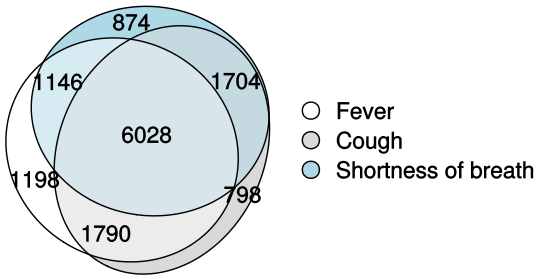
Correlation of symtpoms in all pages. Note clusters, top right to bottom left, flu-like, coryzal, abdominal, respiratory, neurocutaneous.



Symptoms (diagnostic criteria)

Figure 4A

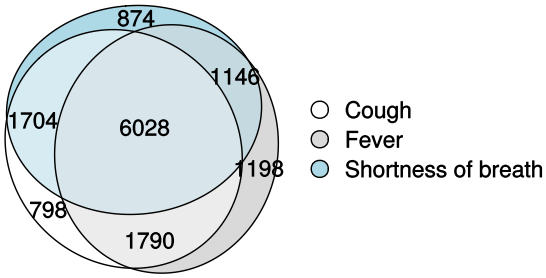
n = 14939



Symptoms (most common)

Figure 4B

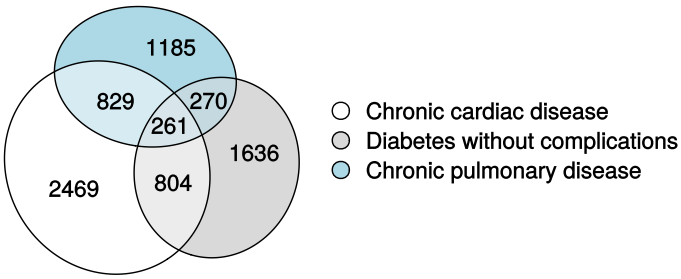
n = 14939



Comorbidity (most common)

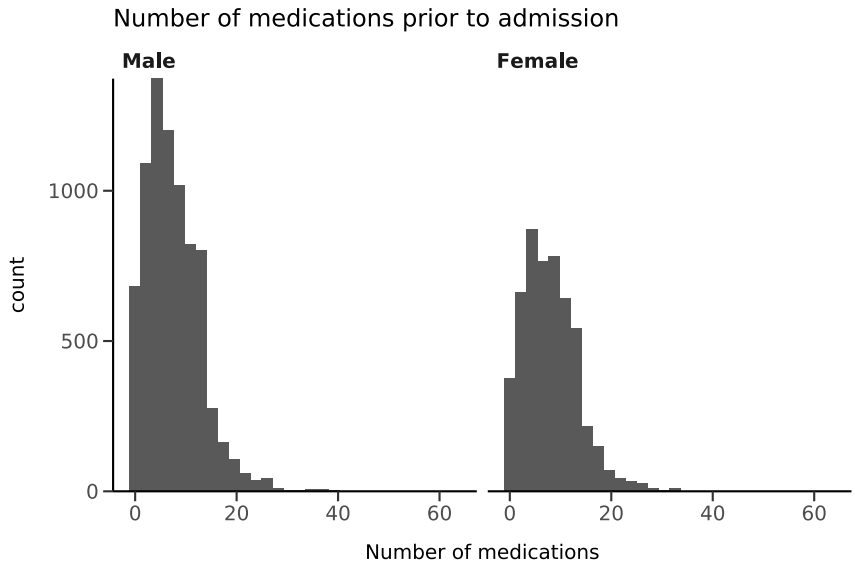
Figure 4C

n = 15028



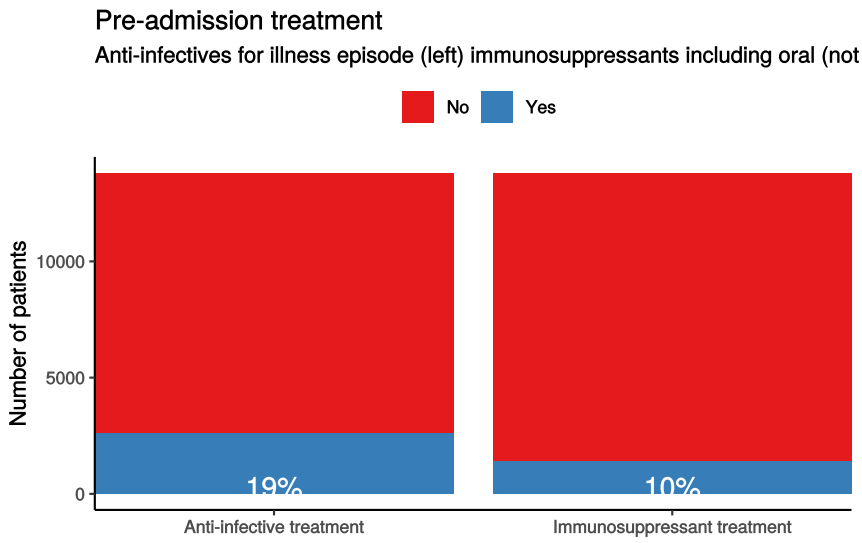
Medication prior to illness

Figure 5



Preadmission treatment

Figure 6



Patient flow

Figure 7A - All patients

N = 15292

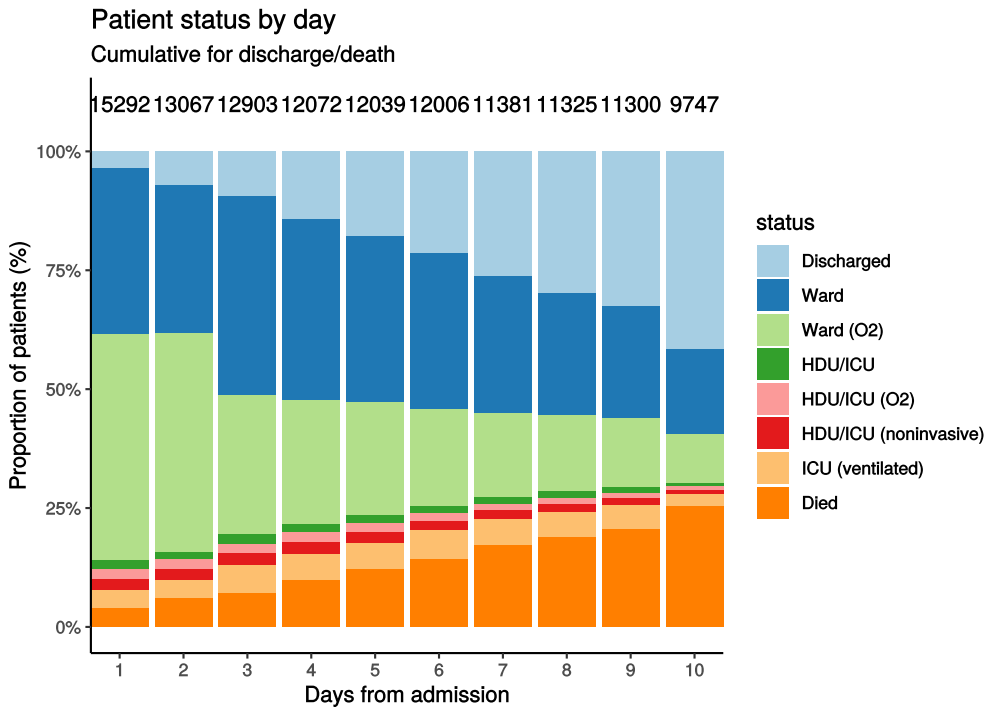
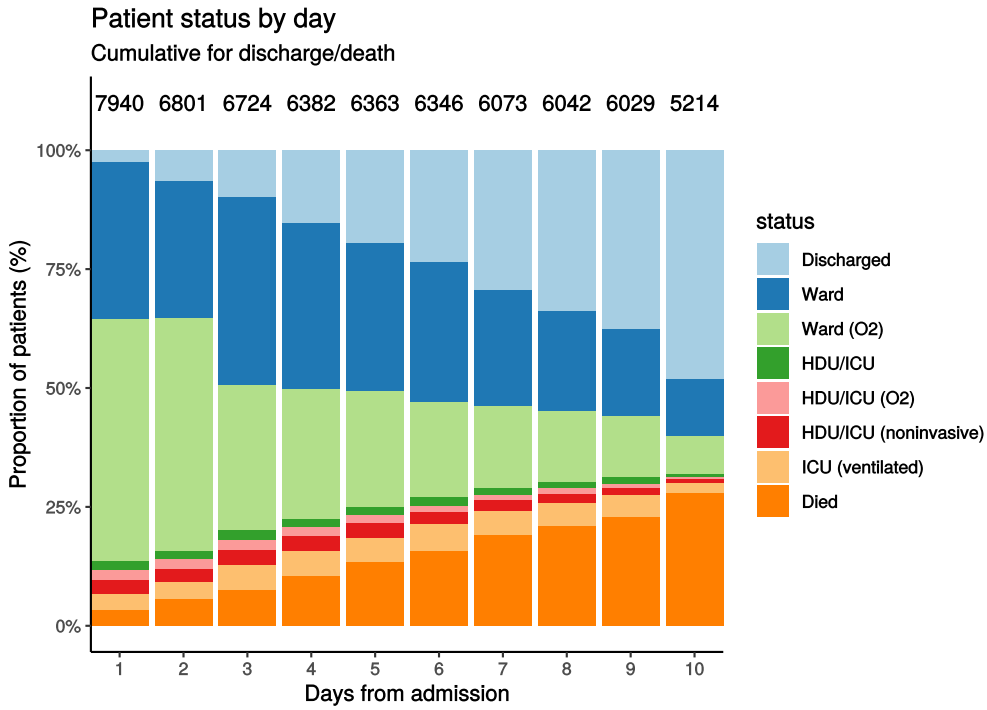


Figure 7B - Patients admitted >=14 days and <=28 days ago

N = 7940



Oxygen requirement

Figure 8A - All patients

N = 13955

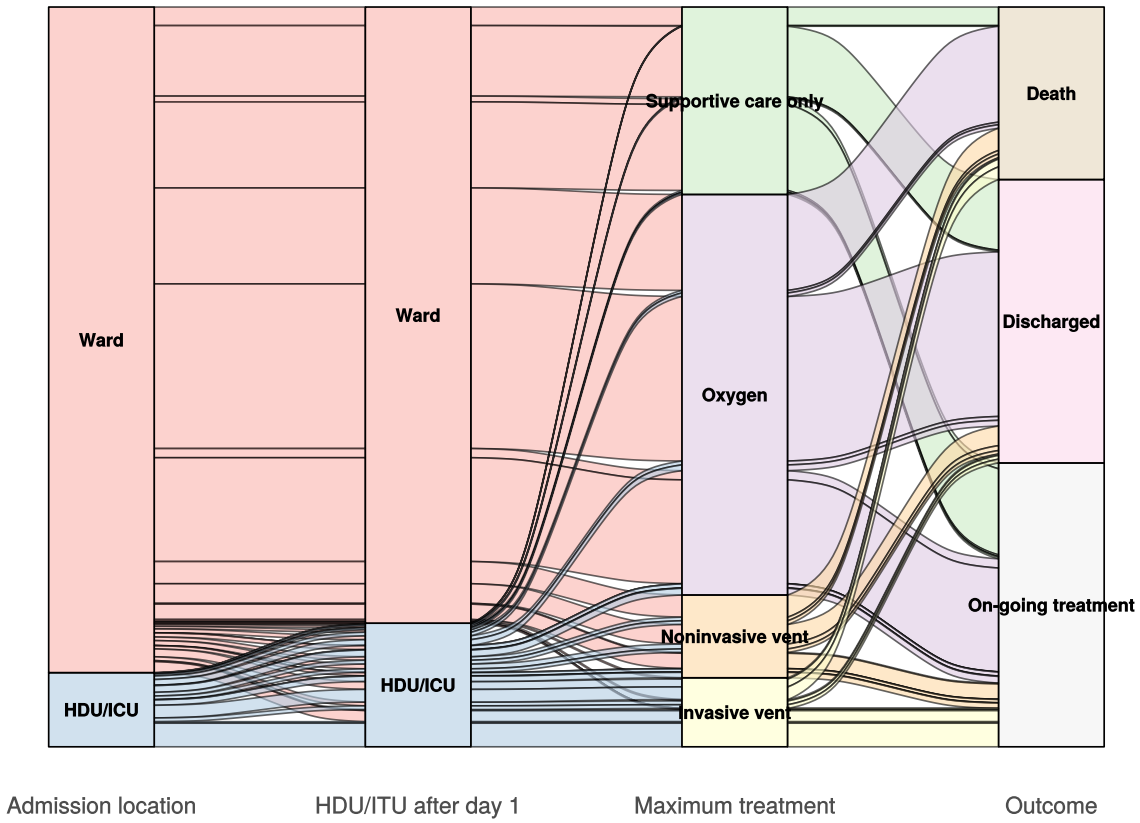
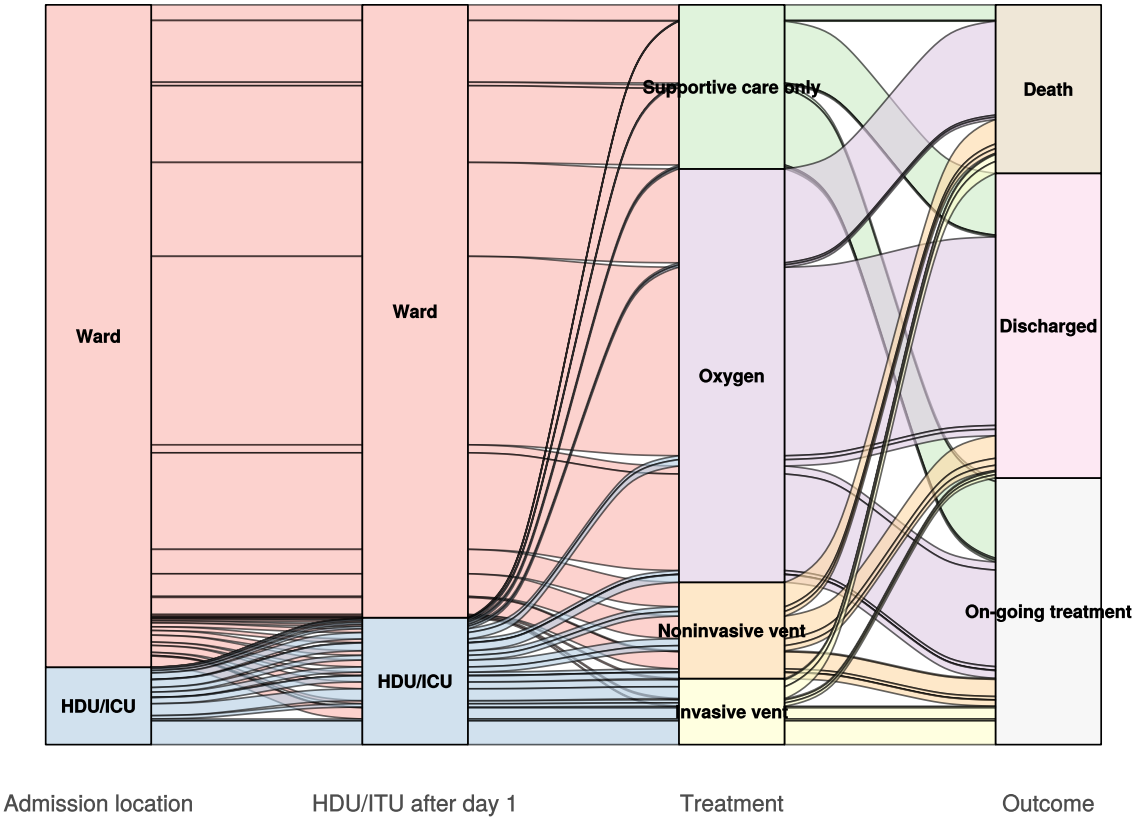


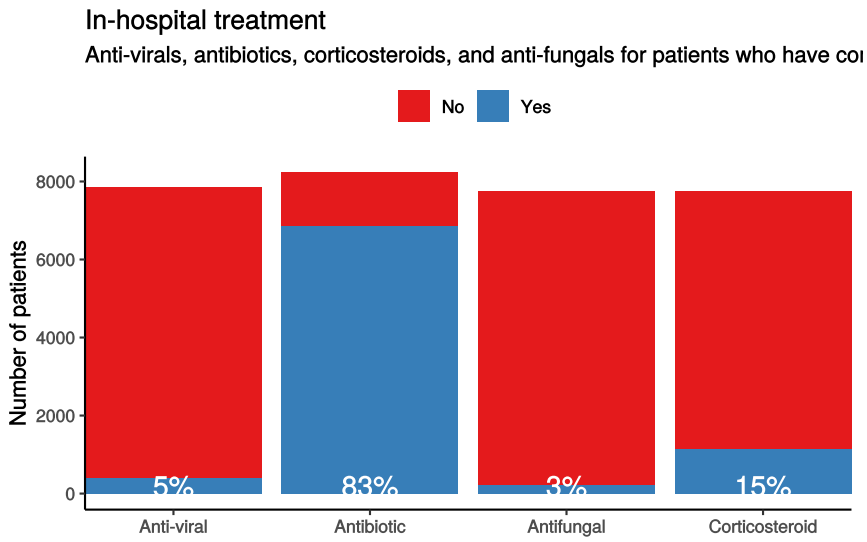
Figure 8B - Patients admitted >=14 days and <=28 days ago

N = 7314



In-hospital medical treatment

Figure 9

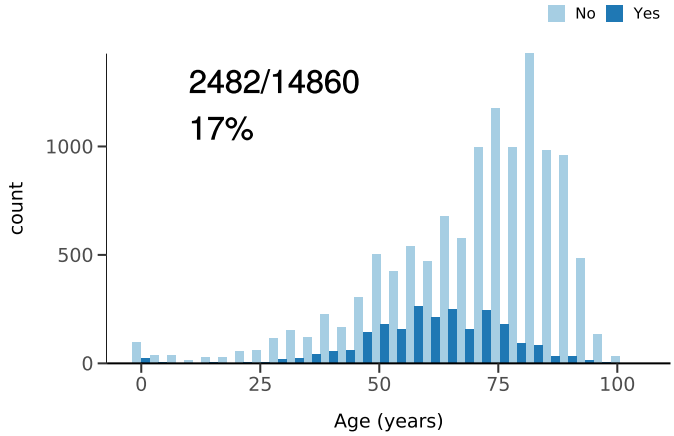


Treatment

Figure 10

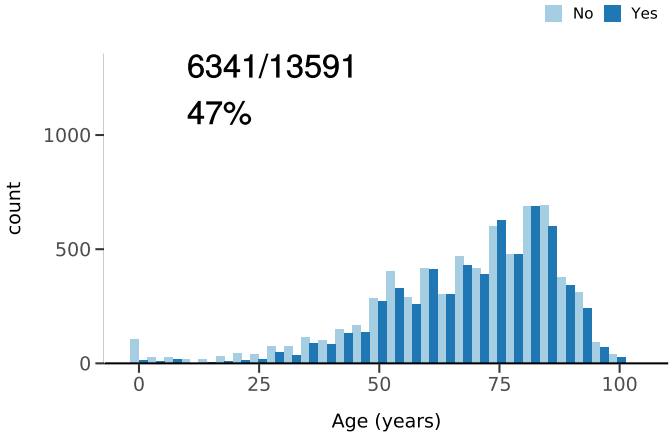
ICU/HDU admission

Figure 10A



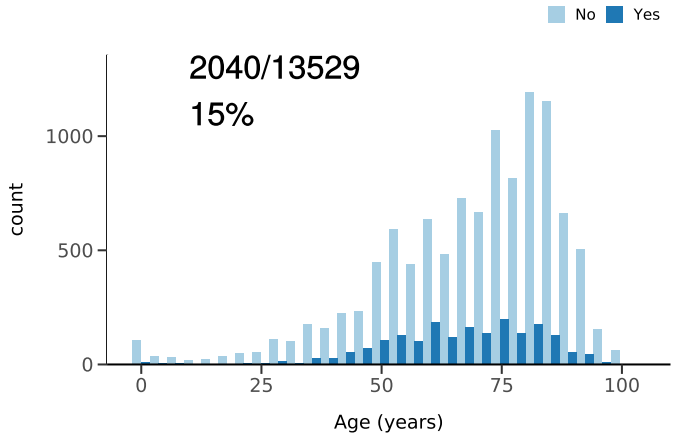
High flow oxygen

Figure 10B



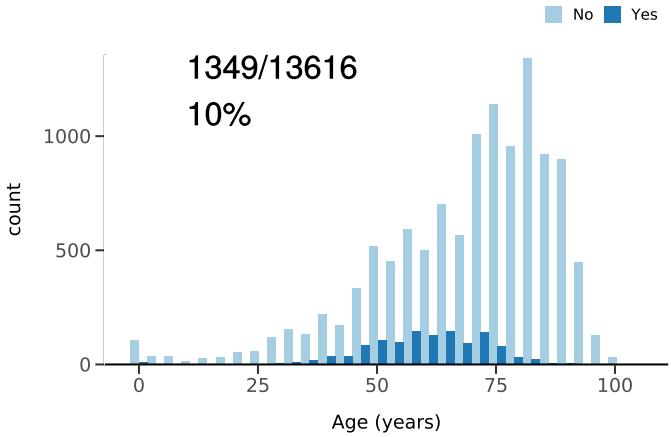
Noninvasive ventilation

Figure 10C



Invasive ventilation

Figure 10D

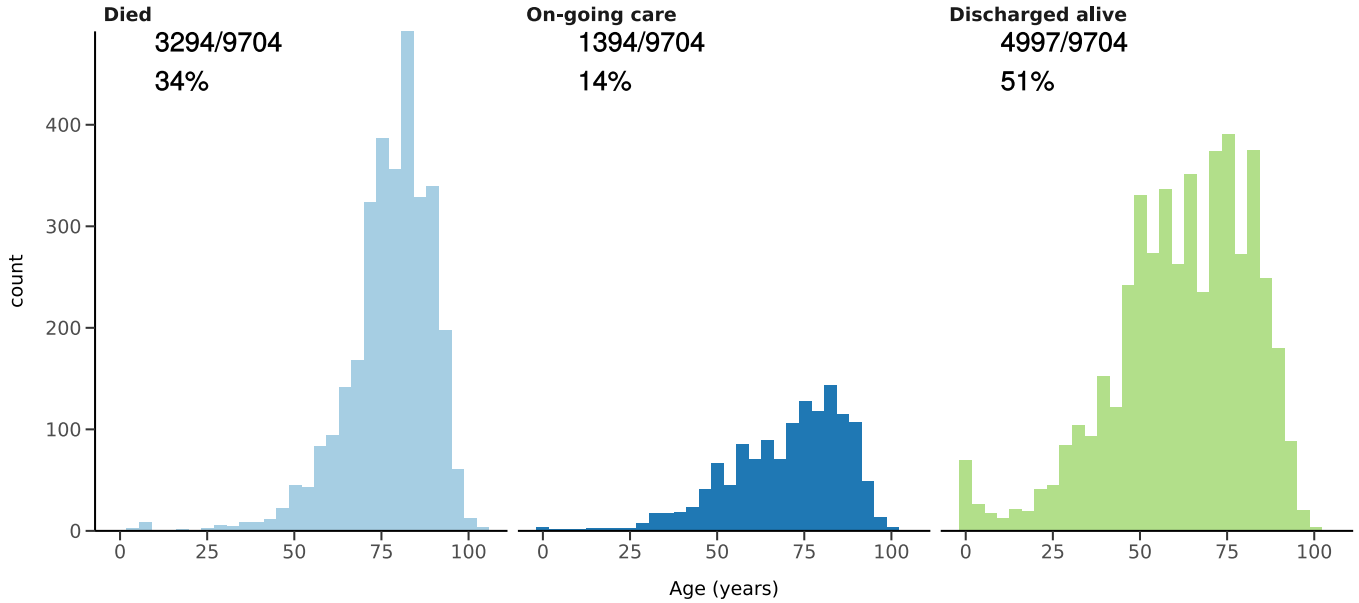


Status in patients admitted >=14 days from today

Figure 11

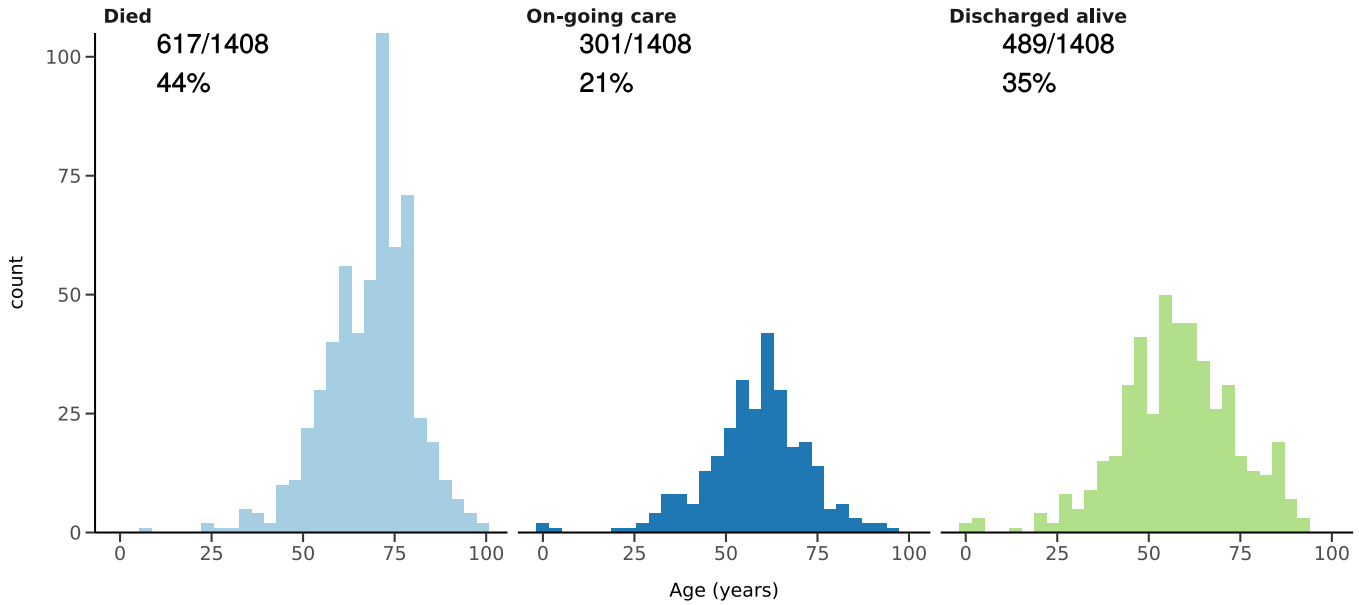
All: status in patients admitted >=14 days ago

Figure 11A



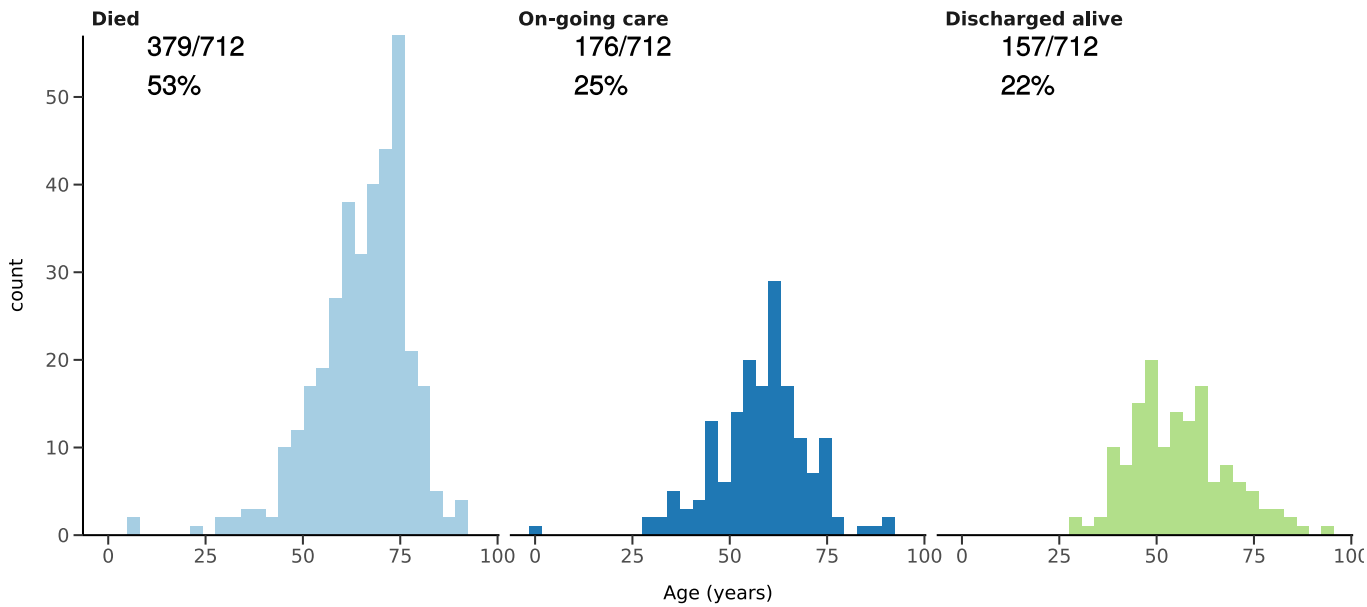
ICU/HDU admissions: status in patients admitted >=14 days ago

Figure 11B



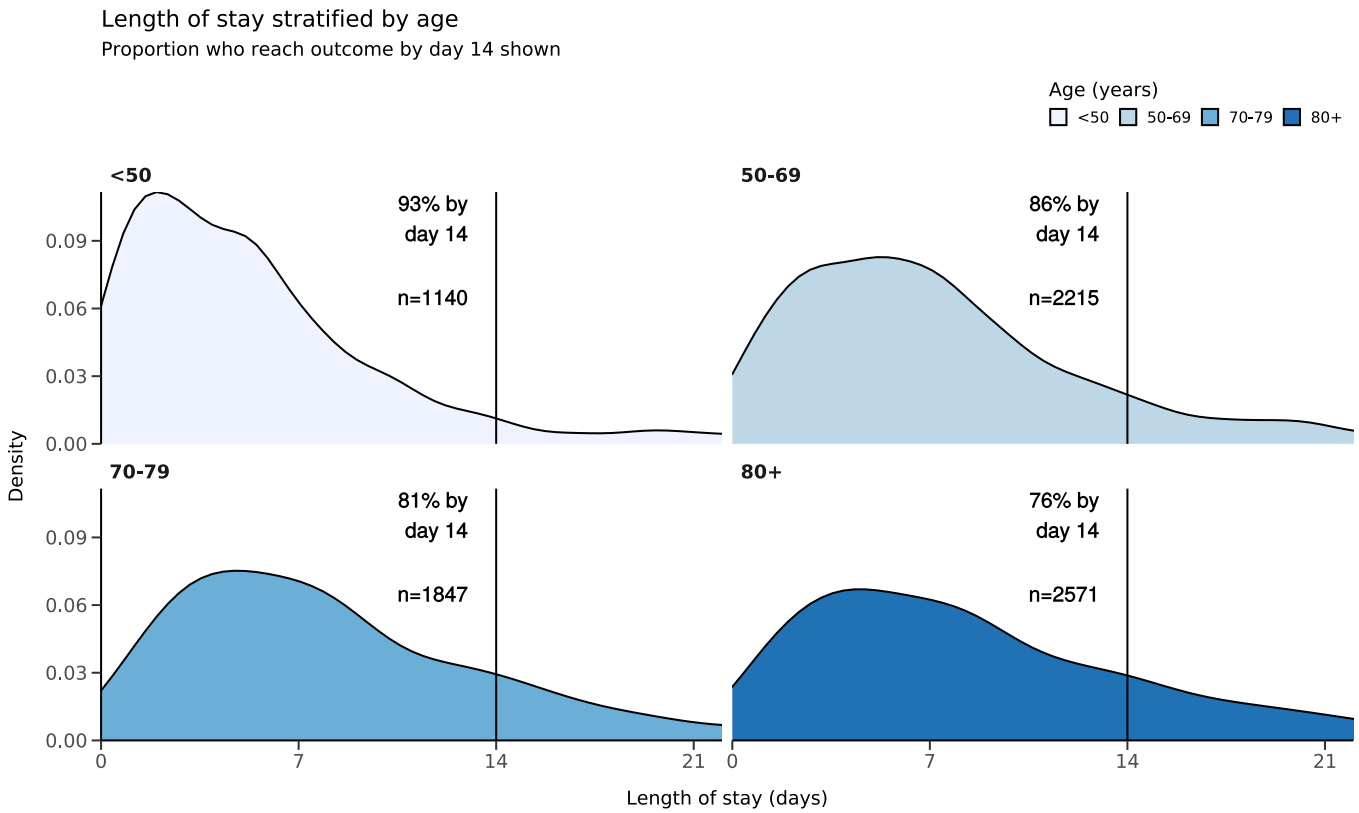
Invasive ventilation: status in patients admitted >=14 days ago

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	1161 (93.6)	80 (6.4)	•	•
	50-69	1787 (76.0)	564 (24.0)	4.58 (3.60-5.89, p<0.001)	4.14 (3.16-5.52, p<0.001)
	70-79	1009 (51.9)	936 (48.1)	13.46 (10.62-17.29, p<0.001)	11.01 (8.38-14.70, p<0.001)
	80+	1168 (42.7)	1566 (57.3)	19.46 (15.42-24.88, p<0.001)	15.52 (11.81-20.72, p<0.001)
Sex at Birth	Male	3073 (59.4)	2101 (40.6)	•	•
	Female	2267 (65.6)	1187 (34.4)	0.77 (0.70-0.84, p<0.001)	0.70 (0.62-0.79, p<0.001)
Chronic cardiac disease	NO	3857 (69.0)	1736 (31.0)	•	•
	YES	1169 (48.8)	1226 (51.2)	2.33 (2.11-2.57, p<0.001)	1.21 (1.07-1.37, p=0.002)
Chronic pulmonary disease	NO	4310 (66.0)	2216 (34.0)	•	•
	YES	691 (48.7)	729 (51.3)	2.05 (1.83-2.30, p<0.001)	1.41 (1.22-1.63, p<0.001)
Chronic neurological disorder	NO	4531 (64.5)	2497 (35.5)	•	•
	YES	417 (50.8)	404 (49.2)	1.76 (1.52-2.03, p<0.001)	1.41 (1.18-1.69, p<0.001)
Chronic hematologic disease	NO	4765 (63.7)	2720 (36.3)	•	•
	YES	166 (48.5)	176 (51.5)	1.86 (1.49-2.31, p<0.001)	1.39 (1.05-1.83, p=0.020)
Chronic kidney disease	NO	4403 (66.2)	2252 (33.8)	•	•

Dependent: death		No	Yes	OR (univariable)	OR (multivariable)
	YES	571 (45.8)	675 (54.2)	2.31 (2.05-2.61, p<0.001)	1.50 (1.29-1.75, p<0.001)
Dementia	NO	4585 (66.2)	2337 (33.8)	•	•
	YES	376 (40.0)	564 (60.0)	2.94 (2.56-3.39, p<0.001)	1.60 (1.35-1.90, p<0.001)
Obesity	NO	4142 (63.4)	2393 (36.6)	•	•
	YES	439 (62.1)	268 (37.9)	1.06 (0.90-1.24, p=0.500)	1.67 (1.37-2.03, p<0.001)
Malignancy	NO	4528 (64.4)	2499 (35.6)	•	•
	YES	408 (51.6)	383 (48.4)	1.70 (1.47-1.97, p<0.001)	1.16 (0.97-1.39, p=0.114)

Number in dataframe = 13666, Number in model = 6636, Missing = 7030, AIC = 7389.9, C-statistic = 0.752, H&L = Chi-sq(8) 39.92 (p<0.001)

Figure 13 - Adjusted odds ratio plot

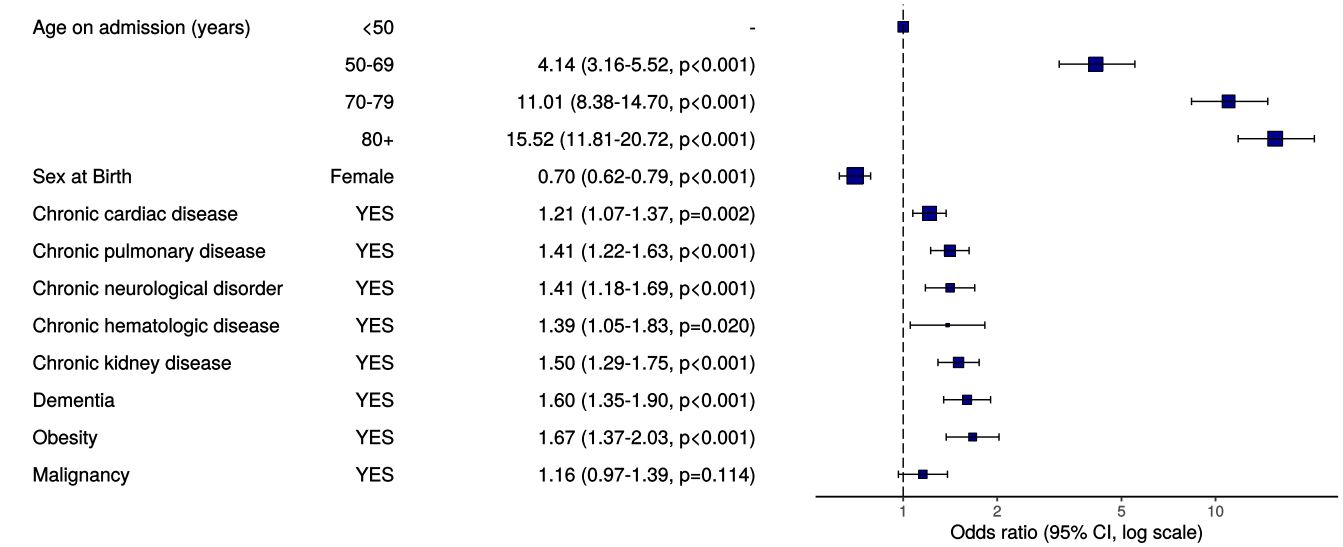
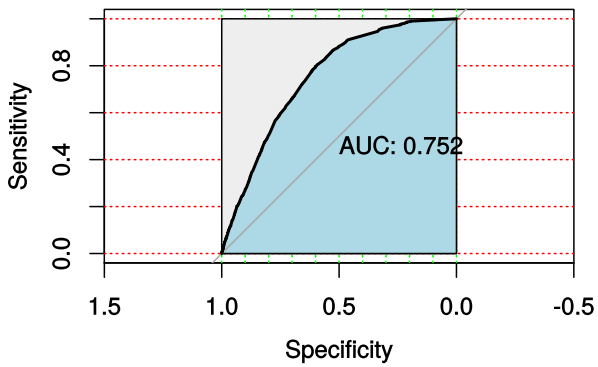


Figure 14 - ROC

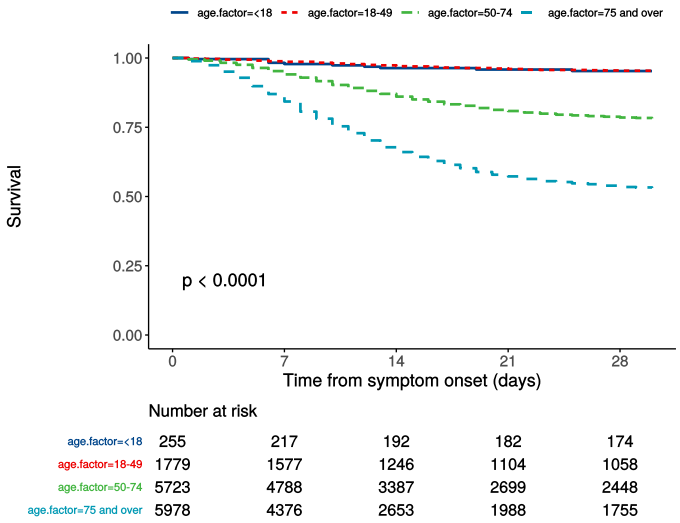


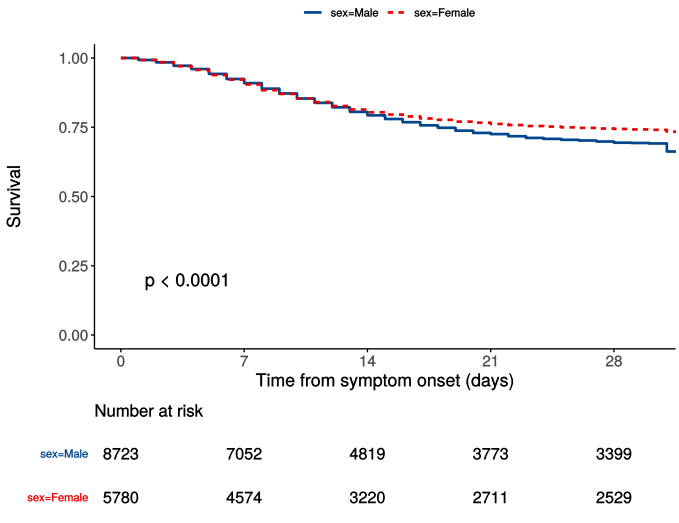
Survival models

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	2091 (15.0)	•	•
	50-69	4286 (30.7)	4.12 (3.23-5.24, p<0.001)	4.17 (3.02-5.75, p<0.001)
	70-79	3169 (22.7)	10.54 (8.33-13.34, p<0.001)	10.63 (7.75-14.57, p<0.001)
	80+	4431 (31.7)	14.46 (11.47-18.23, p<0.001)	13.77 (10.04-18.87, p<0.001)
Sex at Birth	Male	8677 (60.1)	•	•
	Female	5766 (39.9)	0.83 (0.77-0.89, p<0.001)	0.78 (0.71-0.86, p<0.001)
qSOFA score on admission	0	4185 (39.7)	•	•
	1	5084 (48.3)	1.50 (1.37-1.65, p<0.001)	1.59 (1.43-1.76, p<0.001)
	2	1148 (10.9)	2.86 (2.54-3.23, p<0.001)	2.64 (2.30-3.02, p<0.001)
	3	114 (1.1)	5.24 (4.04-6.80, p<0.001)	4.20 (3.11-5.67, p<0.001)
Symptomatic at presentation	No symptoms	267 (1.9)	•	•
	Symptoms	13610 (98.1)	1.12 (0.86-1.47, p=0.392)	•
Chronic kidney disease	NO	11141 (84.9)	•	•
	YES	1978 (15.1)	2.02 (1.85-2.20, p<0.001)	1.36 (1.22-1.52, p<0.001)
Moderate/severe liver disease	NO	12815 (98.4)	•	•
	YES	207 (1.6)	1.32 (1.01-1.73, p=0.042)	•
Chronic neurological disorder	NO	11589 (89.0)	•	•
	YES	1434 (11.0)	1.79 (1.62-1.97, p<0.001)	•
Malignancy	NO	11761 (90.4)	•	•

Dependent: Surv(time, status)		all	HR (univariable)	HR (multivariable)
	YES	1248 (9.6)	1.55 (1.39-1.73, p<0.001)	1.15 (1.00-1.32, p=0.046)
Chronic hematologic disease	NO	12477 (96.1)	•	•
	YES	506 (3.9)	1.58 (1.35-1.85, p<0.001)	•
Obesity	NO	10873 (89.9)	•	•
	YES	1224 (10.1)	0.96 (0.84-1.09, p=0.526)	1.45 (1.24-1.69, p<0.001)
Diabetes with complications	NO	12208 (93.0)	•	•
	YES	920 (7.0)	1.27 (1.11-1.45, p=0.001)	•
Rheumatologic disorder	NO	11753 (90.7)	•	•
	YES	1202 (9.3)	1.29 (1.15-1.45, p<0.001)	•
Dementia	NO	11384 (87.1)	•	•
	YES	1683 (12.9)	2.33 (2.13-2.55, p<0.001)	1.22 (1.08-1.38, p=0.001)
Malnutrition	NO	12209 (97.8)	•	•
	YES	273 (2.2)	1.80 (1.46-2.21, p<0.001)	•
smoking_mhyn_2levels	NO	10076 (94.0)	•	•
	YES	644 (6.0)	1.05 (0.88-1.25, p=0.573)	•
NA	NA	NA	NA	1.24 (1.12-1.36, p<0.001)

Number in dataframe = 14603, Number in model = 8584, Missing = 6019, Number of events = 1915, Concordance = 0.741 (SE = 0.005), R-squared = 0.150(Max possible = 0.979), Likelihood ratio test = 1395.658 (df = 12, p = 0.000)

Figure 16a - Multivariable Cox proportional hazards model

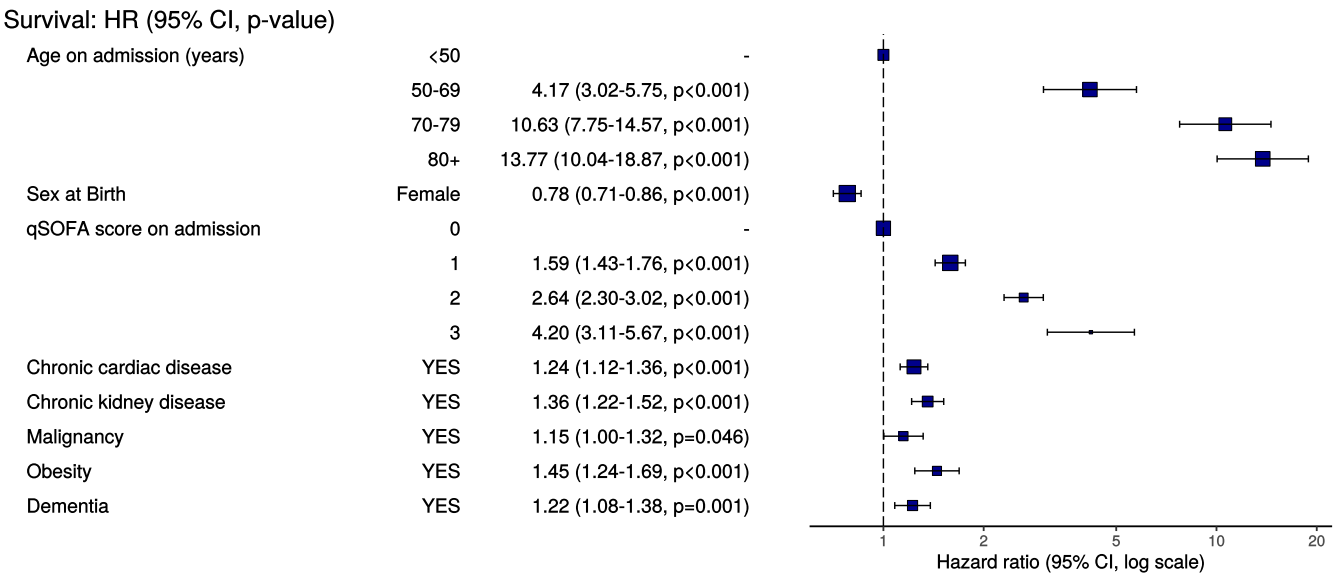
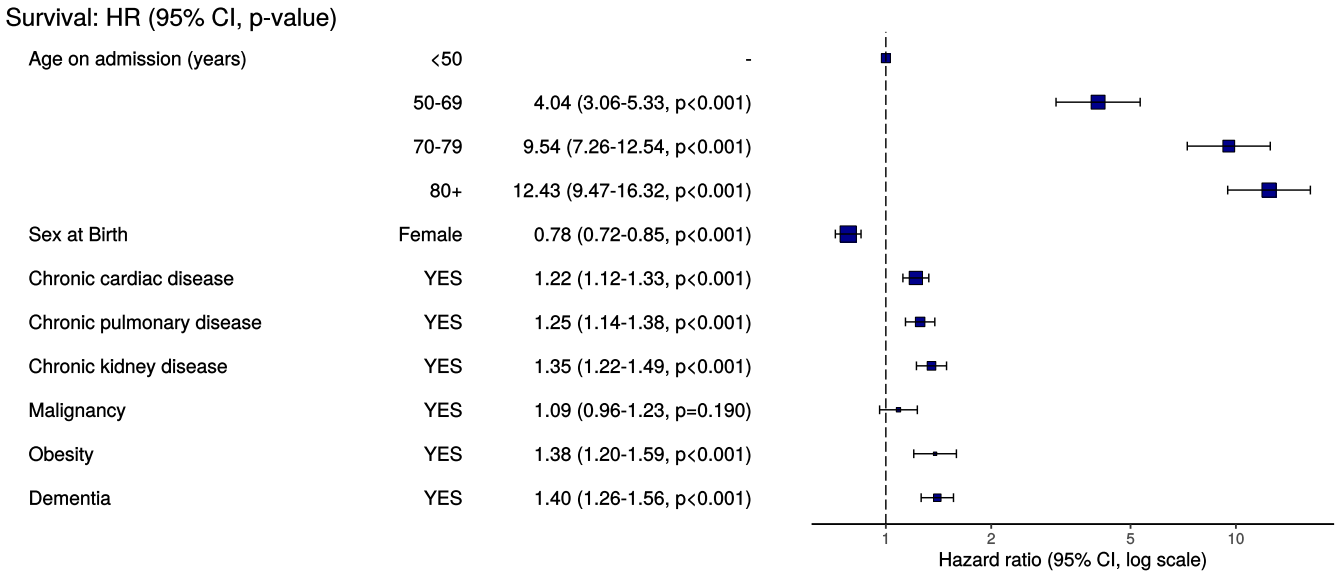


Figure 16b - Multivariable Cox proportional hazards model (age, sex, comorbidities only)



ROC = 0.7419474

Figure 17 - Predictions calibration plot

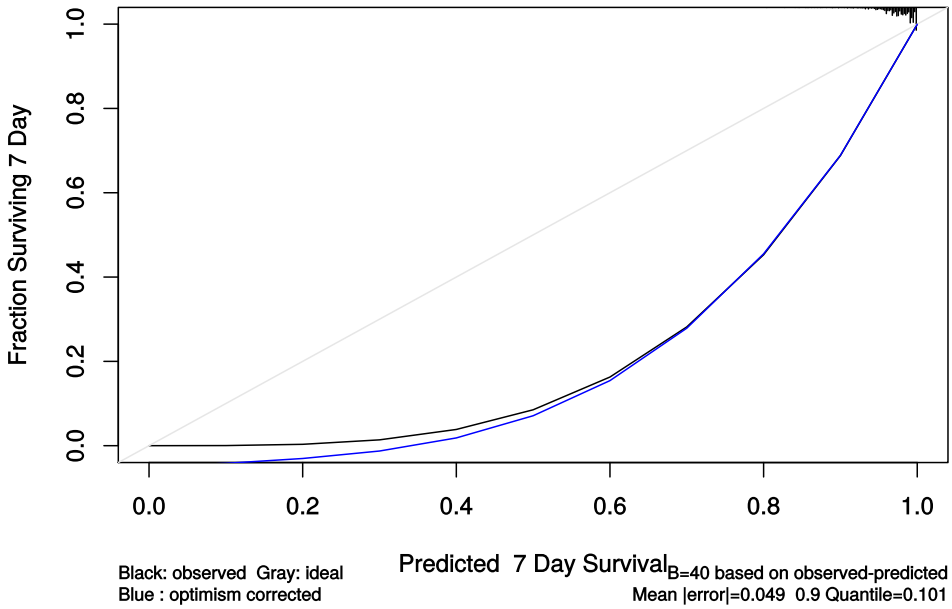


Figure 18 - Prognostic model predictions

Again, for demonstration of methods.

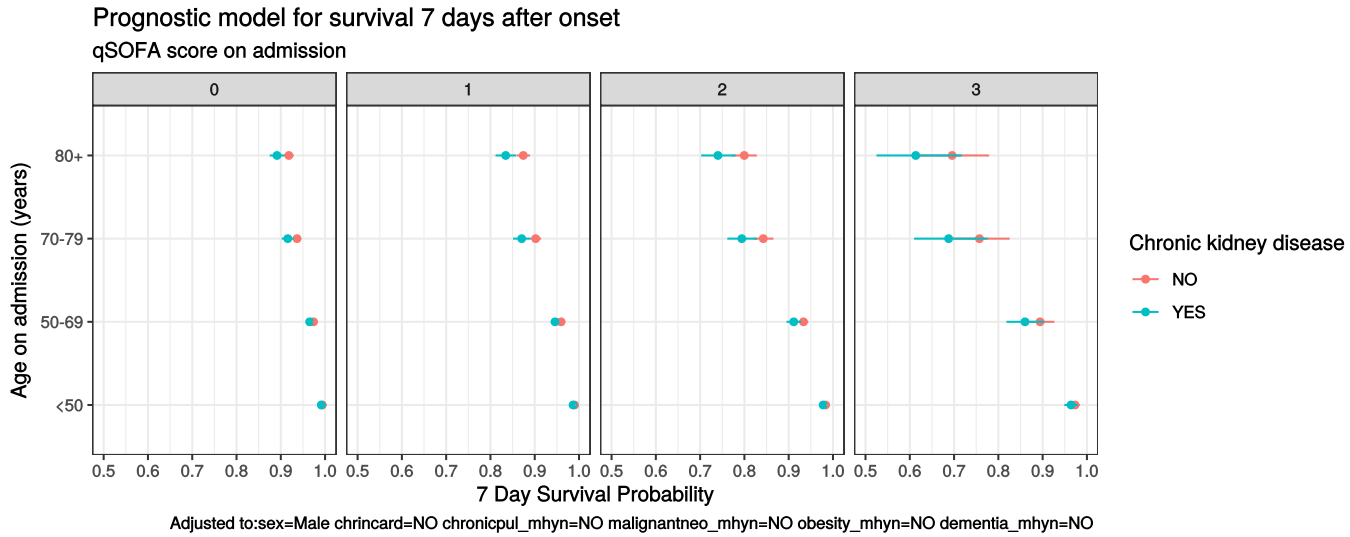


Figure 19 - Death by severity (NEWS) on admission

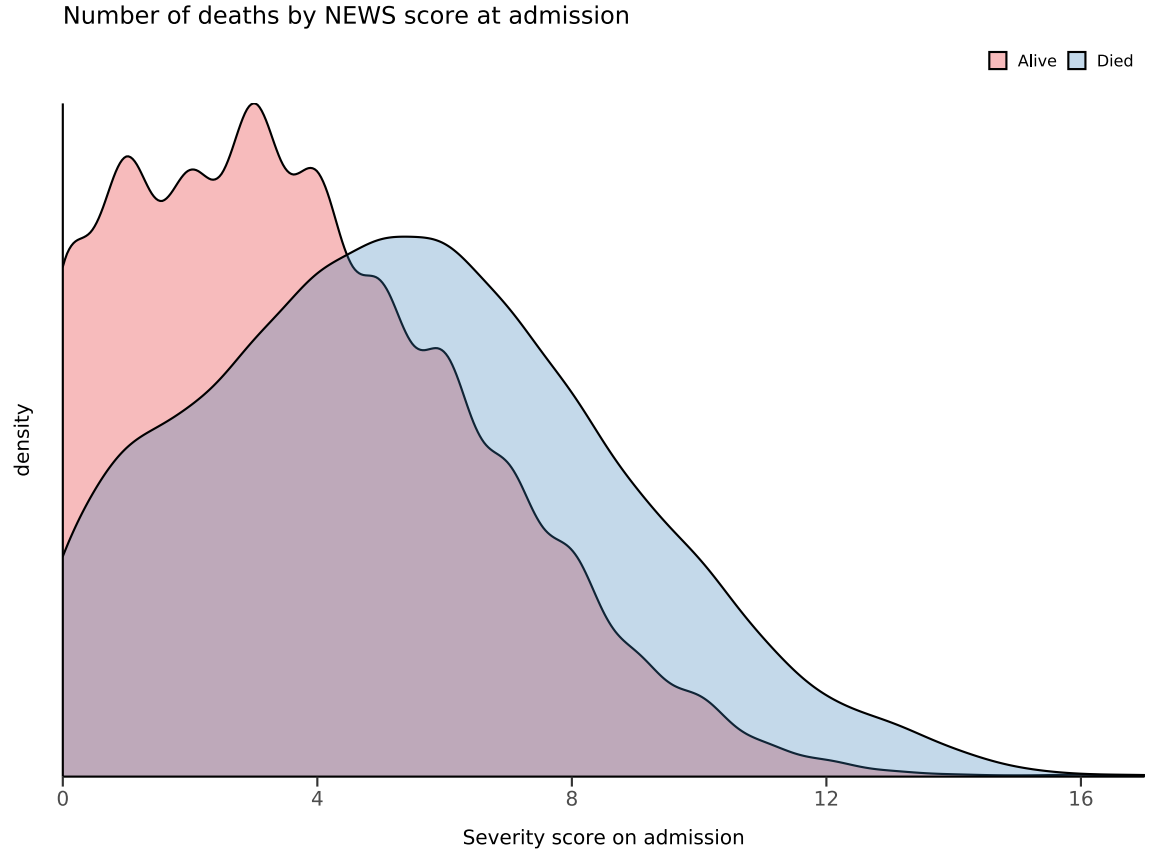


Figure 20 - Death by severity (NEWS) on admission stratified by age

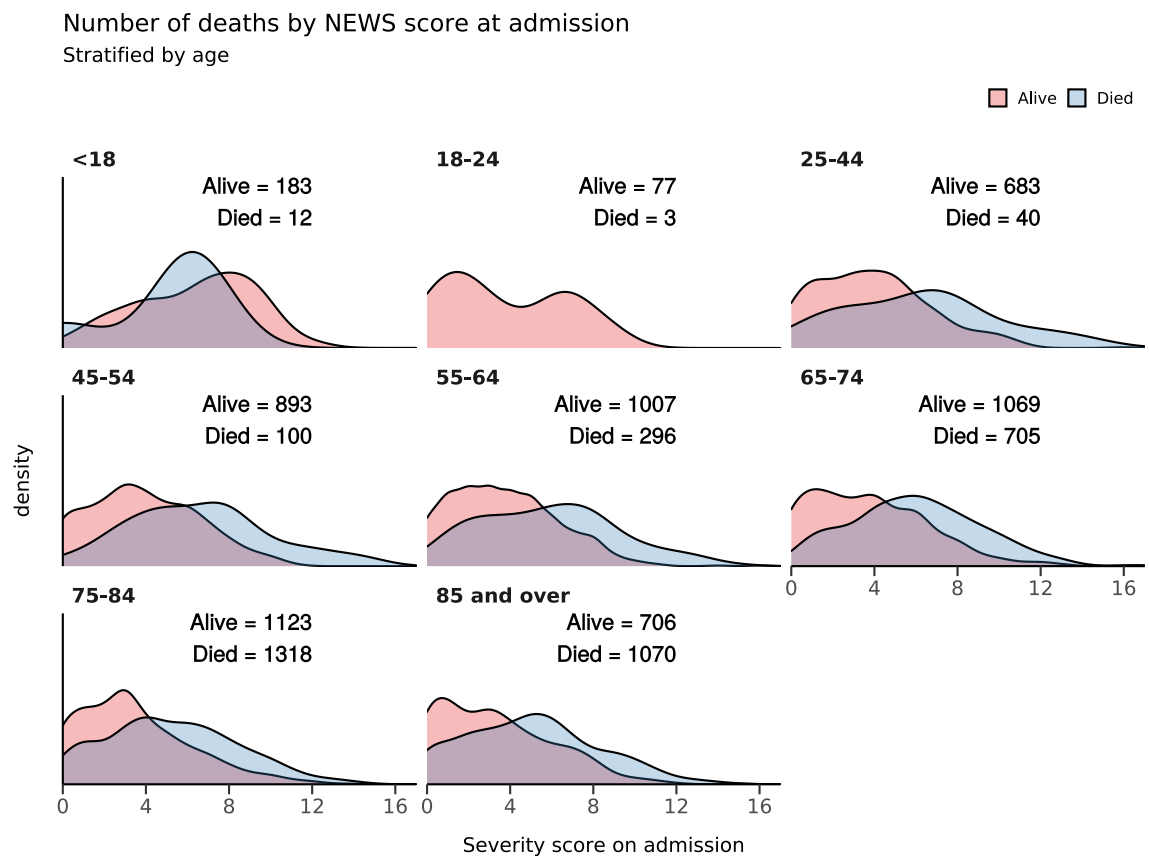
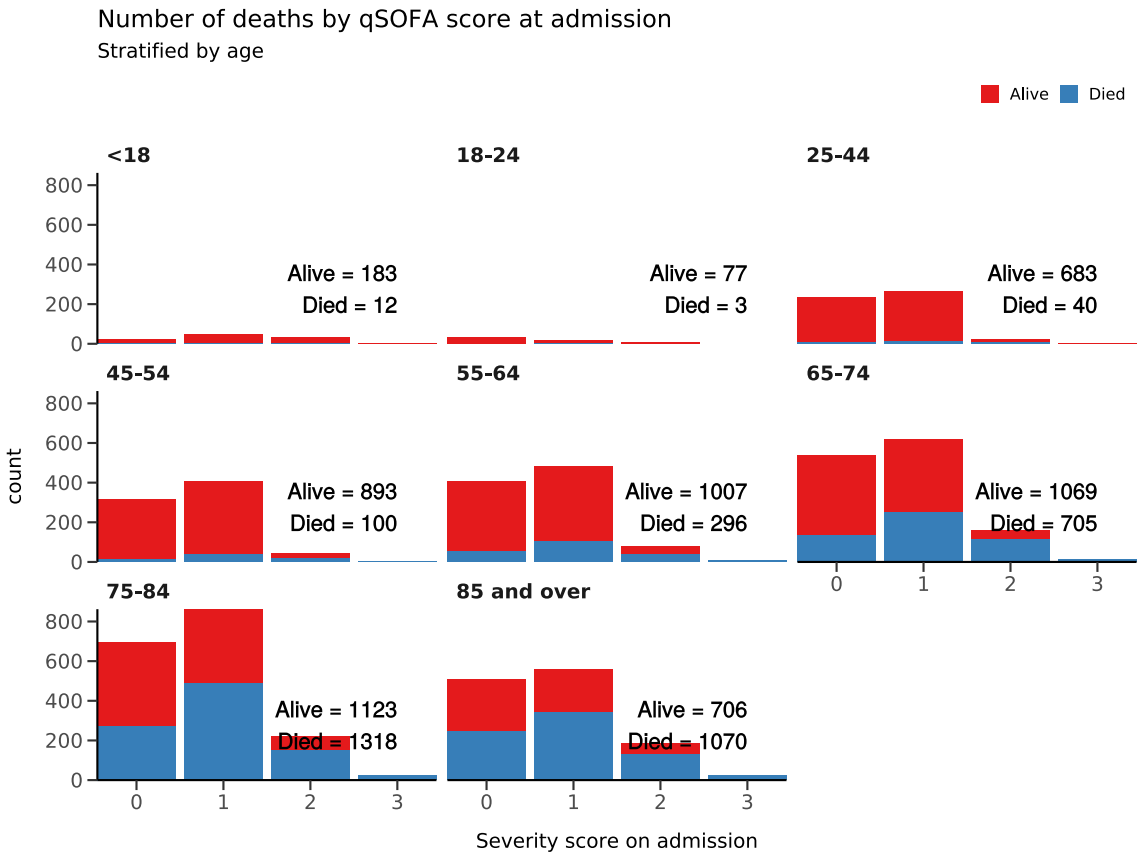


Figure 21 - Death by severity (qSOFA) on admission stratified by age



Healthcare workers

Healthcare worker		NO	YES	p
Total N (%)		13889 (95.2)	697 (4.8)	
NEWS score on admission	Median (IQR)	4.0 (4.0)	4.0 (4.0)	0.572
Death	No	4876 (59.7)	355 (94.2)	<0.001
	Yes	3288 (40.3)	22 (5.8)	

Admission (detail)

Table 1

label	levels	all
Total N (%)		21438 (100.0)
Age on admission (years)	Mean (SD)	68.5 (18.4)
Sex at Birth	Male	10098 (47.1)
	Female	6772 (31.6)
	Not specified	29 (0.1)
	(Missing)	4539 (21.2)
Healthcare worker	YES	697 (3.3)
	NO	13889 (64.8)
	N/A	1493 (7.0)
	(Missing)	5359 (25.0)

label	levels	all
Microbiology lab worker	YES	48 (0.2)
	NO	14505 (67.7)
	N/A	1523 (7.1)
	(Missing)	5362 (25.0)
Onset to admission (days)	Mean (SD)	33.9 (3110.0)
Transfer from other facility	Yes-facility is a study site	290 (1.4)
	Yes-facility is not a study site	832 (3.9)
	No	14136 (65.9)
	N/A	393 (1.8)
	(Missing)	5787 (27.0)
Travel in 14 d prior to symptoms	Yes	630 (2.9)
	No	12113 (56.5)
	N/A	2173 (10.1)
	(Missing)	6522 (30.4)
Country	Andorra	1 (0.0)
	Antigua and Barbuda	2 (0.0)
	Argentina	1 (0.0)
	Australia	2 (0.0)
	Austria	17 (0.1)
	Barbados	12 (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)
	China	2 (0.0)
	Cuba	1 (0.0)
	Cyprus	19 (0.1)
	Czechia	2 (0.0)
	Dominican Republic	2 (0.0)
	Egypt	7 (0.0)
	France	29 (0.1)
	Germany	7 (0.0)
	Ghana	1 (0.0)
	Greece	1 (0.0)

label	levels	all
	Hong Kong	1 (0.0)
	Hungary	2 (0.0)
	Iceland	1 (0.0)
	India	6 (0.0)
	Indonesia	1 (0.0)
	Iran	5 (0.0)
	Ireland	4 (0.0)
	Italy	78 (0.4)
	Japan	5 (0.0)
	Kenya	1 (0.0)
	Madagascar	1 (0.0)
	Malaysia	4 (0.0)
	Mexico	2 (0.0)
	Morocco	3 (0.0)
	Netherlands	8 (0.0)
	New Zealand	2 (0.0)
	Nigeria	2 (0.0)
	Norway	2 (0.0)
	Pakistan	6 (0.0)
	Philippines	4 (0.0)
	Poland	3 (0.0)
	Portugal	14 (0.1)
	Romania	6 (0.0)
	Saudi Arabia	1 (0.0)
	Singapore	3 (0.0)
	Slovakia	1 (0.0)
	Somalia	2 (0.0)
	South Africa	7 (0.0)
	Spain	153 (0.7)
	Swaziland	1 (0.0)
	Switzerland	7 (0.0)
	Thailand	8 (0.0)
	Turkey	5 (0.0)
	United Arab Emirates	9 (0.0)
	United Kingdom	99 (0.5)
	Yemen	1 (0.0)

label	levels	all
	Zimbabwe	1 (0.0)
	(Missing)	20862 (97.3)
Country 2	Antigua and Barbuda	1 (0.0)
	Aruba	1 (0.0)
	Australia	2 (0.0)
	Austria	4 (0.0)
	Barbados	1 (0.0)
	Bulgaria	2 (0.0)
	Canada	1 (0.0)
	Cyprus	3 (0.0)
	Czechia	1 (0.0)
	Egypt	2 (0.0)
	France	7 (0.0)
	Germany	2 (0.0)
	India	1 (0.0)
	Indonesia	1 (0.0)
	Italy	14 (0.1)
	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	16 (0.1)
	Switzerland	1 (0.0)
	Thailand	1 (0.0)
	Turkey	4 (0.0)
	Vietnam	1 (0.0)
	(Missing)	21365 (99.7)
Animal, raw meat, insect bites 14 d prior	Yes	91 (0.4)
	No	5795 (27.0)
	Unknown	8433 (39.3)
	N/A	882 (4.1)
	(Missing)	6237 (29.1)
Animal / insect	Bee Sting	1 (1.2)
	Bird (pet)	1 (1.2)

label	levels	all
	bird (pigeon)	1 (1.2)
	budgies	1 (1.2)
	Cat	1 (1.2)
	CAT	1 (1.2)
	Cat (pet)	1 (1.2)
	Cat / Dog	1 (1.2)
	Cat, Dog (pets)	1 (1.2)
	cats	3 (3.5)
	Cats	2 (2.4)
	chicken & beef	1 (1.2)
	Chickens	1 (1.2)
	COWS	1 (1.2)
	cows, rabbits, pigs goats	1 (1.2)
	dog	4 (4.7)
	Dog	10 (11.8)
	DOG	3 (3.5)
	DOG FAMILY PET	1 (1.2)
	Dog Pet	1 (1.2)
	Dog, domestic animla living in their home.	1 (1.2)
	Dogs at home	1 (1.2)
	Domestic pet dog	1 (1.2)
	DOMESTIC ANIMAL	2 (2.4)
	Domestic animal and faeces/nest	1 (1.2)
	domestic animal living in his home	1 (1.2)
	domestic animals	1 (1.2)
	Domestic Animals living in his/her home	1 (1.2)
	Domestic animals living in home	1 (1.2)
	domestic dog	1 (1.2)
	Domestic pest (cats)	1 (1.2)
	Domestic Pet	5 (5.9)
	Domestic Pet (Dog)	6 (7.1)
	Domestic pet cat	1 (1.2)
	Domestic pet Dog	1 (1.2)
	Domestic pets	1 (1.2)
	Domestic Pets	2 (2.4)
	Domestic pets (dog)	1 (1.2)

label	levels	all
	Domestic Pets Cat and Dog	1 (1.2)
	FARM ANIMALS - LAMBS	1 (1.2)
	Farm animals, cattle	1 (1.2)
	Guinea Pig	1 (1.2)
	mosquito	1 (1.2)
	pet dog	1 (1.2)
	pet dog	1 (1.2)
	Pet dog	1 (1.2)
	Pet dog -ongoing daily contact	1 (1.2)
	Pet dog ongoing daily contact	1 (1.2)
	Prepared raw chicken	1 (1.2)
	raw chicken	1 (1.2)
	Raw Chicken	1 (1.2)
	Rodent	1 (1.2)
	Rodent - hamster,	1 (1.2)
	she has a cat	1 (1.2)
	Sheep & Cattle	1 (1.2)
	Two cats	1 (1.2)
	unknown	1 (1.2)

Symptoms (detail)

Table 2

Stratified: all		all
Total N (%)		21438 (100.0)
Fever	YES	10201 (47.6)
	NO	3924 (18.3)
	Unknown	814 (3.8)
	(Missing)	6499 (30.3)
Cough	YES	10352 (48.3)
	NO	3741 (17.5)
	Unknown	854 (4.0)
	(Missing)	6491 (30.3)
Cough (sputum)	YES	3078 (14.4)
	NO	8660 (40.4)
	Unknown	3062 (14.3)
	(Missing)	6638 (31.0)

Stratified: all		all
Cough (blood)	YES	392 (1.8)
	NO	11048 (51.5)
	Unknown	3338 (15.6)
	(Missing)	6660 (31.1)
Sore throat	YES	1097 (5.1)
	NO	9433 (44.0)
	Unknown	4245 (19.8)
	(Missing)	6663 (31.1)
Runny nose	YES	400 (1.9)
	NO	9881 (46.1)
	Unknown	4495 (21.0)
	(Missing)	6662 (31.1)
Ear pain	YES	67 (0.3)
	NO	10212 (47.6)
	Unknown	4485 (20.9)
	(Missing)	6674 (31.1)
Wheeze	YES	1241 (5.8)
	NO	9965 (46.5)
	Unknown	3566 (16.6)
	(Missing)	6666 (31.1)
Chest pain	YES	1752 (8.2)
	NO	10094 (47.1)
	Unknown	2934 (13.7)
	(Missing)	6658 (31.1)
Muscle ache	YES	2253 (10.5)
	NO	8509 (39.7)
	Unknown	4006 (18.7)
	(Missing)	6670 (31.1)
Joint pain	YES	777 (3.6)
	NO	9541 (44.5)
	Unknown	4417 (20.6)
	(Missing)	6703 (31.3)
Fatigue	YES	5182 (24.2)
	NO	6259 (29.2)
	Unknown	3334 (15.6)
	(Missing)	6663 (31.1)

Stratified: all		all
Shortness of breath	YES	9772 (45.6)
	NO	3928 (18.3)
	Unknown	1218 (5.7)
	(Missing)	6520 (30.4)
Lower chest wall indrawing	YES	153 (0.7)
	NO	9633 (44.9)
	Unknown	4965 (23.2)
	(Missing)	6687 (31.2)
Headache	YES	1365 (6.4)
	NO	9333 (43.5)
	Unknown	4063 (19.0)
	(Missing)	6677 (31.1)
Confusion	YES	3280 (15.3)
	NO	9310 (43.4)
	Unknown	2198 (10.3)
	(Missing)	6650 (31.0)
Seizures	YES	195 (0.9)
	NO	11672 (54.4)
	Unknown	2881 (13.4)
	(Missing)	6690 (31.2)
Abdominal pain	YES	1165 (5.4)
	NO	10608 (49.5)
	Unknown	2994 (14.0)
	(Missing)	6671 (31.1)
Nausa/vomiting	YES	2379 (11.1)
	NO	9929 (46.3)
	Unknown	2473 (11.5)
	(Missing)	6657 (31.1)
Diarrhoea	YES	2468 (11.5)
	NO	9816 (45.8)
	Unknown	2501 (11.7)
	(Missing)	6653 (31.0)
Conjunctivitis	YES	46 (0.2)
	NO	10969 (51.2)
	Unknown	3734 (17.4)
	(Missing)	6689 (31.2)

Stratified: all		all
Skin rash	YES	205 (1.0)
	NO	11094 (51.7)
	Unknown	3456 (16.1)
	(Missing)	6683 (31.2)
Skin ulcers	YES	270 (1.3)
	NO	11013 (51.4)
	Unknown	3473 (16.2)
	(Missing)	6682 (31.2)
Lymphadenopathy	YES	77 (0.4)
	NO	10953 (51.1)
	Unknown	3711 (17.3)
	(Missing)	6697 (31.2)
Bleeding (Haemorrhage)	YES	134 (0.6)
	NO	11544 (53.8)
	Unknown	3059 (14.3)
	(Missing)	6701 (31.3)
If Bleeding (others)	YES	245 (1.1)
	NO	11171 (52.1)
	Unknown	3194 (14.9)
	(Missing)	6828 (31.8)

Comorbidity (detail)

Table 3

Stratified: all		all
Total N (%)		21438 (100.0)
Chronic cardiac disease	YES	4374 (20.4)
	NO	10037 (46.8)
	Unknown	617 (2.9)
	(Missing)	6410 (29.9)
Chronic pulmonary disease	YES	2546 (11.9)
	NO	11808 (55.1)
	Unknown	671 (3.1)
	(Missing)	6413 (29.9)
Asthma	YES	2052 (9.6)
	NO	12226 (57.0)
	Unknown	723 (3.4)

Stratified: all		all
	(Missing)	6437 (30.0)
Chronic kidney disease	YES	2230 (10.4)
	NO	12018 (56.1)
	Unknown	735 (3.4)
	(Missing)	6455 (30.1)
Moderate/severe liver disease	YES	242 (1.1)
	NO	13898 (64.8)
	Unknown	841 (3.9)
	(Missing)	6457 (30.1)
Mild Liver disease	YES	228 (1.1)
	NO	13884 (64.8)
	Unknown	868 (4.0)
	(Missing)	6458 (30.1)
Chronic neurological disorder	YES	1570 (7.3)
	NO	12576 (58.7)
	Unknown	831 (3.9)
	(Missing)	6461 (30.1)
Malignancy	YES	1404 (6.5)
	NO	12726 (59.4)
	Unknown	857 (4.0)
	(Missing)	6451 (30.1)
Chronic hematologic disease	YES	555 (2.6)
	NO	13540 (63.2)
	Unknown	863 (4.0)
	(Missing)	6480 (30.2)
AIDS/HIV	YES	68 (0.3)
	NO	13986 (65.2)
	Unknown	922 (4.3)
	(Missing)	6462 (30.1)
Obesity	YES	1322 (6.2)
	NO	11750 (54.8)
	Unknown	1765 (8.2)
	(Missing)	6601 (30.8)
Diabetes with complications	YES	1035 (4.8)
	NO	13234 (61.7)
	Unknown	729 (3.4)

Stratified: all		all
	(Missing)	6440 (30.0)
Diabetes without complications	YES	2974 (13.9)
	NO	11372 (53.0)
	Unknown	662 (3.1)
	(Missing)	6430 (30.0)
Rheumatologic disorder	YES	1328 (6.2)
	NO	12733 (59.4)
	Unknown	879 (4.1)
	(Missing)	6498 (30.3)
Dementia	YES	1872 (8.7)
	NO	12316 (57.4)
	Unknown	788 (3.7)
	(Missing)	6462 (30.1)
Malnutrition	YES	306 (1.4)
	NO	13220 (61.7)
	Unknown	1369 (6.4)
	(Missing)	6543 (30.5)
smoking_mhyn_2levels	YES	675 (3.1)
	NO	10812 (50.4)
	(Missing)	9951 (46.4)