

Dynamic CO-CIN report to SAGE and NERVTAG

[OFFICIAL-SENSITIVE PROTECT]

Dynamic content updated: 2020-04-20 22:02:32.

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 20 April 2020, CO-CIN has recruited **18510 patients** with confirmed Coronavirus (Figure 1).

The CO-CIN dataset represents NA% (18510/124,743 have) of cases of confirmed Coronavirus cases in the UK, per the PHE daily reports (last updated 9am 20 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 682 had travelled abroad recently, and 3323 reported visiting or working in a hospital where COVID-19 cases are being managed.

The median age is 72 (range: 0-104), Male/Female 8566/5649.

The most common symptoms were cough (70%), fever (69%) and shortness of breath (65%) (Figure 3A). 508/12771 (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%). 8591/18510 (46%) of patients have reported no co morbidity. 59/1063 (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 - 73256 days).

The median length of hospital stay was 7 days (range: 1-195, n = 7085).

1057/8047 (13%) patients required high-flow oxygen after day 1 of treatment.

Currently 2985 patient(s) have died and 2122 required ICU. 4401 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).

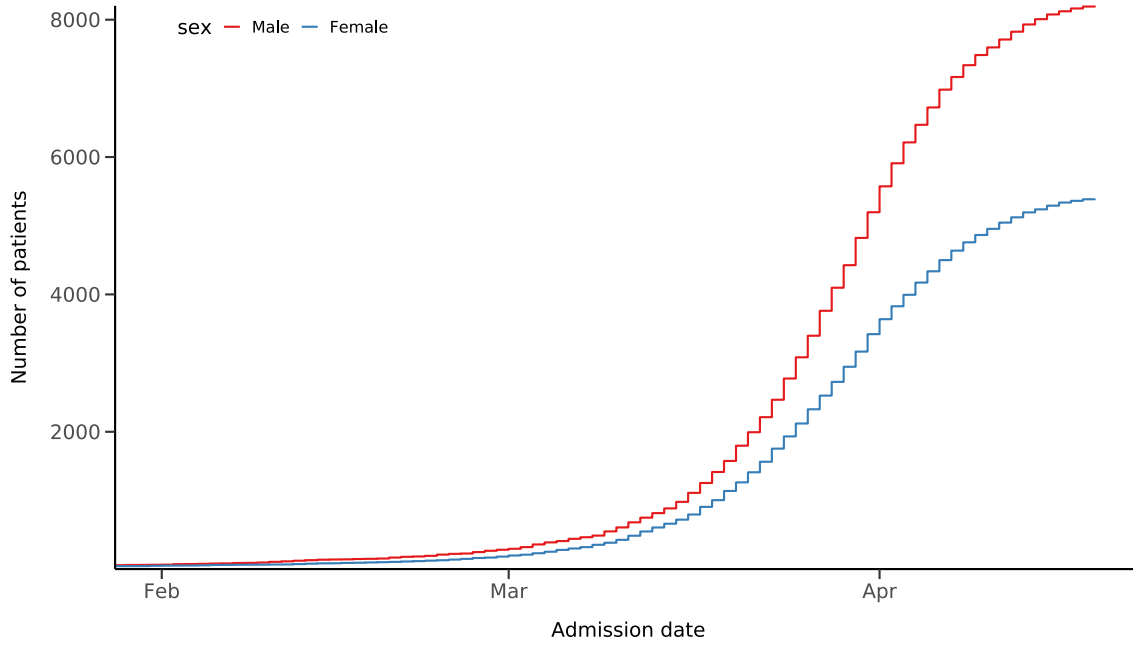
Analytics: Lisa Norman, Riinu Pius, Thomas Drake, Cameron Fairfield, Stephen Knight, Kenneth McLean, Katie Shaw.

Admission

Figure 1

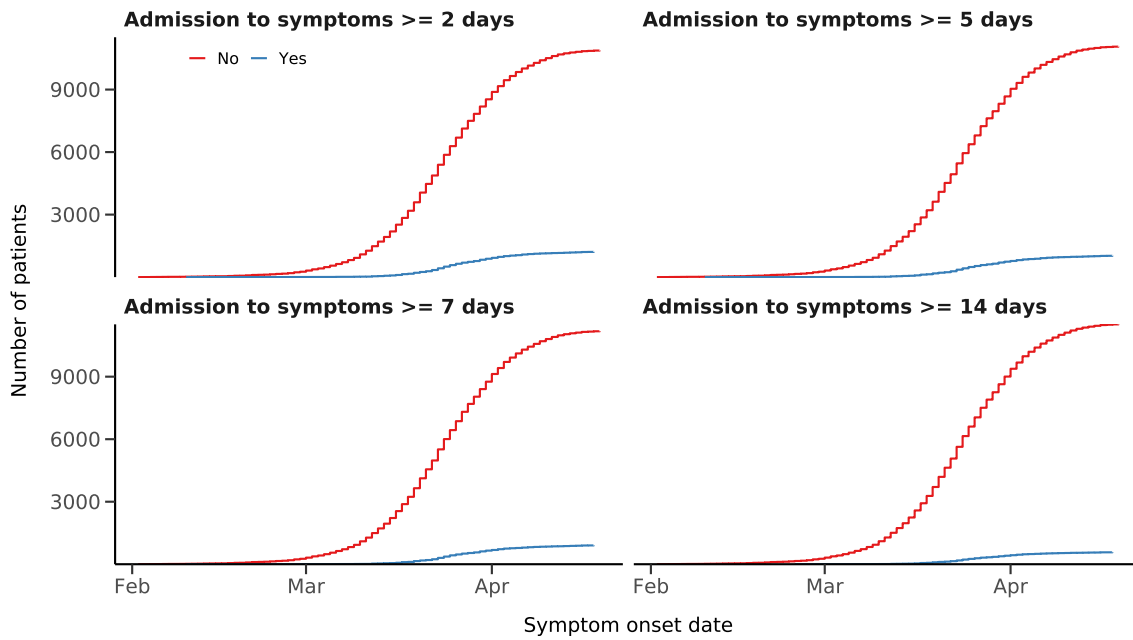
Hospital admission with COVID-19 by sex

Figure 1A

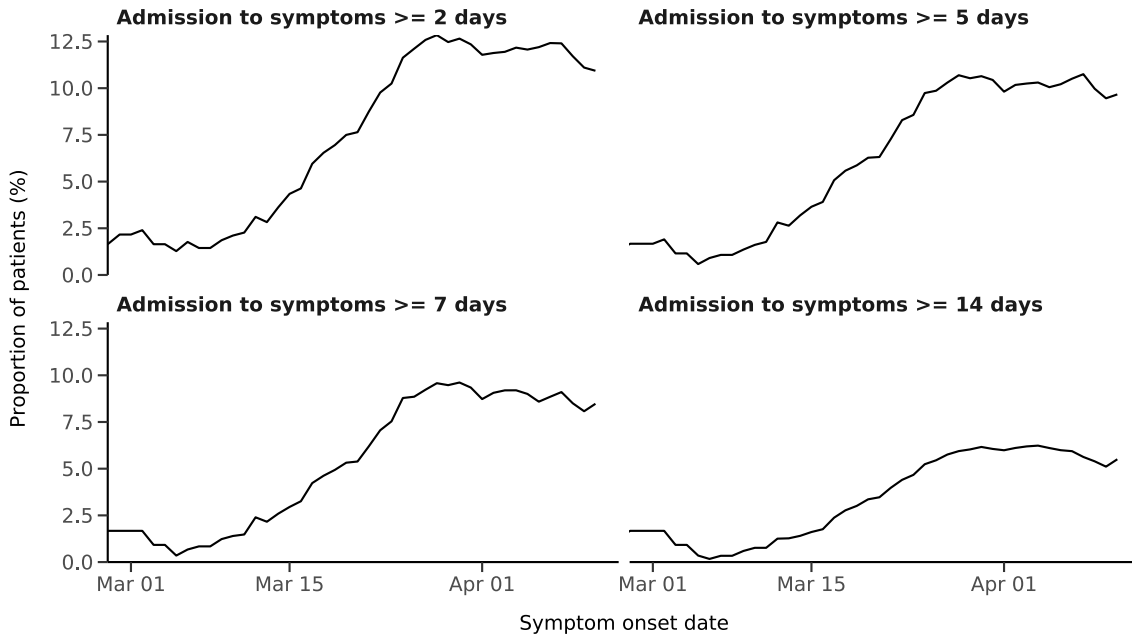


Number with symptom onset occurring after admission to hospital

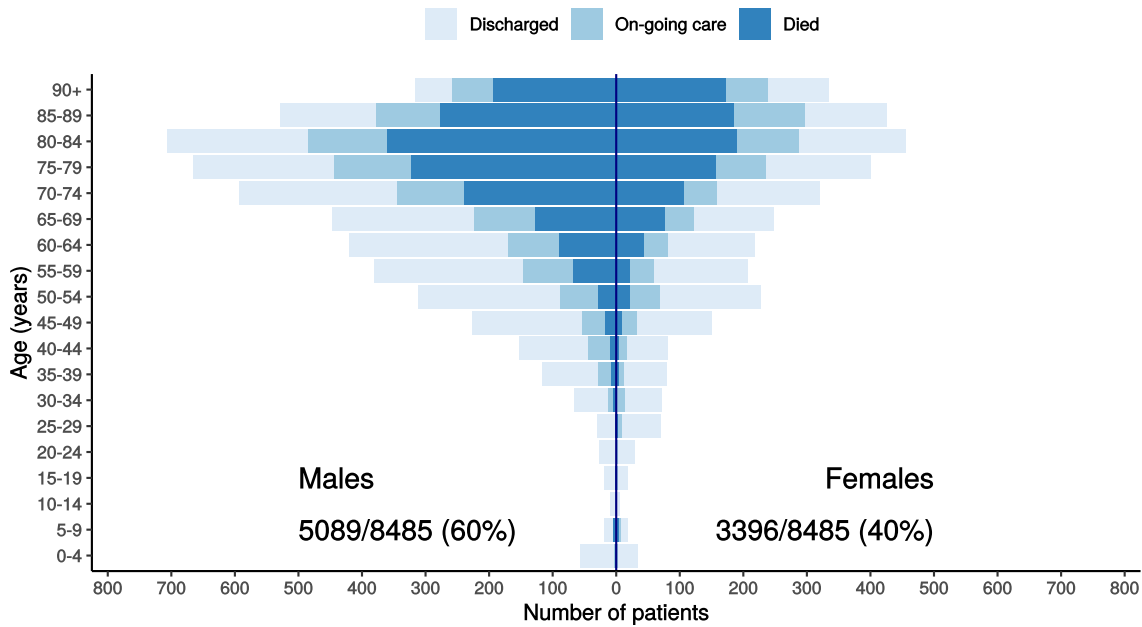
Figure 1B



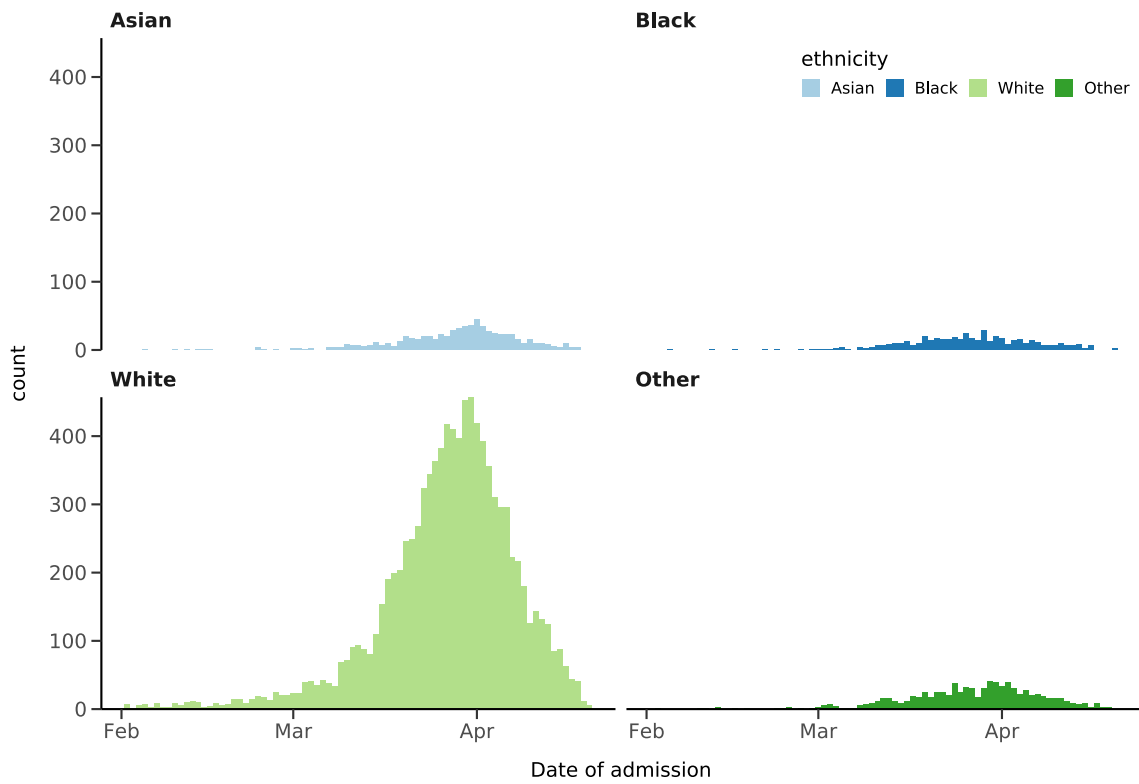
Proportion with symptom onset occurring after hospital admission
 Figure 1C - 7-day rolling percentage. n = 12090



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



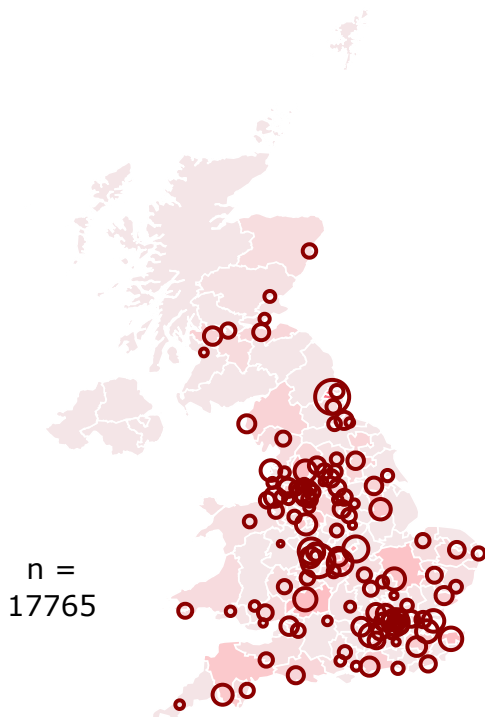
Hospital admission with COVID-19 by ethnicity
Figure 1E



Location by CCG / Healthboard

Figure 2

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

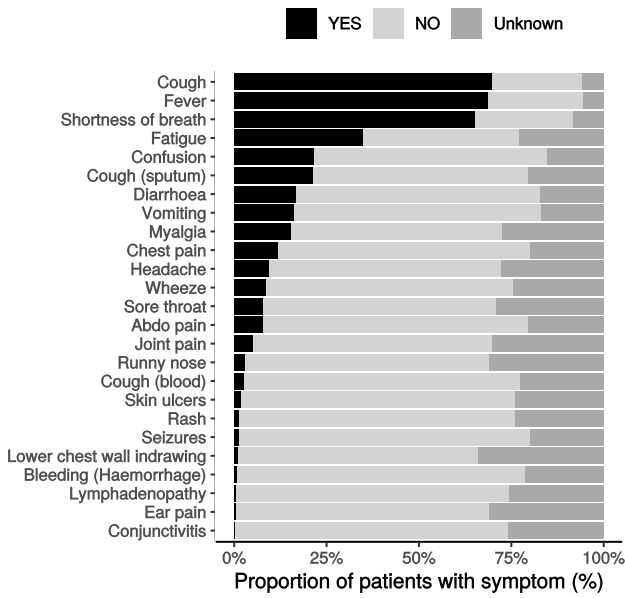


Symptoms and comorbidity

Figure 3A

Symptoms on presentation to hospital (% patients, n = 12629)

Figure 3A



Comorbidity (% patients, n = 12707)

Figure 3B

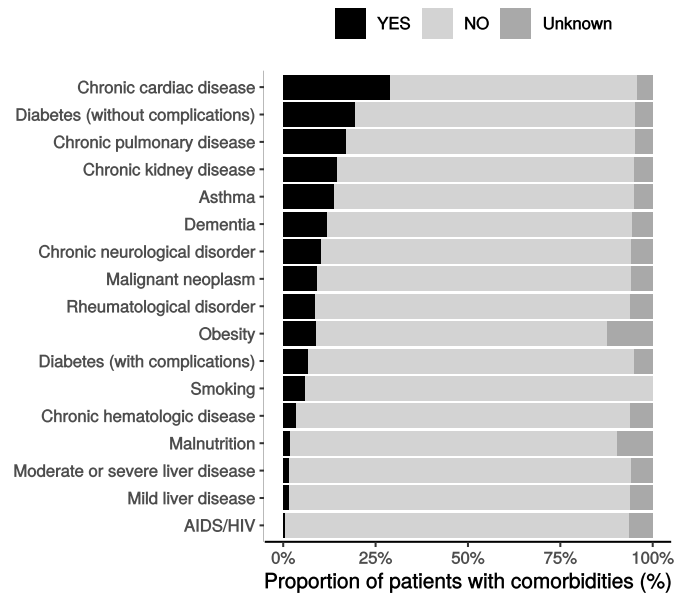
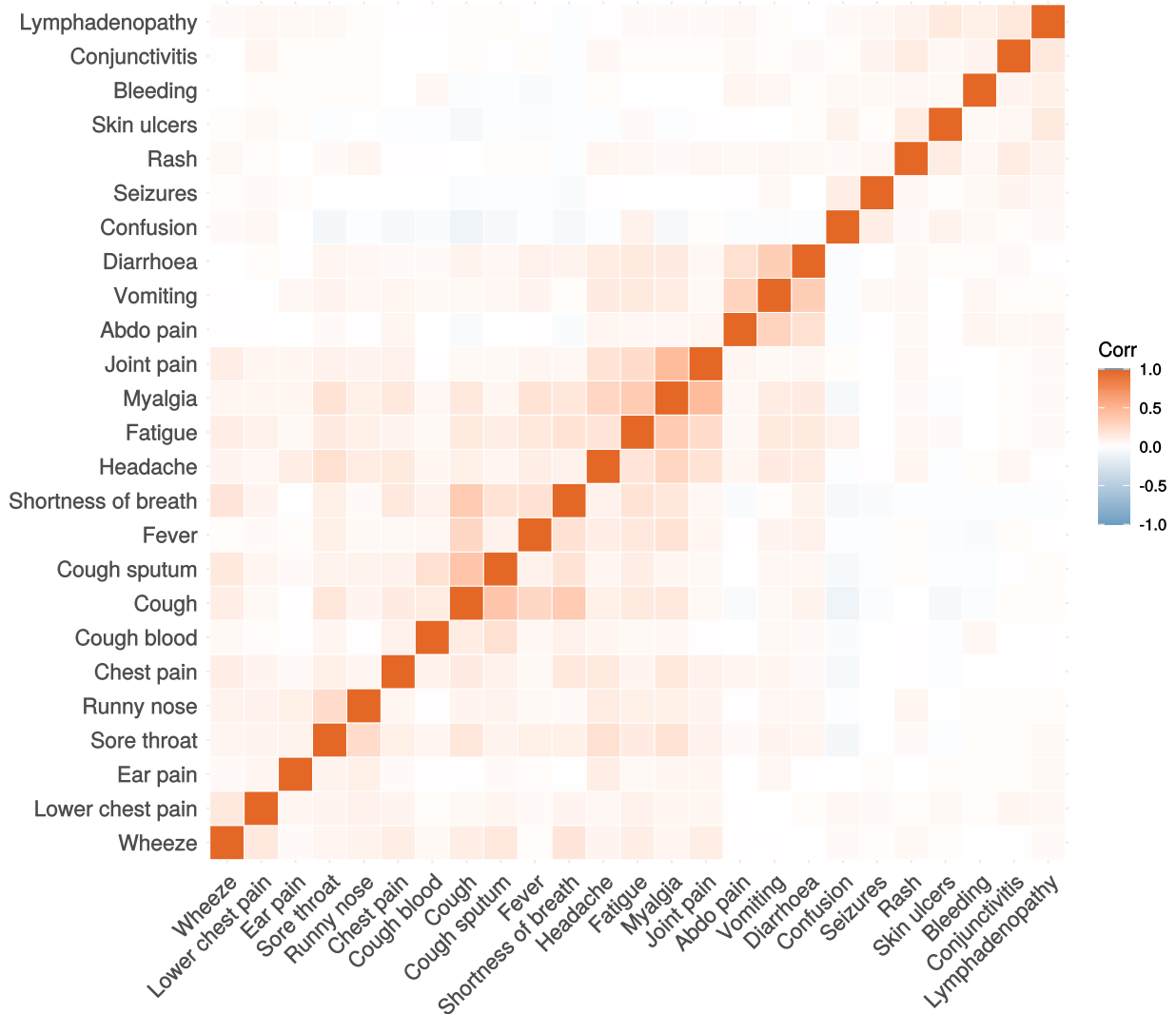


Figure 3C

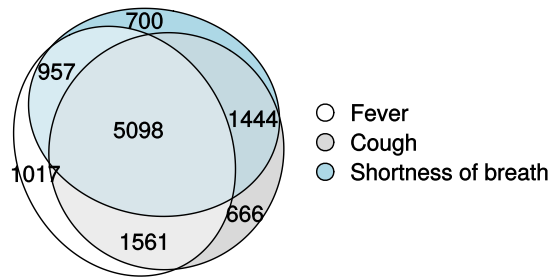
Correlation of symptoms in all pages. Note clusters, top right to bottom left, flu-like, coryzal, abdominal, respiratory, neurocutaneous.



Symptoms (diagnostic criteria)

Figure 4A

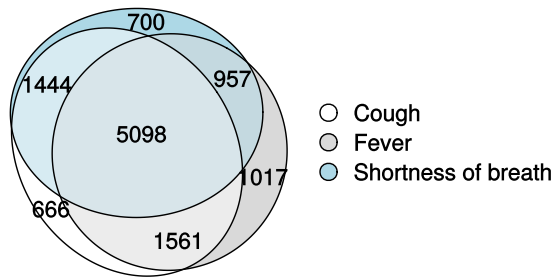
n = 12629



Symptoms (most common)

Figure 4B

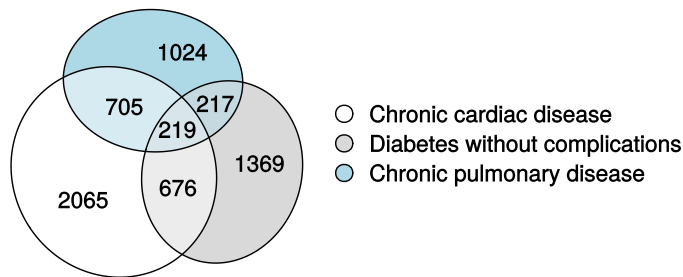
n = 12629



Comorbidity (most common)

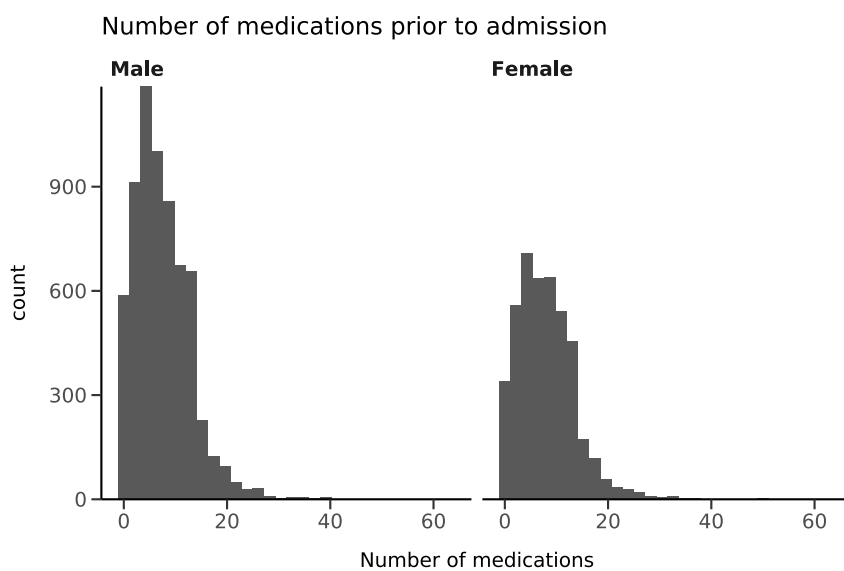
Figure 4C

n = 12707



Medication prior to illness

Figure 5

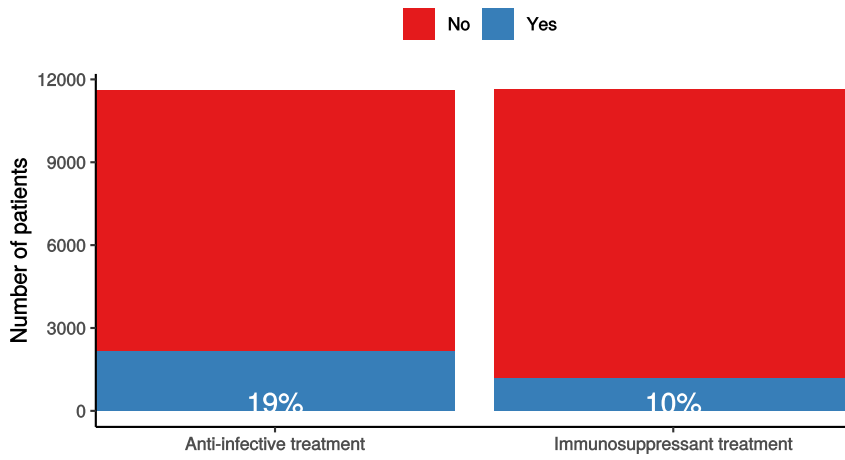


Preadmission treatment

Figure 6

Pre-admission treatment

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



Patient flow

Figure 7A - All patients

N = 12961

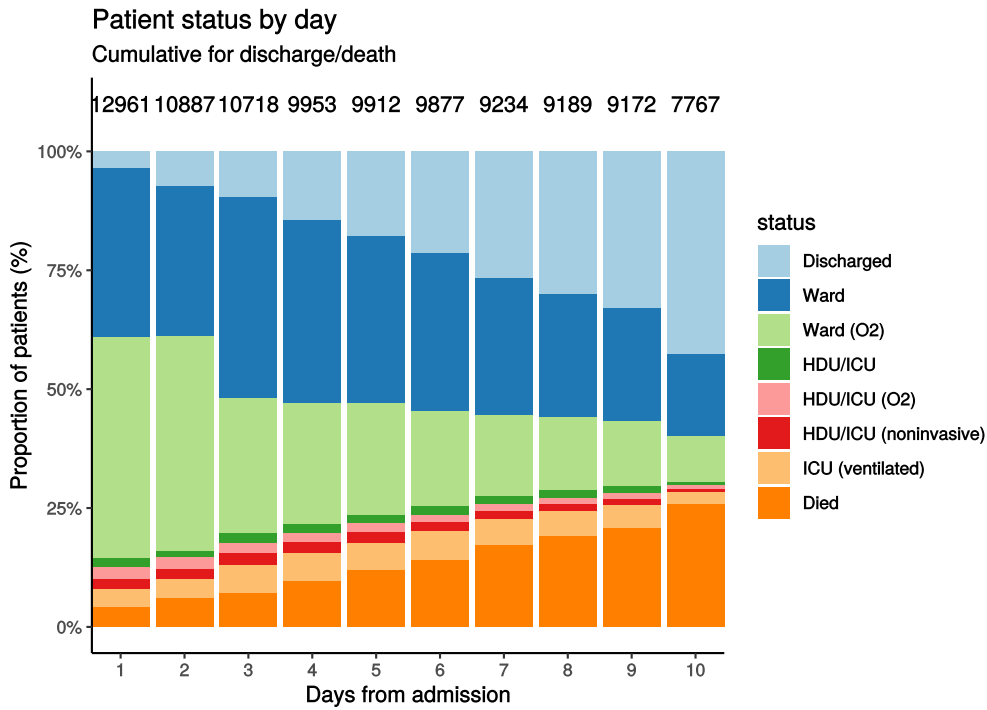
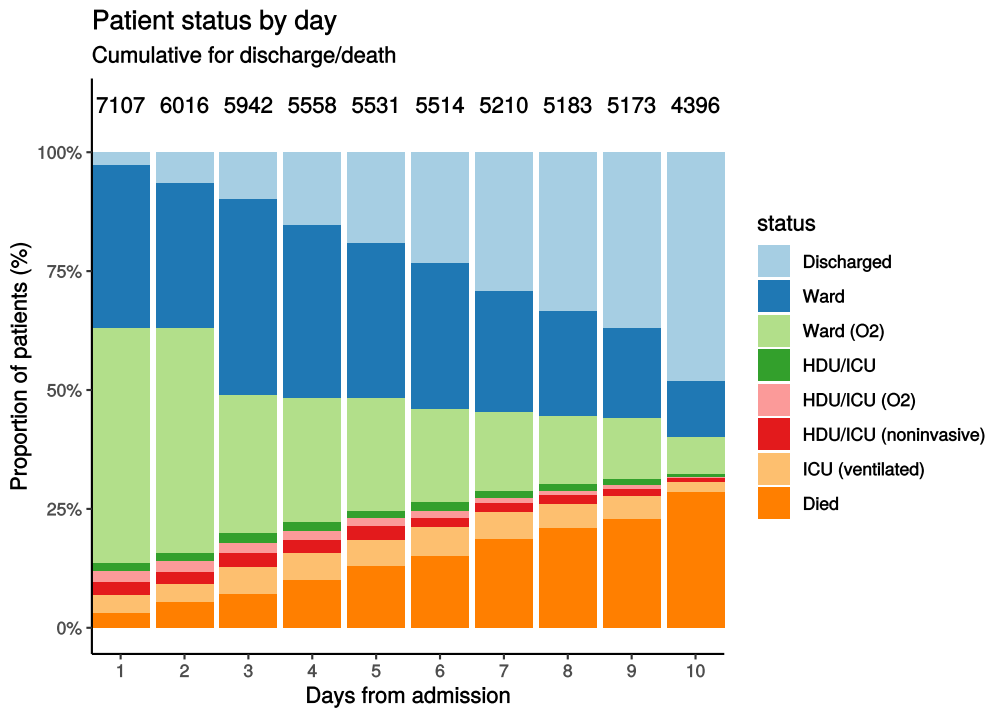


Figure 7B - Patients admitted ≥ 14 days and ≤ 28 days ago

N = 7107



Oxygen requirement

Figure 8A - All patients

N = 11741

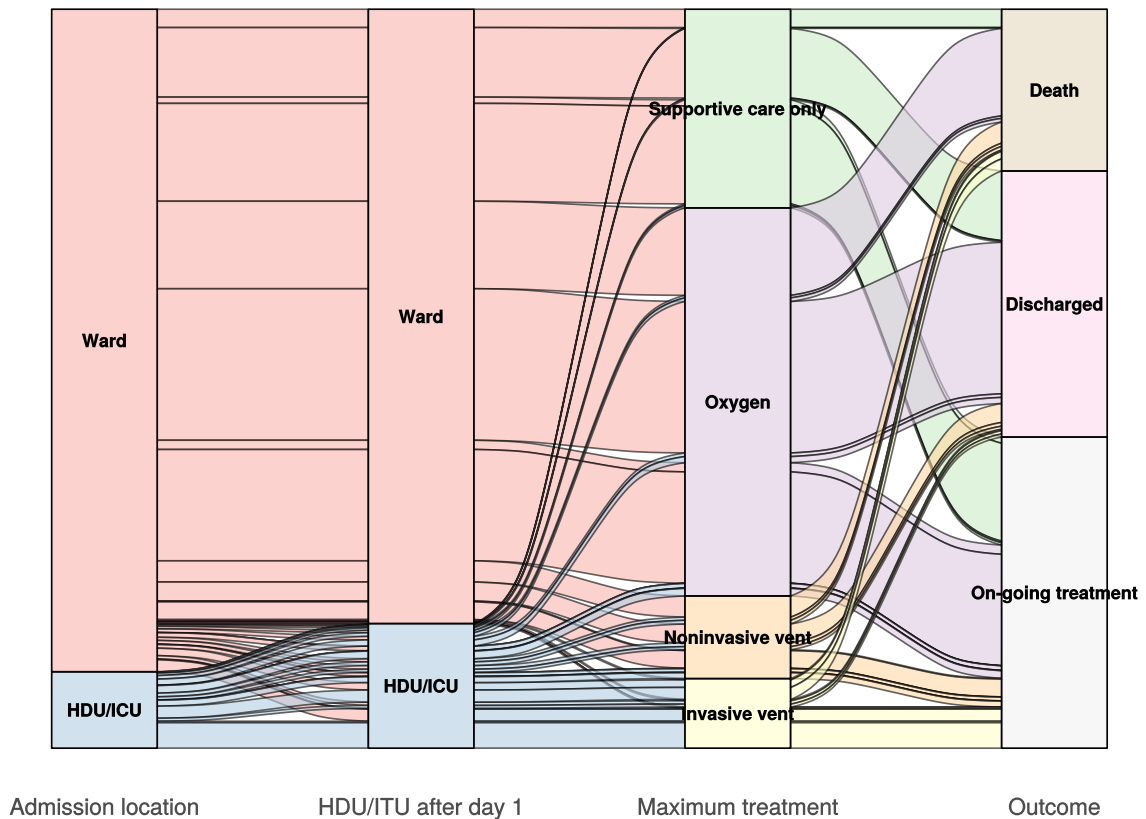
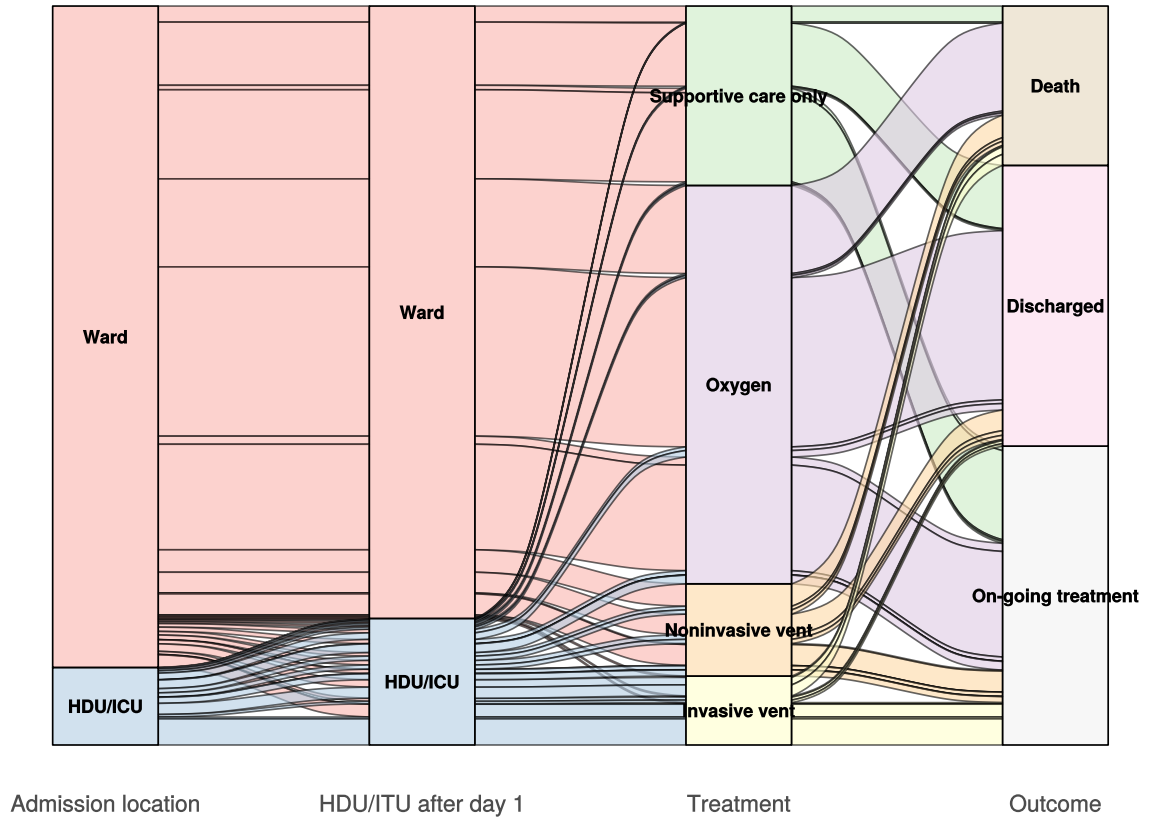


Figure 8B - Patients admitted ≥ 14 days and ≤ 28 days ago

N = 6546

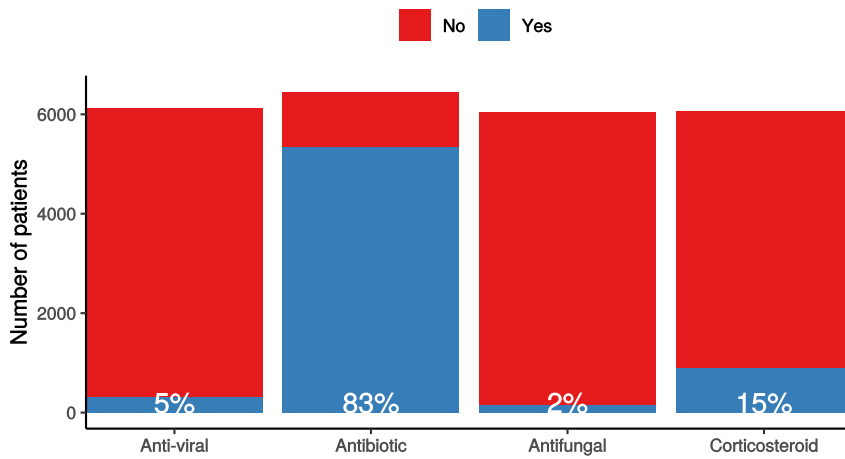


In-hospital medical treatment

Figure 9

In-hospital treatment

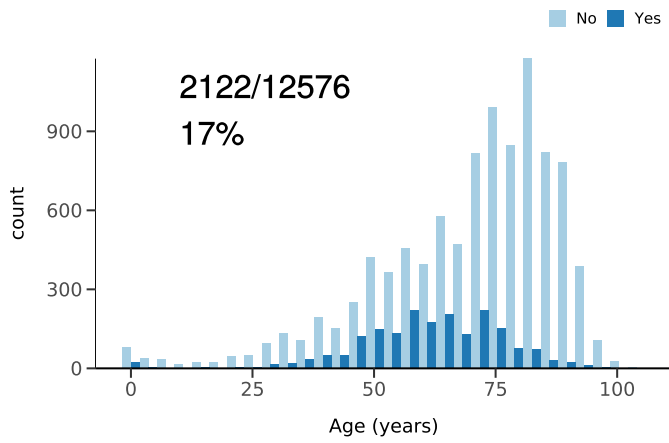
Anti-virals, antibiotics, corticosteroids, and anti-fungals for patients who have coi



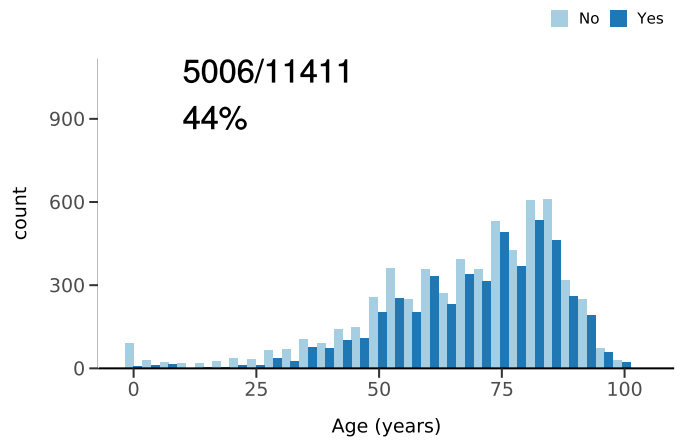
Treatment

Figure 10

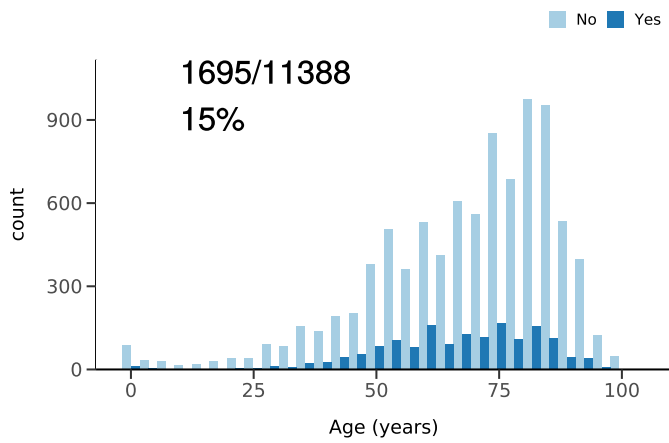
ICU/HDU admission
Figure 10A



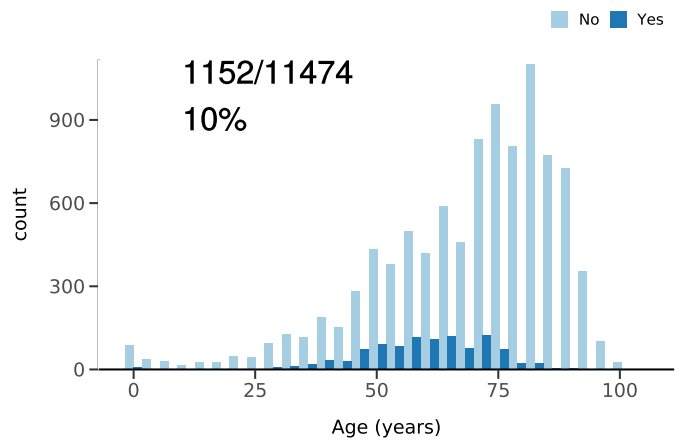
High flow oxygen
Figure 10B



Noninvasive ventilation
Figure 10C



Invasive ventilation
Figure 10D

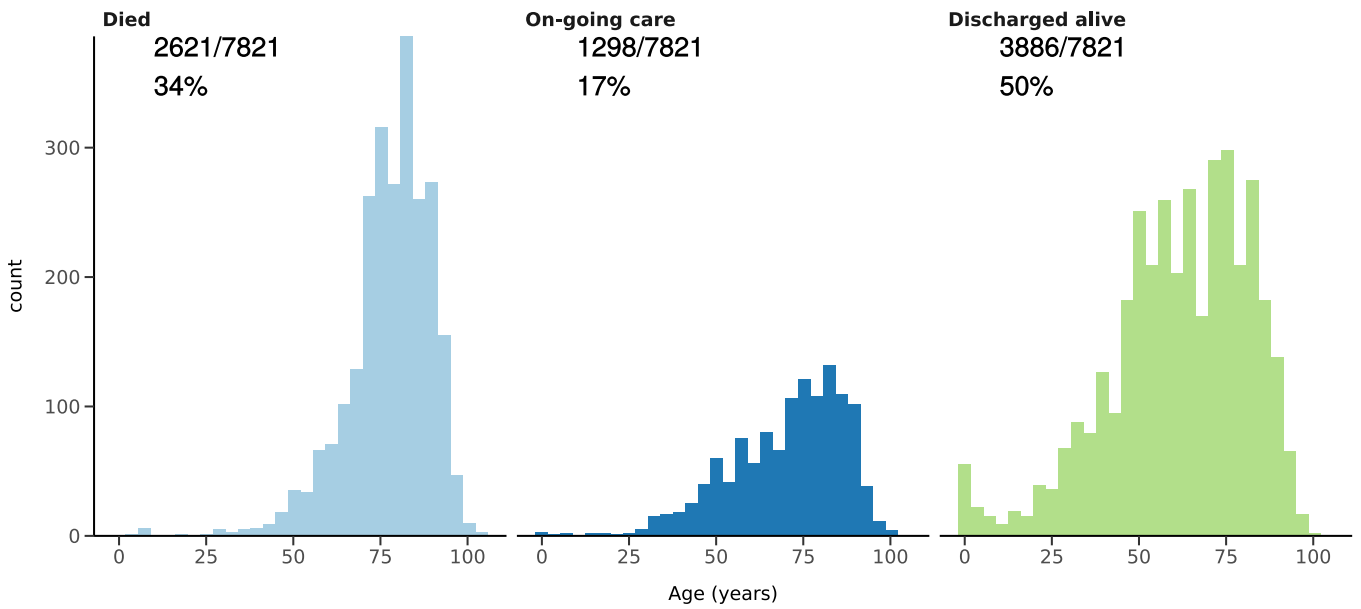


Status in patients admitted ≥ 14 days from today

Figure 11

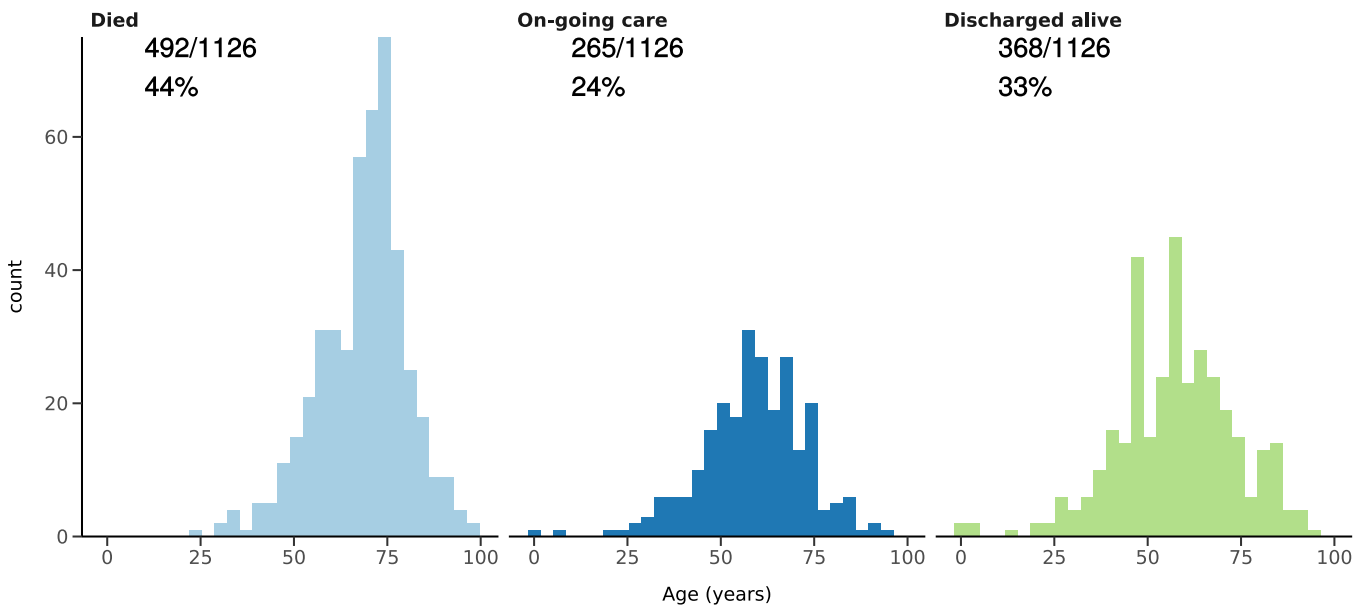
All: status in patients admitted ≥ 14 days ago

Figure 11A



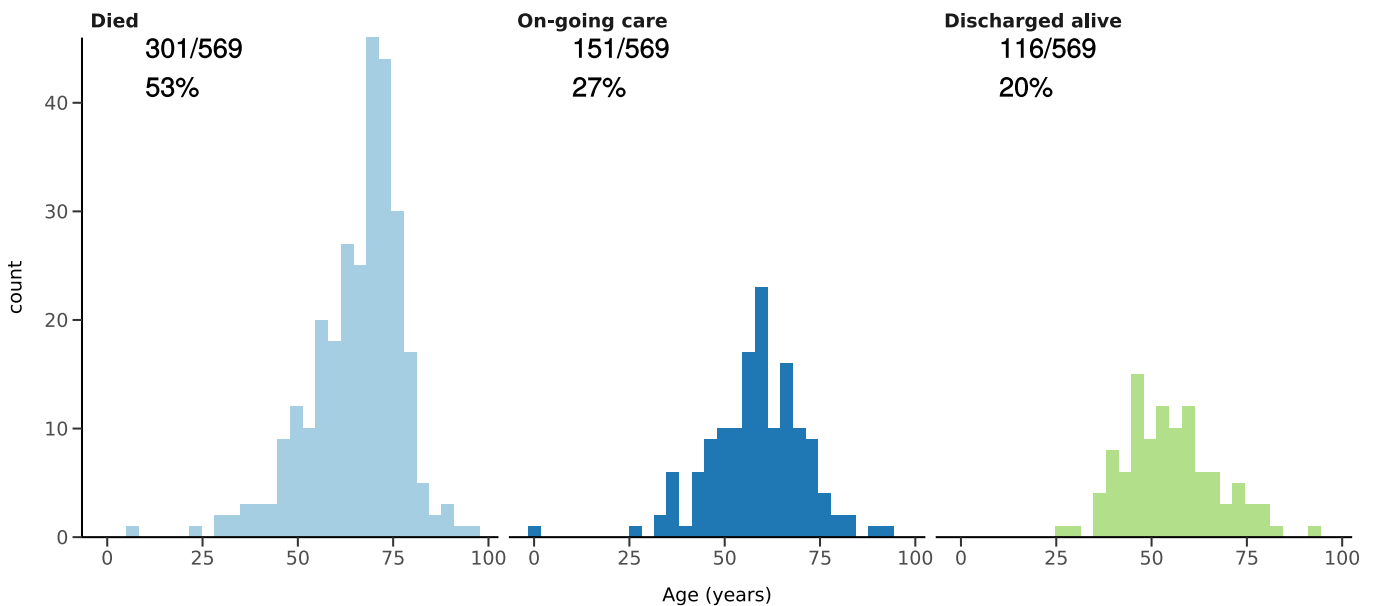
ICU/HDU admissions: status in patients admitted ≥ 14 days ago

Figure 11B



Invasive ventilation: status in patients admitted ≥ 14 days ago

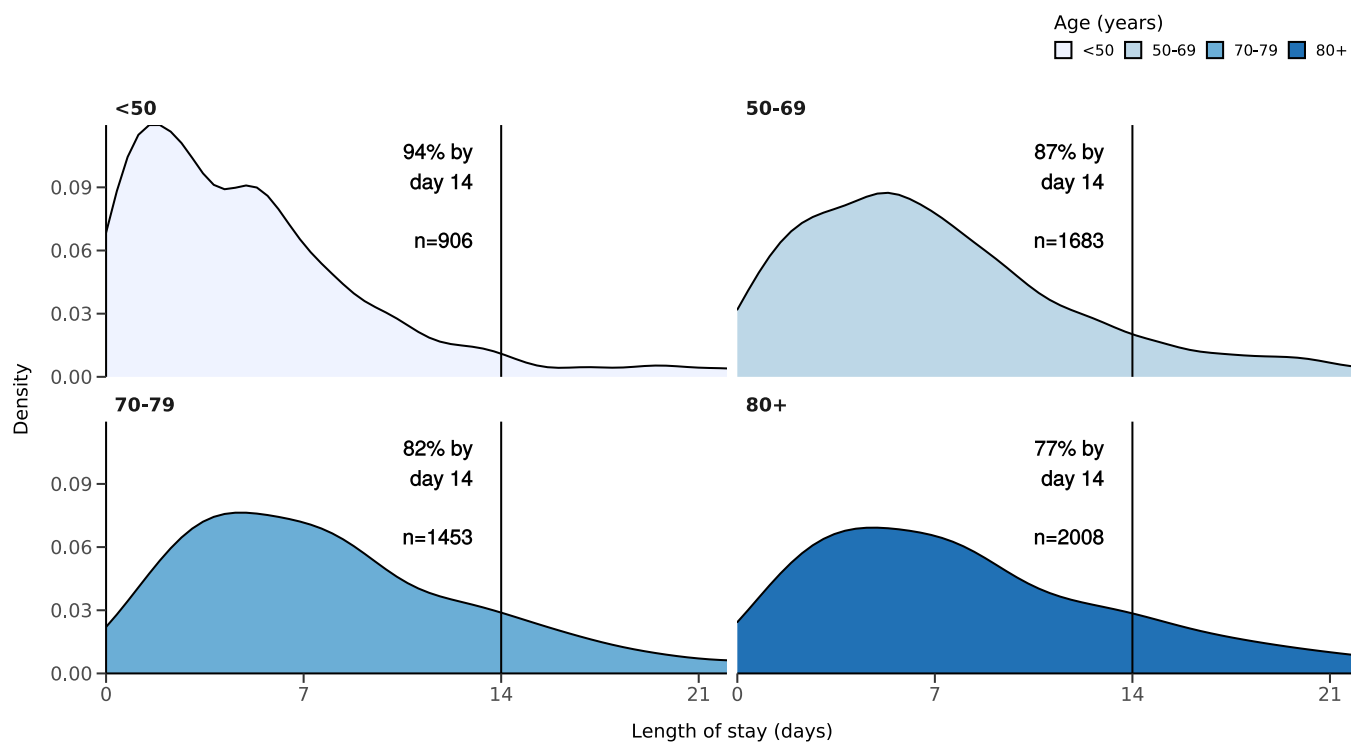
Figure 11c



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	937 (93.8)	62 (6.2)	•	•
	50-69	1363 (76.0)	430 (24.0)	4.77 (3.63-6.36, p<0.001)	4.66 (3.40-6.54, p<0.001)
	70-79	783 (51.2)	747 (48.8)	14.42 (11.03-19.17, p<0.001)	12.61 (9.18-17.74, p<0.001)
	80+	885 (41.6)	1244 (58.4)	21.24 (16.33-28.11, p<0.001)	18.18 (13.23-25.56, p<0.001)
Sex at Birth	Male	2411 (58.9)	1679 (41.1)	•	•
	Female	1764 (65.1)	945 (34.9)	0.77 (0.70-0.85, p<0.001)	0.73 (0.64-0.83, p<0.001)
Chronic cardiac disease	NO	3017 (69.0)	1356 (31.0)	•	•
	YES	895 (47.6)	985 (52.4)	2.45 (2.19-2.74, p<0.001)	1.27 (1.10-1.46, p=0.001)
Chronic pulmonary disease	NO	3356 (65.6)	1759 (34.4)	•	•
	YES	539 (48.9)	564 (51.1)	2.00 (1.75-2.28, p<0.001)	1.32 (1.13-1.56, p=0.001)
Chronic neurological disorder	NO	3547 (64.3)	1972 (35.7)	•	•
	YES	307 (49.3)	316 (50.7)	1.85 (1.57-2.19, p<0.001)	1.53 (1.24-1.89, p<0.001)
Chronic hematologic disease	NO	3720 (63.4)	2148 (36.6)	•	•
	YES	113 (45.6)	135 (54.4)	2.07 (1.60-2.67, p<0.001)	1.66 (1.20-2.31, p=0.003)
Chronic kidney disease	NO	3444 (65.7)	1797 (34.3)	•	•

Dependent: death		No	Yes	OR (univariable)	OR (multivariable)
Dementia	YES	424 (45.1)	516 (54.9)	2.33 (2.03-2.69, p<0.001)	1.46 (1.23-1.75, p<0.001)
	NO	3568 (65.9)	1850 (34.1)	•	•
Obesity	YES	289 (40.0)	434 (60.0)	2.90 (2.47-3.40, p<0.001)	1.52 (1.25-1.85, p<0.001)
	NO	3231 (63.1)	1890 (36.9)	•	•
Malignancy	YES	331 (61.4)	208 (38.6)	1.07 (0.89-1.29, p=0.442)	1.66 (1.32-2.08, p<0.001)
	NO	3526 (64.1)	1973 (35.9)	•	•
	YES	312 (50.7)	303 (49.3)	1.74 (1.47-2.05, p<0.001)	1.21 (0.98-1.48, p=0.071)

Number in dataframe = 11484, Number in model = 5125, Missing = 6359, AIC = 5668.7, C-statistic = 0.758, H&L = Chi-sq(8) 34.88 (p<0.001)

Figure 13 - Adjusted odds ratio plot

Death

Age on admission (years)	<50	-
	50-69	4.66 (3.40-6.54, p<0.001)
	70-79	12.61 (9.18-17.74, p<0.001)
	80+	18.18 (13.23-25.56, p<0.001)
Sex at Birth	Female	0.73 (0.64-0.83, p<0.001)
Chronic cardiac disease	YES	1.27 (1.10-1.46, p=0.001)
Chronic pulmonary disease	YES	1.32 (1.13-1.56, p=0.001)
Chronic neurological disorder	YES	1.53 (1.24-1.89, p<0.001)
Chronic hematologic disease	YES	1.66 (1.20-2.31, p=0.003)
Chronic kidney disease	YES	1.46 (1.23-1.75, p<0.001)
Dementia	YES	1.52 (1.25-1.85, p<0.001)
Obesity	YES	1.66 (1.32-2.08, p<0.001)
Malignancy	YES	1.21 (0.98-1.48, p=0.071)

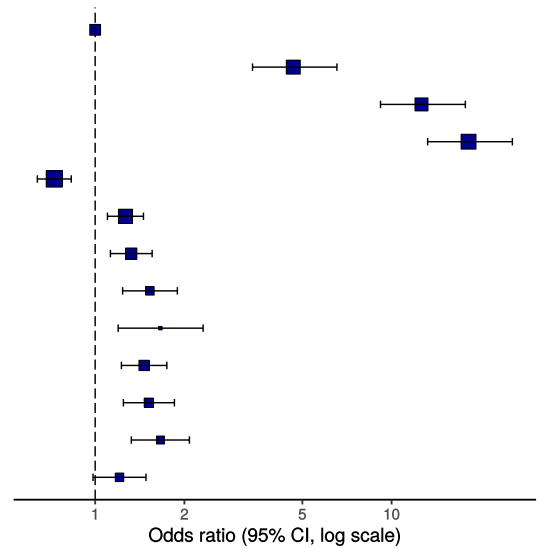
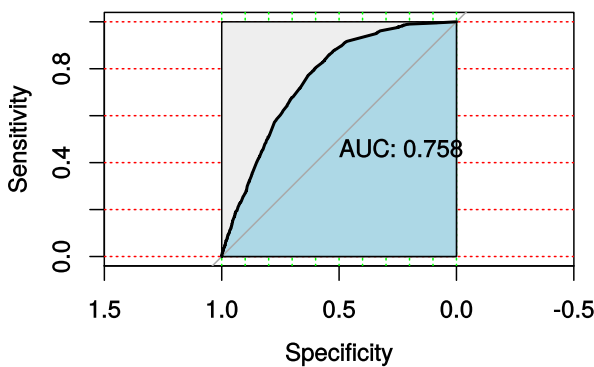


Figure 14 - ROC

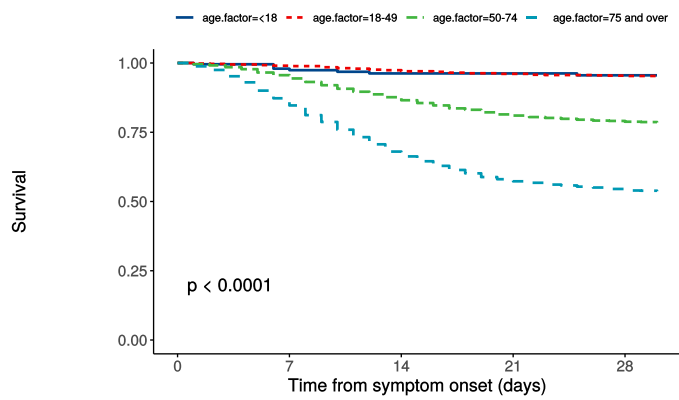


Survival models

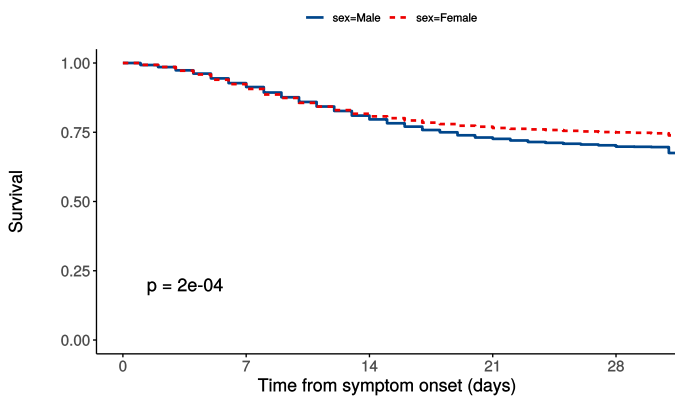
Kaplan-Meier plots for survival from symptom onset stratified by age (left) and sex (right)

Figure 15

P-value is log-rank test.



	0	7	14	21	28
age.factor=<18	224	179	157	149	139
age.factor=18-49	1505	1321	1018	888	850
age.factor=50-74	4789	3964	2719	2144	1938
age.factor=75 and over	4972	3583	2107	1549	1366



	0	7	14	21	28
sex=Male	7383	5889	3906	3036	2730
sex=Female	4844	3784	2610	2154	2009

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	1784 (15.2)	•	•
	50-69	3591 (30.6)	4.01 (3.07-5.25, p<0.001)	4.29 (2.97-6.20, p<0.001)
	70-79	2673 (22.8)	10.52 (8.10-13.66, p<0.001)	10.87 (7.58-15.60, p<0.001)
	80+	3680 (31.4)	14.74 (11.40-19.06, p<0.001)	14.14 (9.86-20.27, p<0.001)
Sex at Birth	Male	7361 (60.3)	•	•
	Female	4846 (39.7)	0.83 (0.76-0.89, p<0.001)	0.79 (0.71-0.88, p<0.001)
qSOFA score on admission	0	3506 (39.9)	•	•
	1	4254 (48.4)	1.52 (1.37-1.69, p<0.001)	1.58 (1.40-1.78, p<0.001)
	2	948 (10.8)	3.06 (2.67-3.50, p<0.001)	2.76 (2.37-3.21, p<0.001)
	3	88 (1.0)	5.43 (4.05-7.27, p<0.001)	4.35 (3.08-6.16, p<0.001)
Symptomatic at presentation	No symptoms	230 (2.0)	•	•
	Symptoms	11464 (98.0)	1.08 (0.81-1.44, p=0.608)	•
Chronic kidney disease	NO	9434 (85.3)	•	•
	YES	1628 (14.7)	1.96 (1.78-2.16, p<0.001)	1.29 (1.13-1.46, p<0.001)
Moderate/severe liver disease	NO	10799 (98.5)	•	•
	YES	170 (1.5)	1.31 (0.96-1.77, p=0.086)	•
Chronic neurological disorder	NO	9767 (89.0)	•	•
	YES	1211 (11.0)	1.88 (1.69-2.10, p<0.001)	•
Malignancy	NO	9921 (90.5)	•	•

Dependent: Surv(time, status)		all	HR (univariable)	HR (multivariable)
	YES	1042 (9.5)	1.62 (1.44-1.83, p<0.001)	1.20 (1.03-1.39, p=0.021)
Chronic hematologic disease	NO	10531 (96.3)	•	•
	YES	407 (3.7)	1.68 (1.40-2.01, p<0.001)	•
Obesity	NO	9166 (90.0)	•	•
	YES	1014 (10.0)	0.95 (0.82-1.09, p=0.455)	1.35 (1.13-1.61, p=0.001)
Diabetes with complications	NO	10301 (93.1)	•	•
	YES	761 (6.9)	1.22 (1.05-1.42, p=0.011)	•
Rheumatologic disorder	NO	9920 (90.9)	•	•
	YES	990 (9.1)	1.35 (1.19-1.53, p<0.001)	•
Dementia	NO	9640 (87.7)	•	•
	YES	1355 (12.3)	2.33 (2.10-2.58, p<0.001)	1.23 (1.07-1.42, p=0.003)
Malnutrition	NO	10269 (97.9)	•	•
	YES	217 (2.1)	1.80 (1.42-2.29, p<0.001)	•
smoking_mhyn_2levels	NO	8442 (93.9)	•	•
	YES	544 (6.1)	1.06 (0.88-1.29, p=0.524)	•
NA	NA	NA	NA	1.33 (1.19-1.48, p<0.001)

Number in dataframe = 12359, Number in model = 7101, Missing = 5258, Number of events = 1503, Concordance = 0.746 (SE = 0.006), R-squared = 0.149 (Max possible = 0.972), Likelihood ratio test = 1143.197 (df = 12, p = 0.000)

Figure 16a - Multivariable Cox proportional hazards model

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

Age on admission (years)	<50	-
	50-69	4.29 (2.97-6.20, p<0.001)
	70-79	10.87 (7.58-15.60, p<0.001)
	80+	14.14 (9.86-20.27, p<0.001)
Sex at Birth	Female	0.79 (0.71-0.88, p<0.001)
qSOFA score on admission	0	-
	1	1.58 (1.40-1.78, p<0.001)
	2	2.76 (2.37-3.21, p<0.001)
	3	4.35 (3.08-6.16, p<0.001)
Chronic cardiac disease	YES	1.33 (1.19-1.48, p<0.001)
Chronic kidney disease	YES	1.29 (1.13-1.46, p<0.001)
Malignancy	YES	1.20 (1.03-1.39, p=0.021)
Obesity	YES	1.35 (1.13-1.61, p=0.001)
Dementia	YES	1.23 (1.07-1.42, p=0.003)

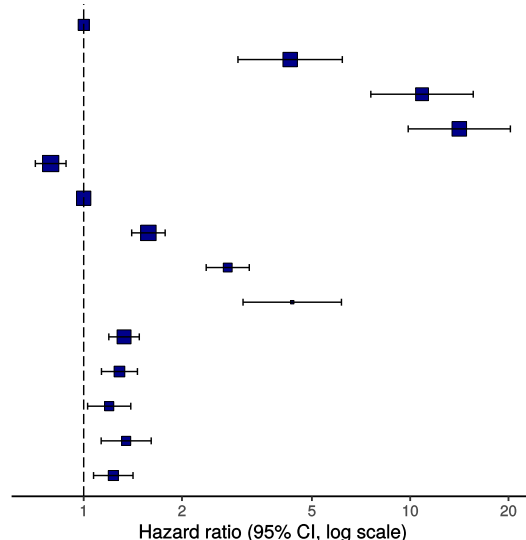
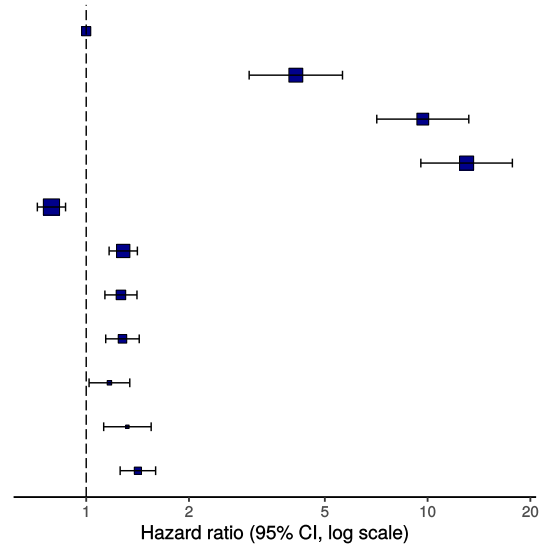


Figure 16b - Multivariable Cox proportional hazards model (age, sex, comorbidities only)

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

Age on admission (years)	<50	-
	50-69	4.11 (3.00-5.63, p<0.001)
	70-79	9.68 (7.10-13.20, p<0.001)
	80+	13.01 (9.55-17.72, p<0.001)
Sex at Birth	Female	0.79 (0.72-0.87, p<0.001)
Chronic cardiac disease	YES	1.28 (1.17-1.41, p<0.001)
Chronic pulmonary disease	YES	1.26 (1.13-1.41, p<0.001)
Chronic kidney disease	YES	1.28 (1.14-1.43, p<0.001)
Malignancy	YES	1.17 (1.02-1.34, p=0.025)
Obesity	YES	1.32 (1.13-1.55, p=0.001)
Dementia	YES	1.42 (1.26-1.60, p<0.001)



ROC = 0.7479345

Figure 17 - Predictions calibration plot

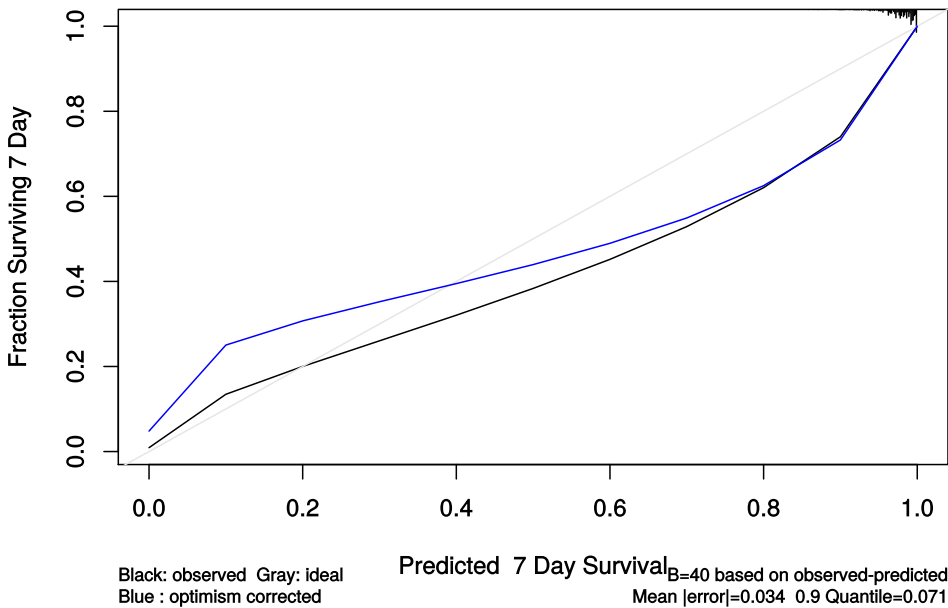


Figure 18 - Prognostic model predictions

Again, for demonstration of methods.

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

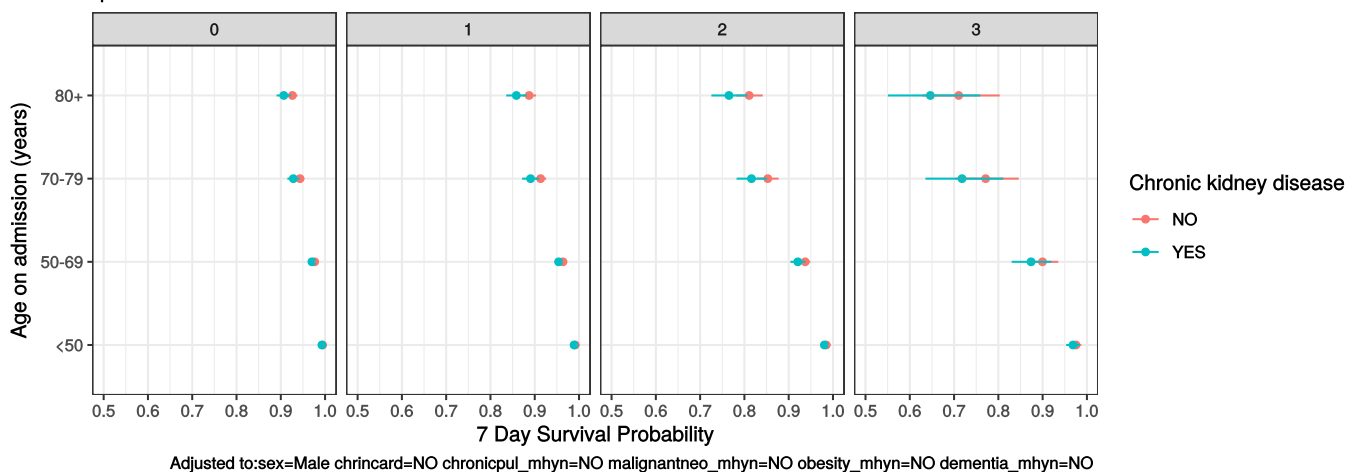


Figure 19 - Death by severity (NEWS) on admission

Number of deaths by NEWS score at admission

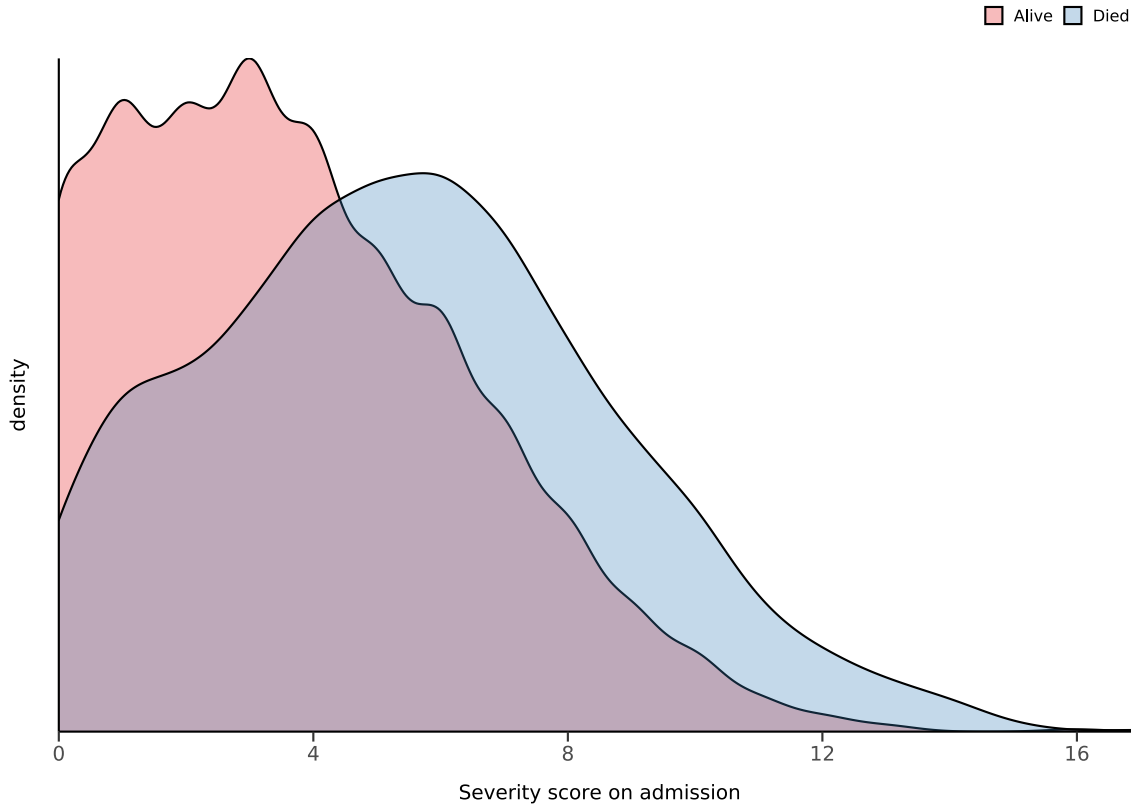


Figure 20 - Death by severity (NEWS) on admission stratified by age

Number of deaths by NEWS score at admission
Stratified by age

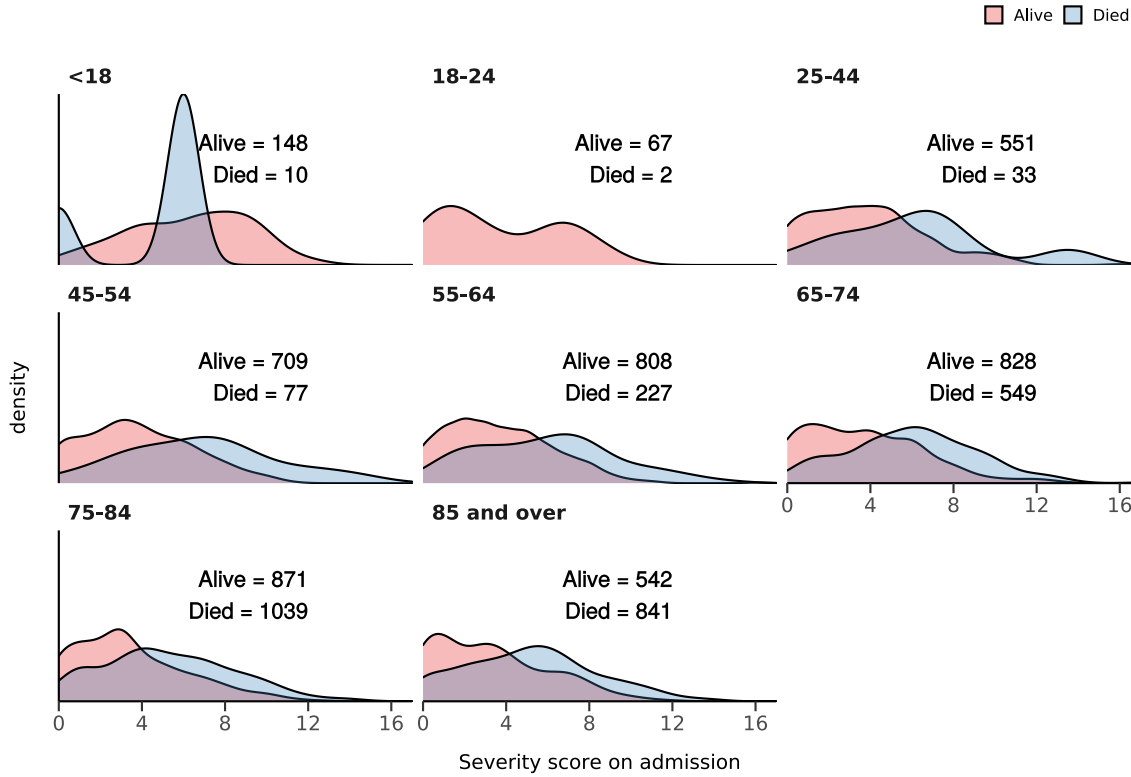
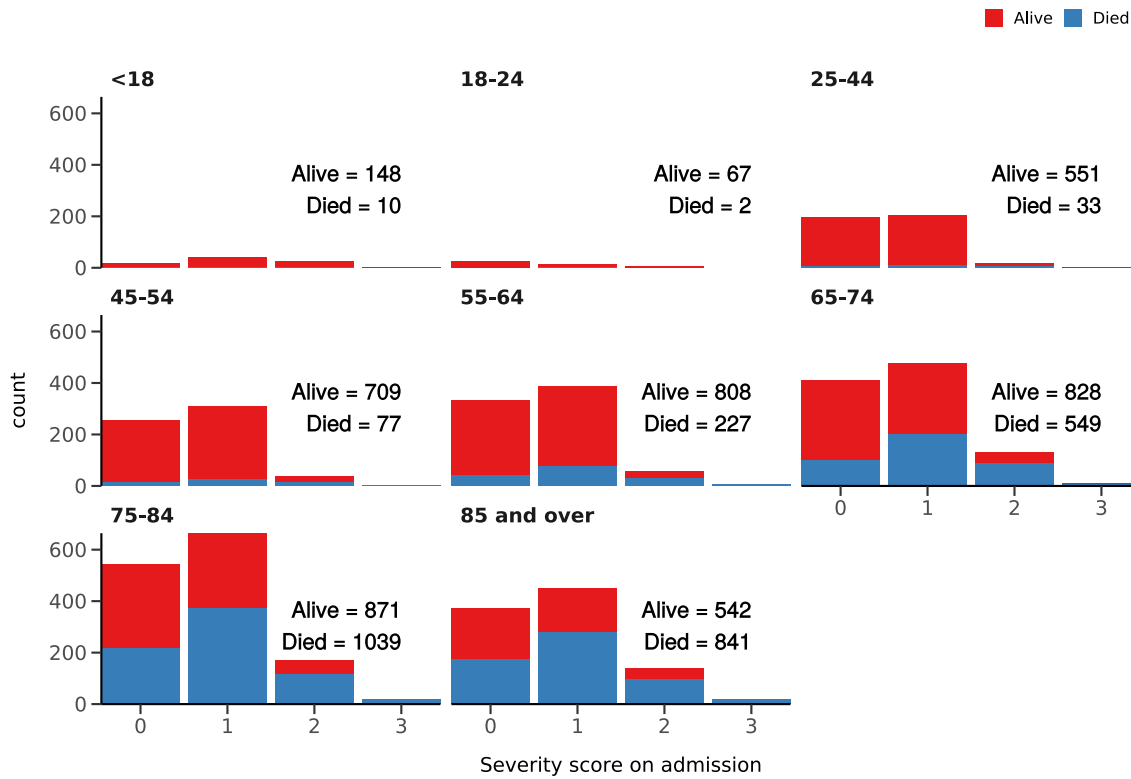


Figure 21 - Death by severity (qSOFA) on admission stratified by age

Number of deaths by qSOFA score at admission
Stratified by age



Healthcare workers

Healthcare worker		NO	YES	p
Total N (%)		11648 (95.3)	571 (4.7)	
NEWS score on admission	Median (IQR)	4.0 (4.0)	4.0 (4.0)	0.479
Death	No	3876 (60.0)	266 (94.0)	<0.001
	Yes	2589 (40.0)	17 (6.0)	

Admission (detail)

Table 1

label	levels	all
Total N (%)		18510 (100.0)
Age on admission (years)	Mean (SD)	68.3 (18.5)
Sex at Birth	Male	8566 (46.3)
	Female	5649 (30.5)
	Not specified	26 (0.1)
	(Missing)	4269 (23.1)
Healthcare worker	YES	571 (3.1)
	NO	11648 (62.9)
	N/A	1230 (6.6)
	(Missing)	5061 (27.3)

label	levels	all
Microbiology lab worker	YES	37 (0.2)
	NO	12154 (65.7)
	N/A	1256 (6.8)
	(Missing)	5063 (27.4)
Onset to admission (days)	Mean (SD)	9.7 (662.0)
Transfer from other facility	Yes-facility is a study site	227 (1.2)
	Yes-facility is not a study site	683 (3.7)
	No	11990 (64.8)
	N/A	322 (1.7)
	(Missing)	5288 (28.6)
Travel in 14 d prior to symptoms	Yes	590 (3.2)
	No	10101 (54.6)
	N/A	1816 (9.8)
	(Missing)	6003 (32.4)
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	2 (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	18 (0.1)
	Czechia	1 (0.0)
	Dominican Republic	2 (0.0)
	Egypt	7 (0.0)
	France	27 (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	3 (0.0)
	Italy	78 (0.4)
	Japan	4 (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	4 (0.0)
	Philippines	4 (0.0)
	Poland	3 (0.0)
	Portugal	13 (0.1)
	Romania	5 (0.0)
	Saudi Arabia	1 (0.0)
	Singapore	3 (0.0)
	Slovakia	1 (0.0)
	Somalia	1 (0.0)
	South Africa	7 (0.0)
	Spain	137 (0.7)
	Swaziland	1 (0.0)
	Switzerland	7 (0.0)
	Thailand	7 (0.0)
	Turkey	5 (0.0)
	United Arab Emirates	9 (0.0)
	United Kingdom	95 (0.5)
	Yemen	1 (0.0)

label	levels	all
	(Missing)	17968 (97.1)
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	5 (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)
	Portugal	1 (0.0)
	Qatar	1 (0.0)
	South Africa	1 (0.0)
	Spain	15 (0.1)
	Switzerland	1 (0.0)
	Thailand	1 (0.0)
	Turkey	4 (0.0)
	Vietnam	1 (0.0)
	(Missing)	18441 (99.6)
Animal, raw meat, insect bites 14 d prior	Yes	87 (0.5)
	No	4844 (26.2)
	Unknown	7125 (38.5)
	N/A	711 (3.8)
	(Missing)	5743 (31.0)
Animal / insect	Bee Sting	1 (1.2)
	Bird (pet)	1 (1.2)
	bird (pigeon)	1 (1.2)
	budgies	1 (1.2)

label	levels	all
	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 (3.7)
	Cats	2 (2.5)
	chicken & beef	1 (1.2)
	Chickens	1 (1.2)
	COWS	1 (1.2)
	cows, rabbits, pigs goats	1 (1.2)
	dog	3 (3.7)
	Dog	9 (11.1)
	DOG	3 (3.7)
	DOG FAMILY PET	1 (1.2)
	Dog Pet	1 (1.2)
	Dog, domestic animal living in their home.	1 (1.2)
	Dogs at home	1 (1.2)
	Domestic pet dog	1 (1.2)
	DOMESTIC ANIMAL	2 (2.5)
	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	4 (4.9)
	Domestic Pet (Dog)	6 (7.4)
	Domestic pet cat	1 (1.2)
	Domestic pet Dog	1 (1.2)
	Domestic pets	1 (1.2)
	Domestic Pets	2 (2.5)
	Domestic pets (dog)	1 (1.2)
	Domestic Pets Cat and Dog	1 (1.2)
	FARM ANIMALS - LAMBS	1 (1.2)

label	levels	all
	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 -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 (%)		18510 (100.0)
Fever	YES	8672 (46.9)
	NO	3256 (17.6)
	Unknown	701 (3.8)
	(Missing)	5881 (31.8)
Cough	YES	8801 (47.5)
	NO	3100 (16.7)
	Unknown	726 (3.9)
	(Missing)	5883 (31.8)
Cough (sputum)	YES	2656 (14.3)
	NO	7259 (39.2)
	Unknown	2564 (13.9)
	(Missing)	6031 (32.6)
Cough (blood)	YES	357 (1.9)
	NO	9285 (50.2)
	Unknown	2819 (15.2)

Stratified: all

all

	(Missing)	6049 (32.7)
Sore throat	YES	984 (5.3)
	NO	7837 (42.3)
	Unknown	3634 (19.6)
	(Missing)	6055 (32.7)
Runny nose	YES	359 (1.9)
	NO	8245 (44.5)
	Unknown	3850 (20.8)
	(Missing)	6056 (32.7)
Ear pain	YES	60 (0.3)
	NO	8539 (46.1)
	Unknown	3844 (20.8)
	(Missing)	6067 (32.8)
Wheeze	YES	1072 (5.8)
	NO	8336 (45.0)
	Unknown	3039 (16.4)
	(Missing)	6063 (32.8)
Chest pain	YES	1487 (8.0)
	NO	8490 (45.9)
	Unknown	2485 (13.4)
	(Missing)	6048 (32.7)
Muscle ache	YES	1921 (10.4)
	NO	7114 (38.4)
	Unknown	3409 (18.4)
	(Missing)	6066 (32.8)
Joint pain	YES	643 (3.5)
	NO	8012 (43.3)
	Unknown	3760 (20.3)
	(Missing)	6095 (32.9)
Fatigue	YES	4352 (23.5)
	NO	5240 (28.3)
	Unknown	2863 (15.5)
	(Missing)	6055 (32.7)
Shortness of breath	YES	8219 (44.4)
	NO	3329 (18.0)
	Unknown	1043 (5.6)

Stratified: all

all

	(Missing)	5919 (32.0)
Lower chest wall indrawing	YES	136 (0.7)
	NO	8061 (43.5)
	Unknown	4231 (22.9)
	(Missing)	6082 (32.9)
Headache	YES	1195 (6.5)
	NO	7778 (42.0)
	Unknown	3463 (18.7)
	(Missing)	6074 (32.8)
Confusion	YES	2687 (14.5)
	NO	7872 (42.5)
	Unknown	1894 (10.2)
	(Missing)	6057 (32.7)
Seizures	YES	166 (0.9)
	NO	9792 (52.9)
	Unknown	2468 (13.3)
	(Missing)	6084 (32.9)
Abdominal pain	YES	974 (5.3)
	NO	8918 (48.2)
	Unknown	2546 (13.8)
	(Missing)	6072 (32.8)
Nausea/vomiting	YES	2018 (10.9)
	NO	8328 (45.0)
	Unknown	2108 (11.4)
	(Missing)	6056 (32.7)
Diarrhoea	YES	2095 (11.3)
	NO	8224 (44.4)
	Unknown	2142 (11.6)
	(Missing)	6049 (32.7)
Conjunctivitis	YES	40 (0.2)
	NO	9187 (49.6)
	Unknown	3199 (17.3)
	(Missing)	6084 (32.9)
Skin rash	YES	174 (0.9)
	NO	9296 (50.2)
	Unknown	2961 (16.0)

Stratified: all		all
	(Missing)	6079 (32.8)
Skin ulcers	YES	232 (1.3)
	NO	9231 (49.9)
	Unknown	2972 (16.1)
	(Missing)	6075 (32.8)
Lymphadenopathy	YES	73 (0.4)
	NO	9162 (49.5)
	Unknown	3188 (17.2)
	(Missing)	6087 (32.9)
Bleeding (Haemorrhage)	YES	110 (0.6)
	NO	9685 (52.3)
	Unknown	2627 (14.2)
	(Missing)	6088 (32.9)
If Bleeding (others)	YES	208 (1.1)
	NO	9359 (50.6)
	Unknown	2739 (14.8)
	(Missing)	6204 (33.5)

Comorbidity (detail)

Table 3

Stratified: all		all
Total N (%)		18510 (100.0)
Chronic cardiac disease	YES	3676 (19.9)
	NO	8493 (45.9)
	Unknown	538 (2.9)
	(Missing)	5803 (31.4)
Chronic pulmonary disease	YES	2166 (11.7)
	NO	9955 (53.8)
	Unknown	591 (3.2)
	(Missing)	5798 (31.3)
Asthma	YES	1757 (9.5)
	NO	10304 (55.7)
	Unknown	633 (3.4)
	(Missing)	5816 (31.4)
Chronic kidney disease	YES	1850 (10.0)
	NO	10180 (55.0)

Stratified: all

all

	Unknown	639 (3.5)
	(Missing)	5841 (31.6)
Moderate/severe liver disease	YES	202 (1.1)
	NO	11728 (63.4)
	Unknown	740 (4.0)
	(Missing)	5840 (31.6)
Mild Liver disease	YES	188 (1.0)
	NO	11717 (63.3)
	Unknown	759 (4.1)
	(Missing)	5846 (31.6)
Chronic neurological disorder	YES	1313 (7.1)
	NO	10626 (57.4)
	Unknown	725 (3.9)
	(Missing)	5846 (31.6)
Malignancy	YES	1179 (6.4)
	NO	10745 (58.0)
	Unknown	750 (4.1)
	(Missing)	5836 (31.5)
Chronic hematologic disease	YES	450 (2.4)
	NO	11443 (61.8)
	Unknown	757 (4.1)
	(Missing)	5860 (31.7)
AIDS/HIV	YES	62 (0.3)
	NO	11796 (63.7)
	Unknown	810 (4.4)
	(Missing)	5842 (31.6)
Obesity	YES	1104 (6.0)
	NO	9905 (53.5)
	Unknown	1538 (8.3)
	(Missing)	5963 (32.2)
Diabetes with complications	YES	861 (4.7)
	NO	11178 (60.4)
	Unknown	639 (3.5)
	(Missing)	5832 (31.5)
Diabetes without complications	YES	2484 (13.4)
	NO	9620 (52.0)

Stratified: all

all

	Unknown	588 (3.2)
	(Missing)	5818 (31.4)
Rheumatologic disorder	YES	1108 (6.0)
	NO	10750 (58.1)
	Unknown	776 (4.2)
	(Missing)	5876 (31.7)
Dementia	YES	1517 (8.2)
	NO	10438 (56.4)
	Unknown	707 (3.8)
	(Missing)	5848 (31.6)
Malnutrition	YES	249 (1.3)
	NO	11127 (60.1)
	Unknown	1219 (6.6)
	(Missing)	5915 (32.0)
smoking_mhyn_2levels	YES	567 (3.1)
	NO	9092 (49.1)
	(Missing)	8851 (47.8)