

Dynamic CO-CIN report to SAGE and NERVTAG

[OFFICIAL-SENSITIVE PROTECT]

Dynamic content updated: 2020-04-27 18:03:30.

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 27 April 2020, CO-CIN has recruited **24670 patients** with confirmed Coronavirus (Figure 1).

The CO-CIN dataset represents 16.1% (24670/152,840) of cases of confirmed Coronavirus cases in the UK, per the PHE daily reports (last updated 9am on 26 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 806 had travelled abroad recently, and 4771 reported visiting or working in a hospital where COVID-19 cases are being managed.

The median age is 73 (range: 0-104), Male/Female 11697/7967.

The most common symptoms were cough (69%), fever (68%) and shortness of breath (65%) (Figure 3A). 712/17541 (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%). 10985/24670 (45%) of patients have reported no co morbidity. 82/1478 (6%) of women were recorded as being pregnant.

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

The median length of hospital stay was 7 days (interquartile range: 4-12, n = 11166).

1536/11701 (13%) patients required high-flow oxygen after day 1 of treatment.

Currently 4602 patient(s) have died and 2894 required ICU. 7025 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).

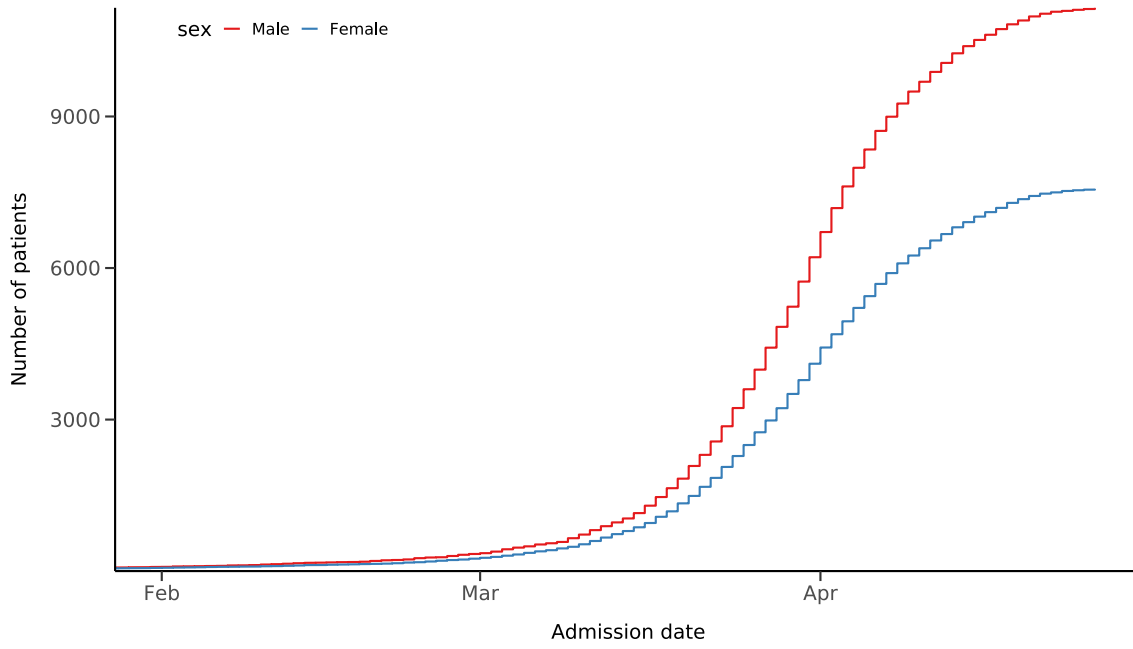
Analytics: Lisa Norman, Riinu Pius, Thomas Drake, Cameron Fairfield, Stephen Knight, Kenneth McLean, Katie Shaw.

Admission

Figure 1

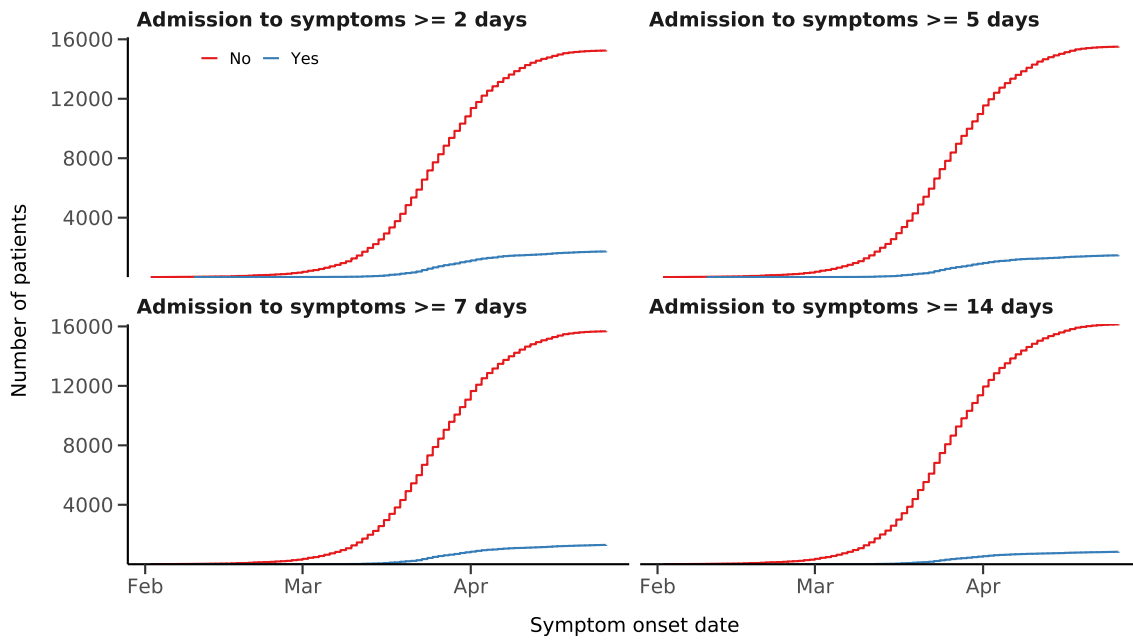
Hospital admission with COVID-19 by sex

Figure 1A

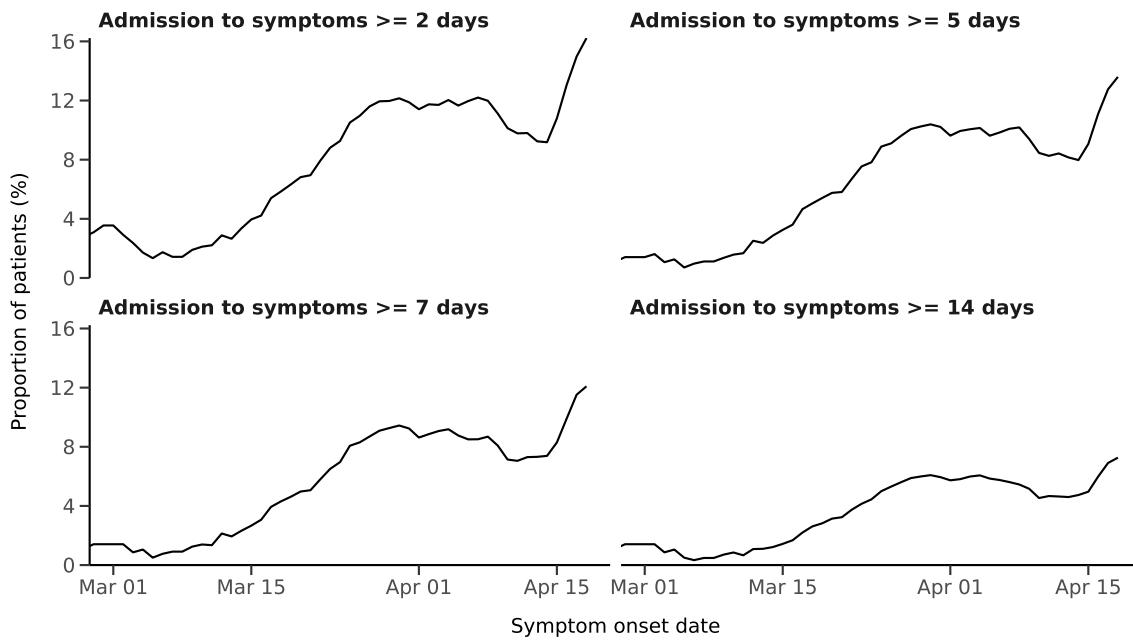


Number with symptom onset occurring after admission to hospital

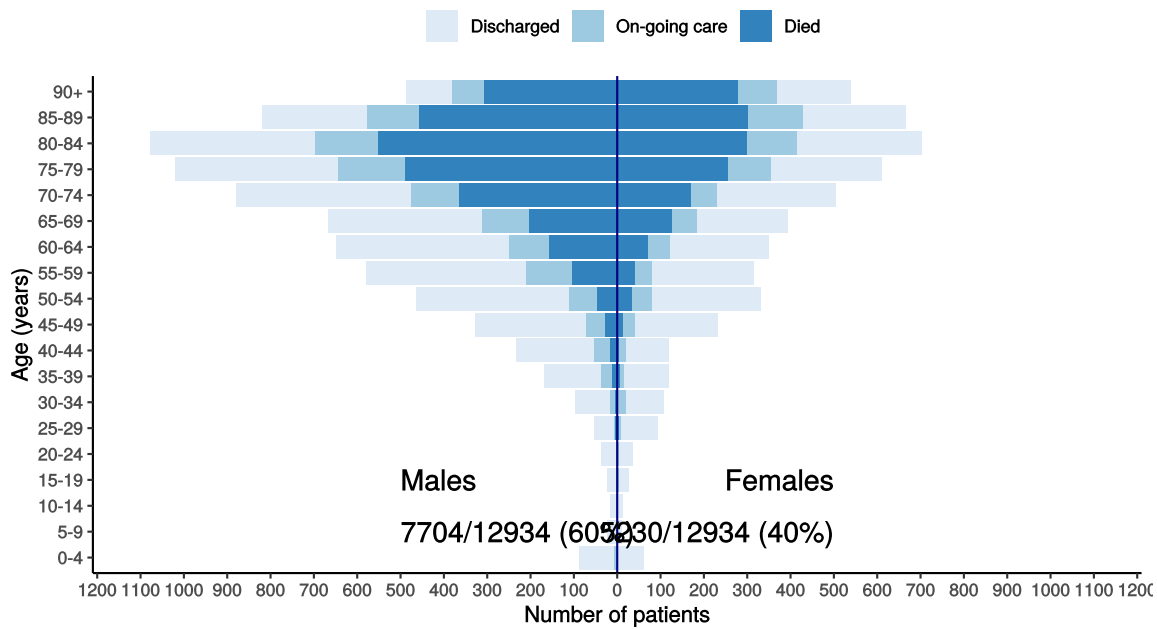
Figure 1B



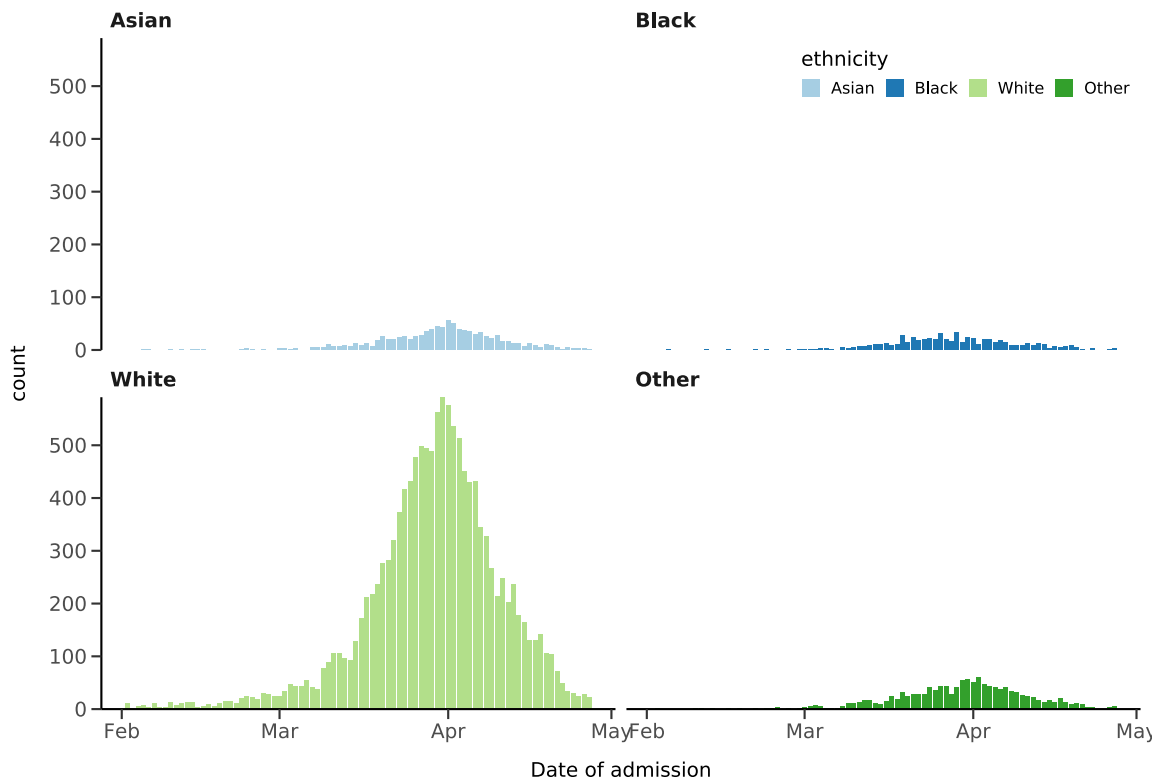
Proportion with symptom onset occurring after hospital admission
 Figure 1C - 7-day rolling percentage. n = 16981



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



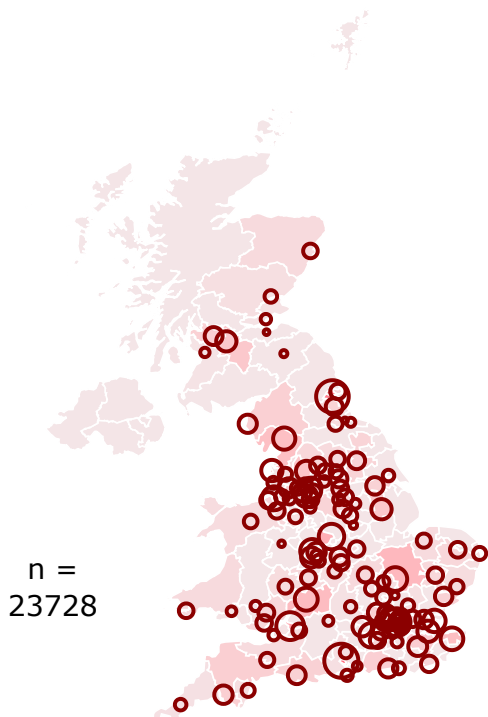
Hospital admission with COVID-19 by ethnicity
Figure 1E



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 = 17358) Comorbidity (% patients, n = 17410)

Figure 3A

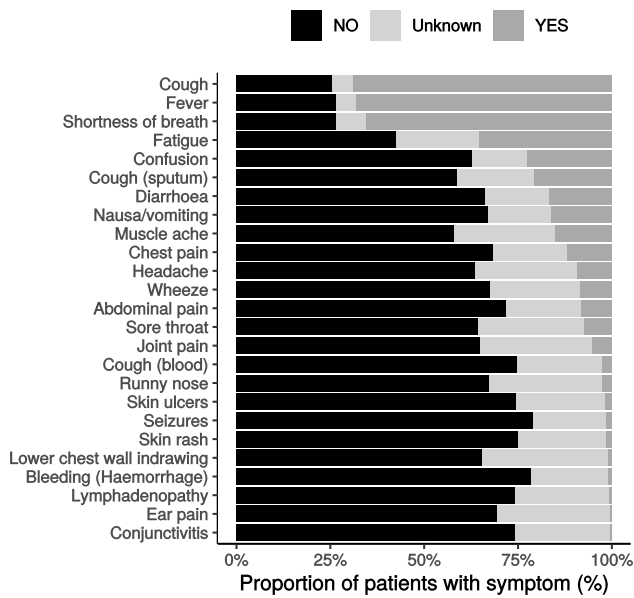


Figure 3B

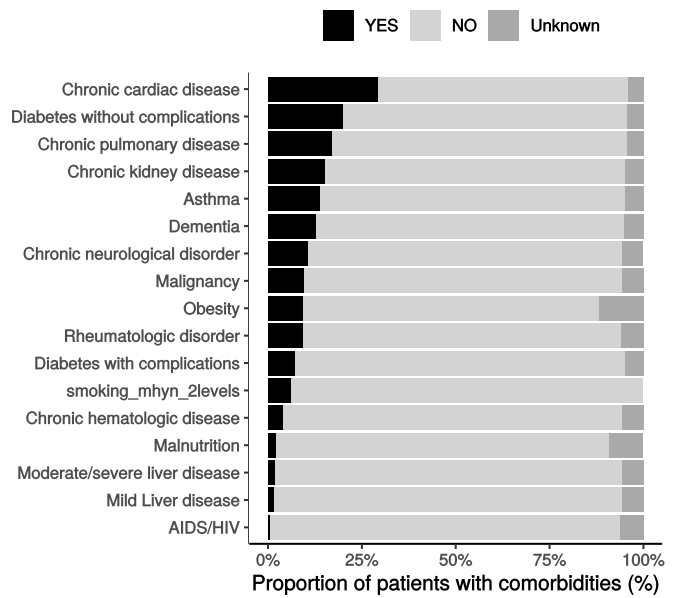
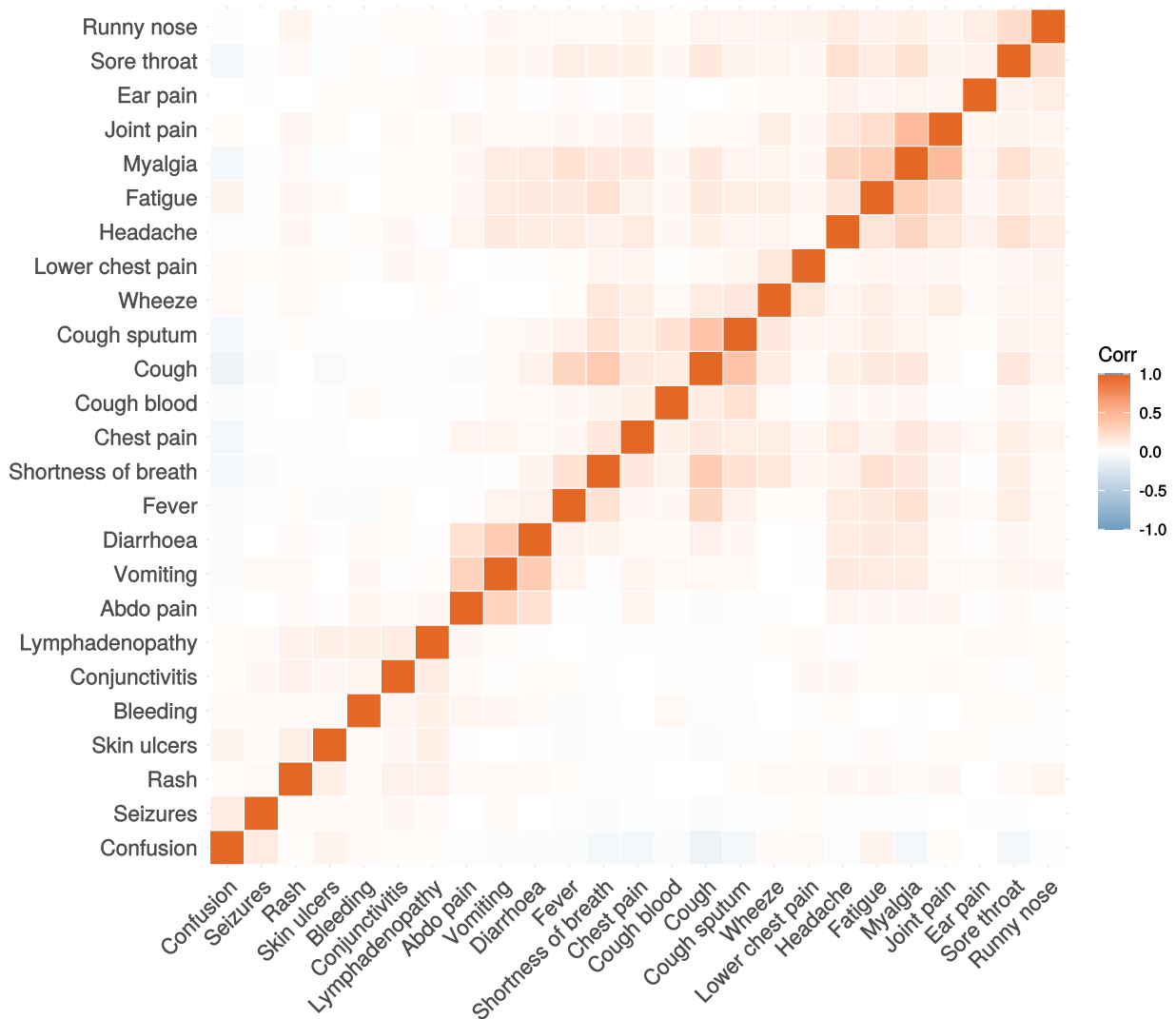


Figure 3C

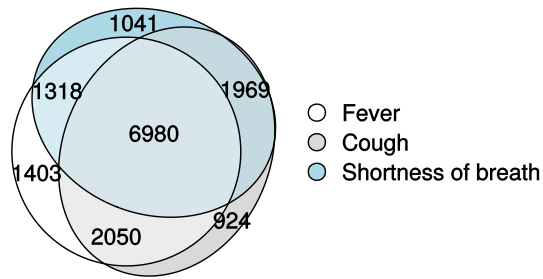
Correlation of symptoms in all pages. Note clusters, top right to bottom left, flu-like, coryzal, abdominal, respiratory, neurocutaneous.



Symptoms (diagnostic criteria)

Figure 4A

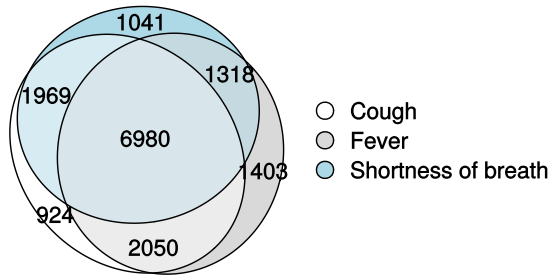
n = 17358



Symptoms (most common)

Figure 4B

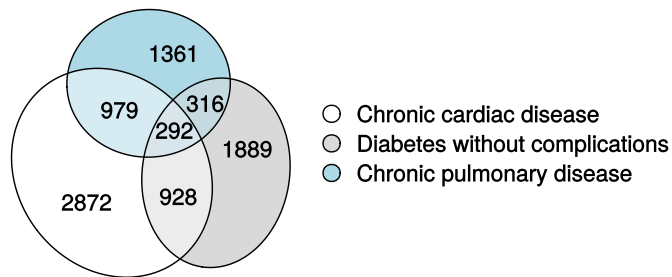
n = 17358



Comorbidity (most common)

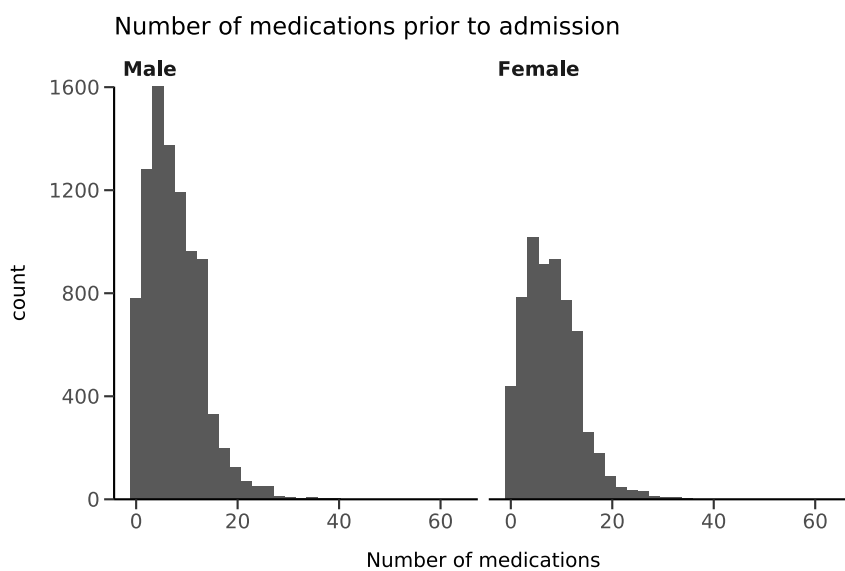
Figure 4C

n = 17410



Medication prior to illness

Figure 5

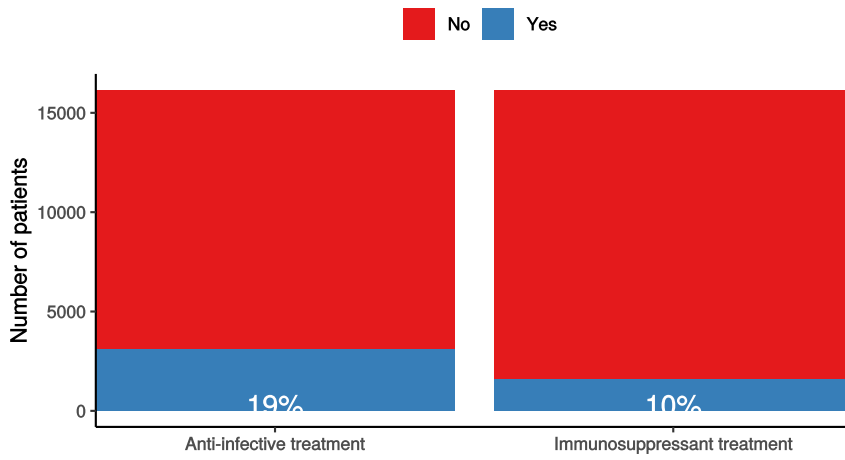


Preadmission treatment

Figure 6

Pre-admission treatment

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



Patient flow

Figure 7A - All patients

N = 17867

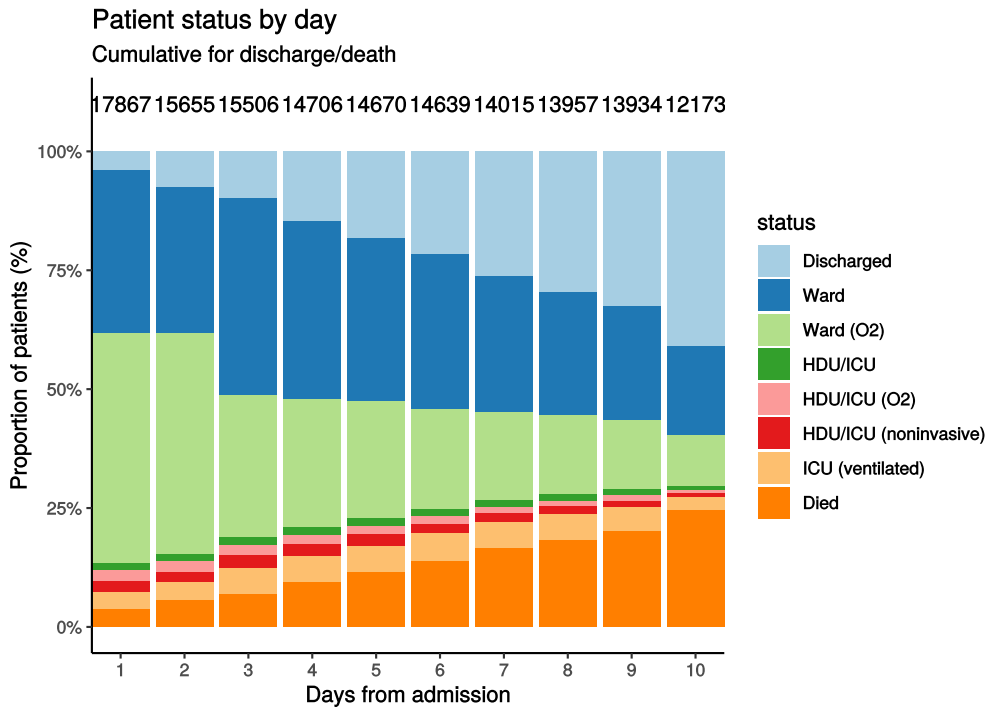
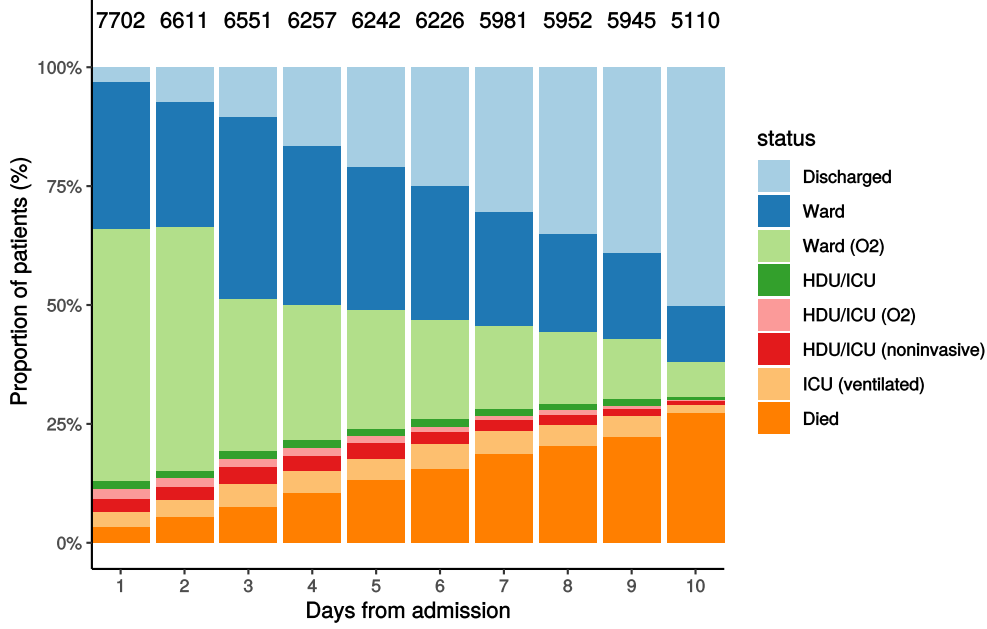


Figure 7B - Patients admitted ≥ 14 days and ≤ 28 days ago

N = 7702

Patient status by day
Cumulative for discharge/death



Oxygen requirement

Figure 8A - All patients

N = 16227

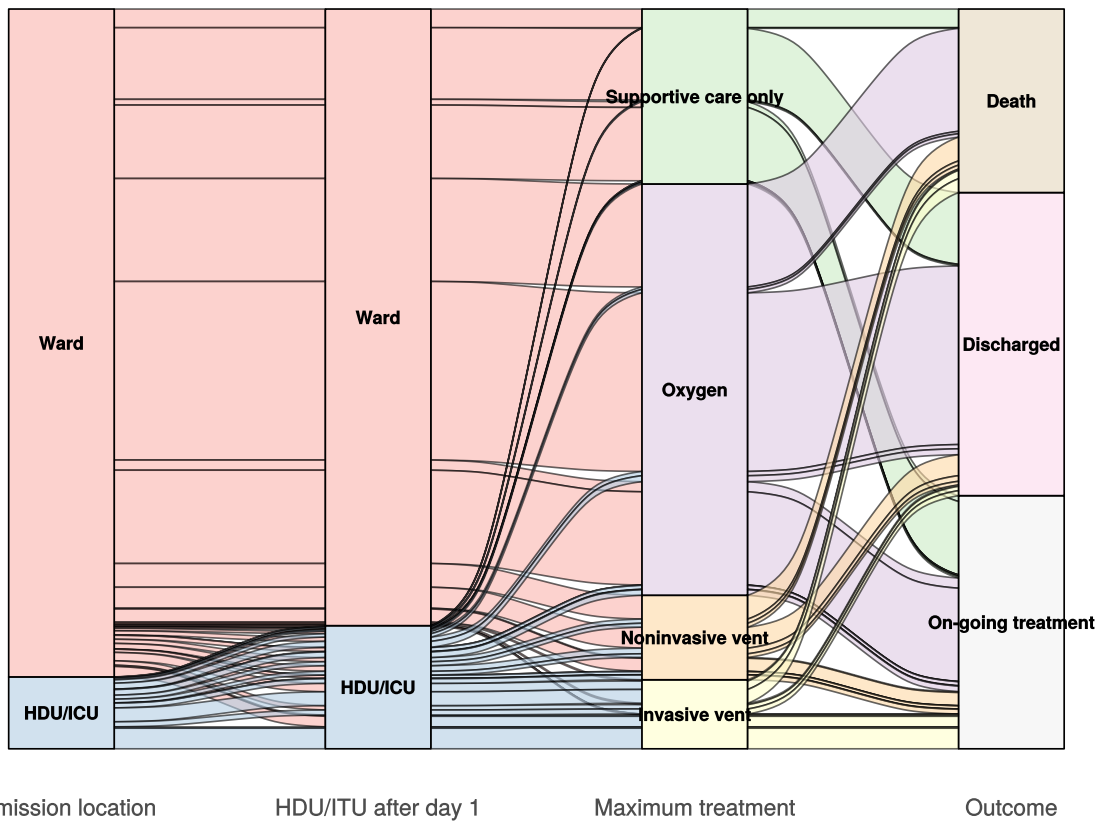
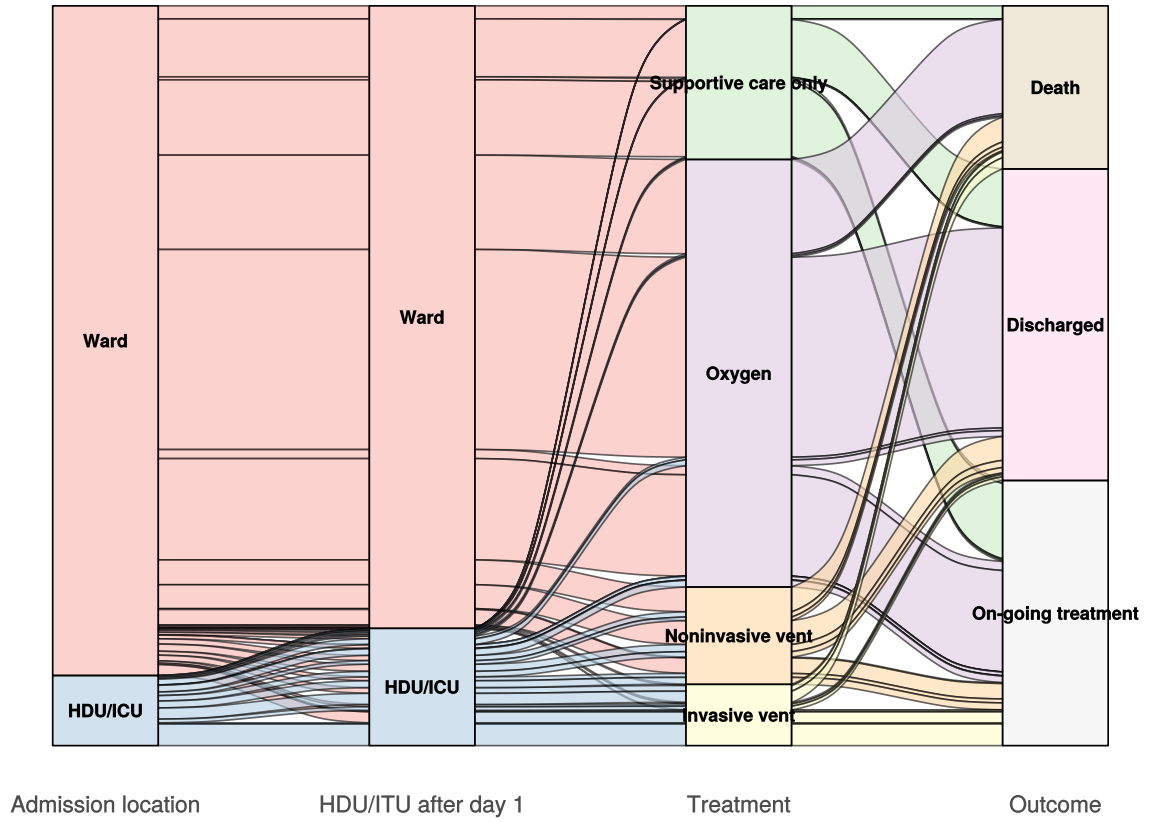


Figure 8B - Patients admitted ≥ 14 days and ≤ 28 days ago

N = 7059

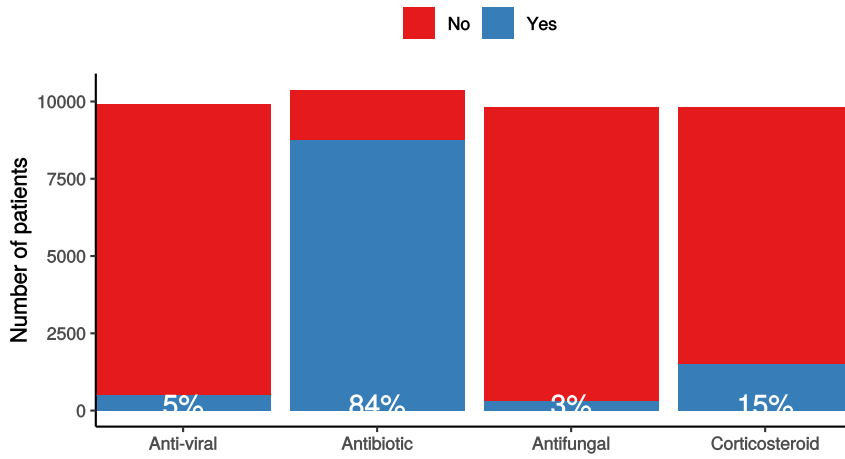


In-hospital medical treatment

Figure 9

In-hospital treatment

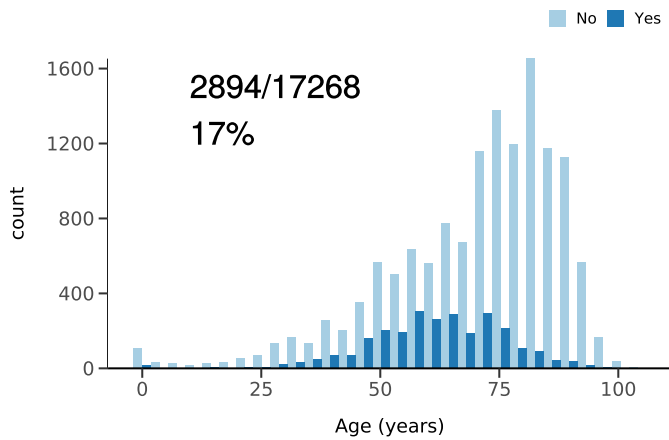
Anti-virals, antibiotics, corticosteroids, and anti-fungals for patients who have cc



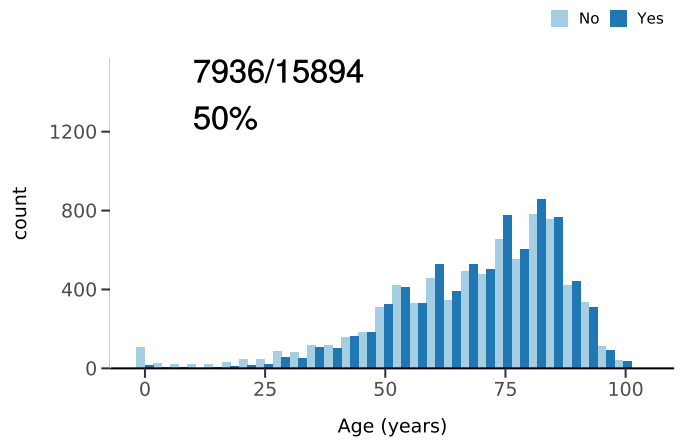
Treatment

Figure 10

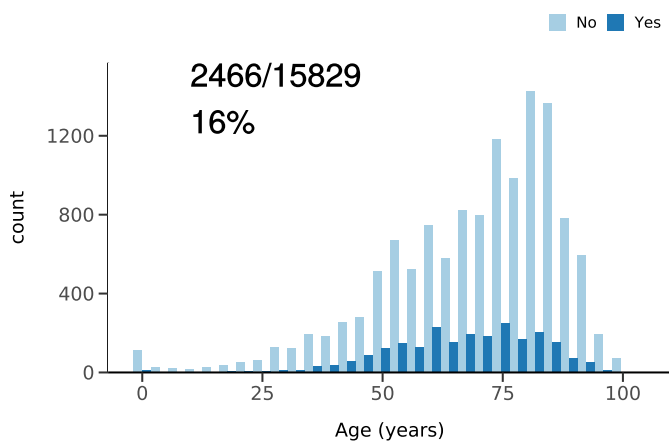
ICU/HDU admission
Figure 10A



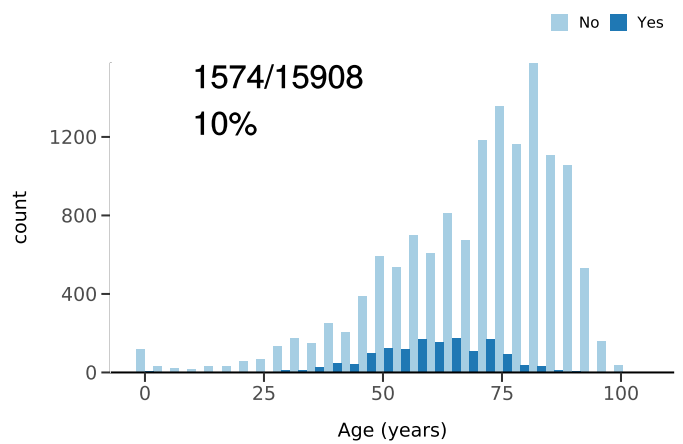
High flow oxygen
Figure 10B



Noninvasive ventilation
Figure 10C



Invasive ventilation
Figure 10D

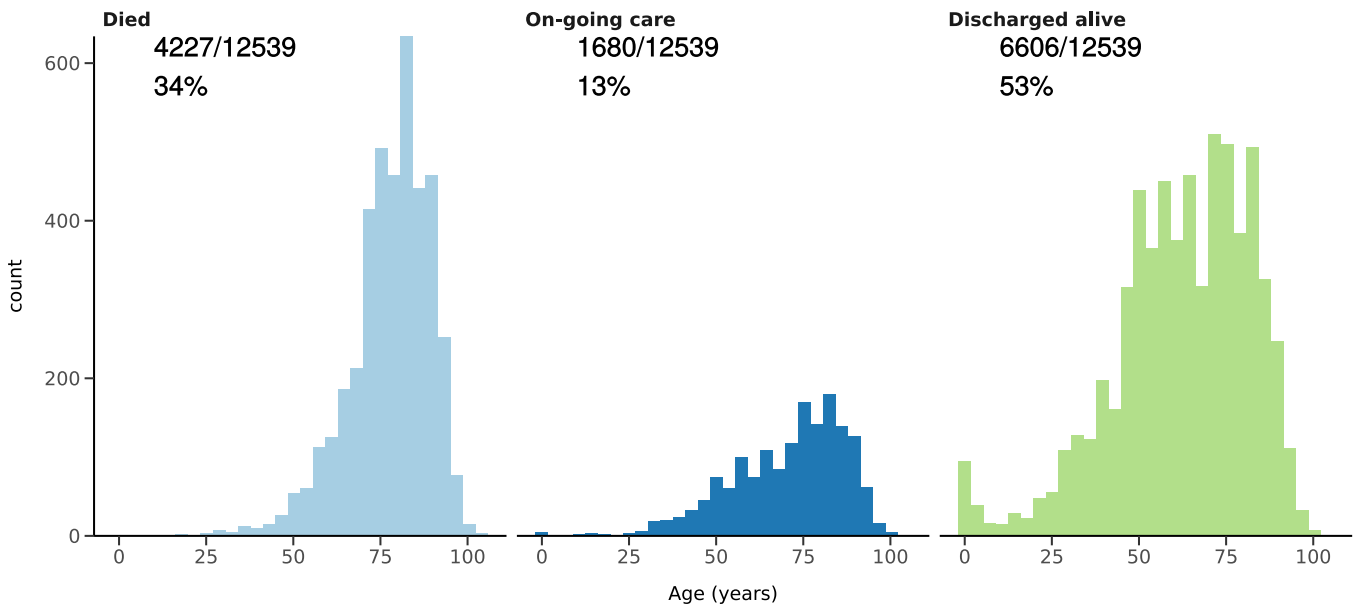


Status in patients admitted ≥ 14 days from today

Figure 11

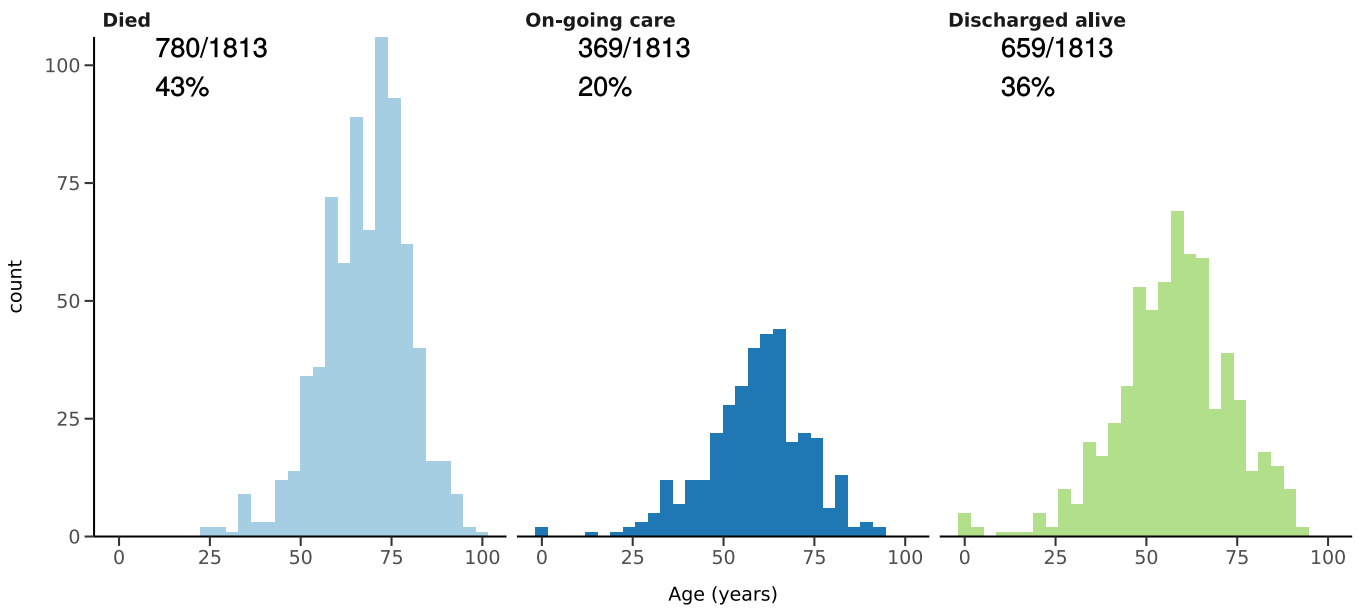
All: status in patients admitted ≥ 14 days ago

Figure 11A



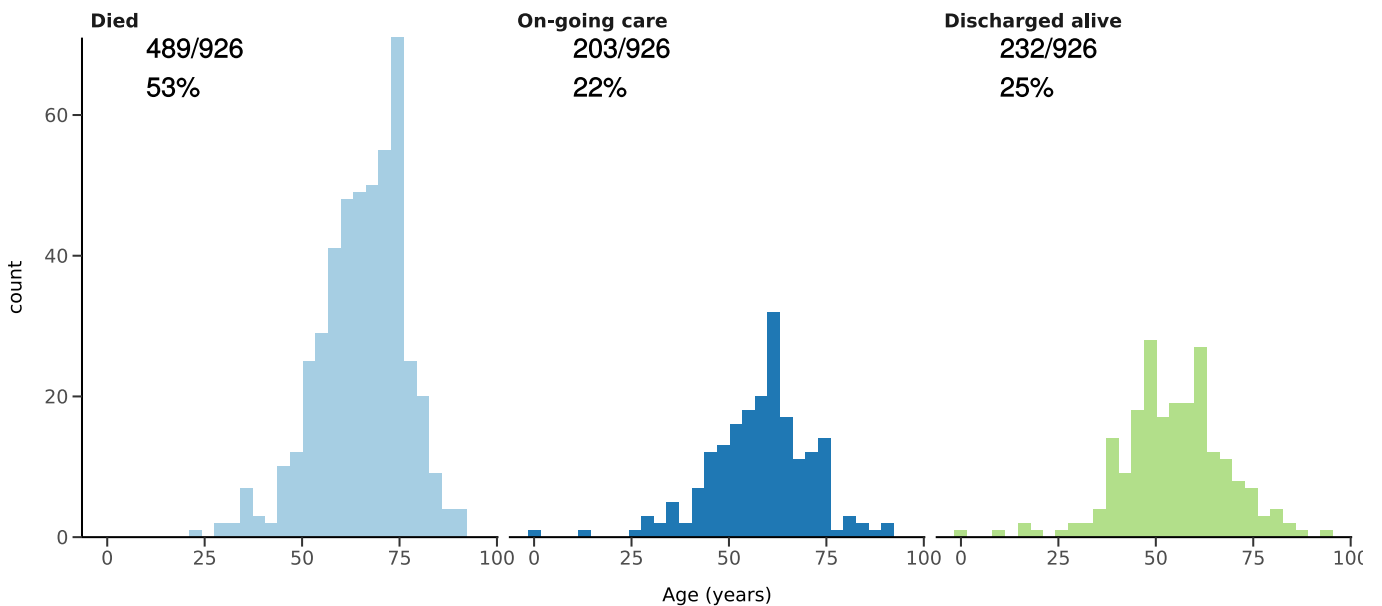
ICU/HDU admissions: status in patients admitted ≥ 14 days ago

Figure 11B



Invasive ventilation: status in patients admitted ≥ 14 days ago

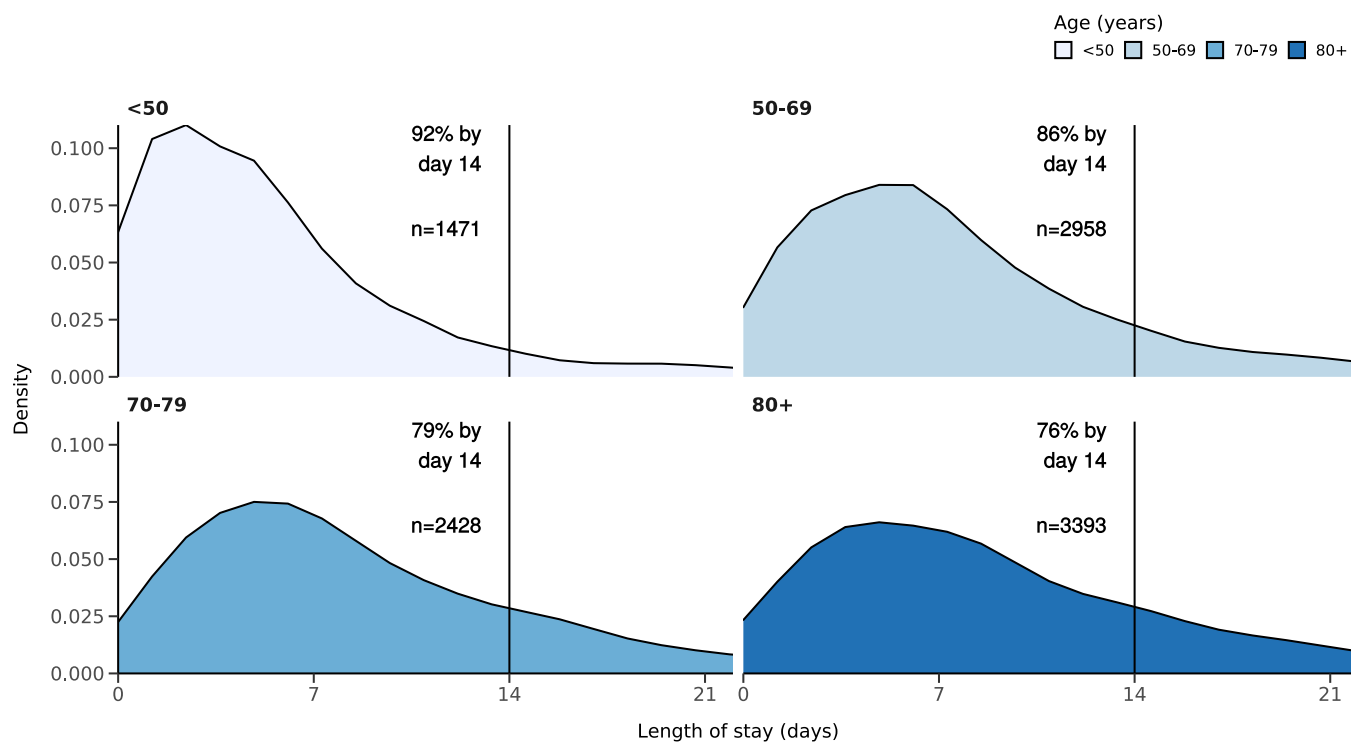
Figure 11c



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	1510 (94.4)	89 (5.6)	•	•	
	50-69	2383 (76.3)	739 (23.7)	5.26 (4.21-6.66, p<0.001)	4.81 (3.73-6.29, p<0.001)	
	70-79	1357 (53.2)	1196 (46.8)	14.95 (11.98-18.89, p<0.001)	12.21 (9.45-16.01, p<0.001)	
	80+	1562 (43.3)	2045 (56.7)	22.21 (17.87-27.96, p<0.001)	17.74 (13.73-23.26, p<0.001)	
Sex at Birth	Male	4044 (60.2)	2675 (39.8)	•	•	
	Female	3019 (66.2)	1538 (33.8)	0.77 (0.71-0.83, p<0.001)	0.70 (0.63-0.77, p<0.001)	
Chronic cardiac disease	NO	5055 (69.5)	2214 (30.5)	•	•	
	YES	1544 (49.4)	1582 (50.6)	2.34 (2.15-2.55, p<0.001)	1.24 (1.12-1.38, p<0.001)	
Chronic pulmonary disease	NO	5657 (66.5)	2854 (33.5)	•	•	
	YES	913 (49.5)	932 (50.5)	2.02 (1.83-2.24, p<0.001)	1.42 (1.26-1.61, p<0.001)	
Chronic neurological disorder	NO	5924 (64.9)	3208 (35.1)	•	•	
	YES	569 (52.3)	519 (47.7)	1.68 (1.48-1.91, p<0.001)	1.40 (1.19-1.64, p<0.001)	
Chronic hematologic disease	NO	6256 (64.2)	3492 (35.8)	•	•	
	YES	222 (50.2)	220 (49.8)	1.78 (1.47-2.15, p<0.001)	1.33 (1.05-1.69, p=0.020)	
Chronic kidney disease	NO	5784 (66.8)	2880 (33.2)	•	•	

Dependent: death		No	Yes	OR (univariable)	OR (multivariable)
Dementia	YES	748 (46.1)	875 (53.9)	2.35 (2.11-2.62, p<0.001)	1.49 (1.30-1.70, p<0.001)
	NO	5983 (66.7)	2984 (33.3)	•	•
Obesity	YES	529 (41.3)	751 (58.7)	2.85 (2.53-3.21, p<0.001)	1.51 (1.30-1.75, p<0.001)
	NO	5432 (63.9)	3075 (36.1)	•	•
Malignancy	YES	608 (64.7)	332 (35.3)	0.96 (0.84-1.11, p=0.616)	1.52 (1.28-1.80, p<0.001)
	NO	5950 (64.9)	3212 (35.1)	•	•
	YES	541 (52.7)	486 (47.3)	1.66 (1.46-1.89, p<0.001)	1.15 (0.98-1.34, p=0.091)

Number in dataframe = 17060, Number in model = 8716, Missing = 8344, AIC = 9656.1, C-statistic = 0.751, H&L = Chi-sq(8) 37.39 (p<0.001)

Figure 13 - Adjusted odds ratio plot

Death

Age on admission (years)	<50	-
	50-69	4.81 (3.73-6.29, p<0.001)
	70-79	12.21 (9.45-16.01, p<0.001)
	80+	17.74 (13.73-23.26, p<0.001)
Sex at Birth	Female	0.70 (0.63-0.77, p<0.001)
Chronic cardiac disease	YES	1.24 (1.12-1.38, p<0.001)
Chronic pulmonary disease	YES	1.42 (1.26-1.61, p<0.001)
Chronic neurological disorder	YES	1.40 (1.19-1.64, p<0.001)
Chronic hematologic disease	YES	1.33 (1.05-1.69, p=0.020)
Chronic kidney disease	YES	1.49 (1.30-1.70, p<0.001)
Dementia	YES	1.51 (1.30-1.75, p<0.001)
Obesity	YES	1.52 (1.28-1.80, p<0.001)
Malignancy	YES	1.15 (0.98-1.34, p=0.091)

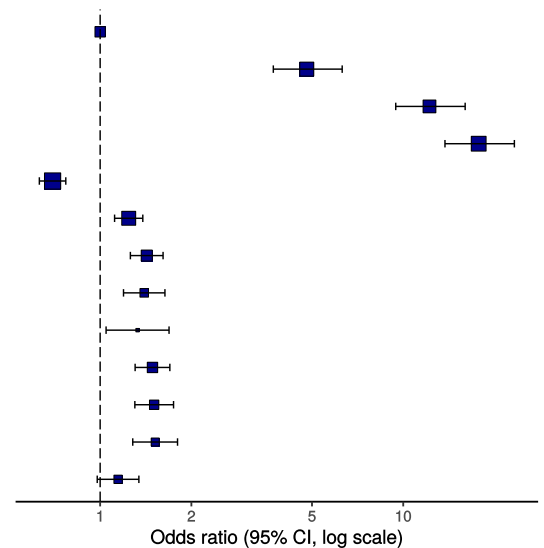
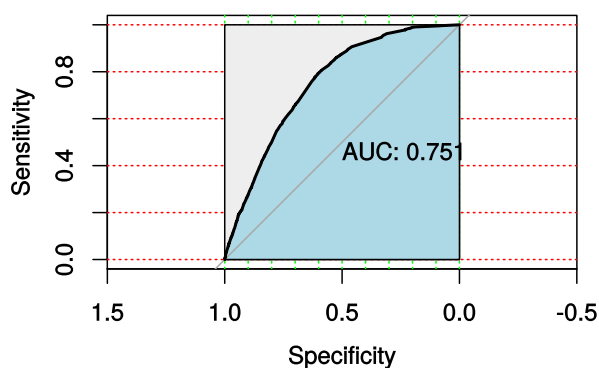


Figure 14 - ROC

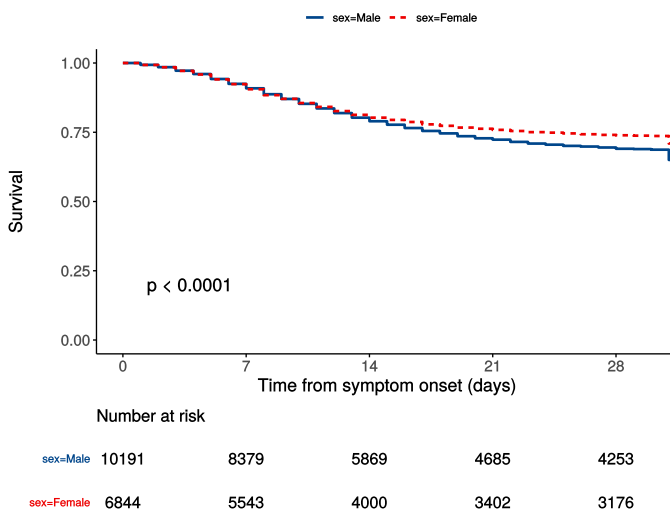
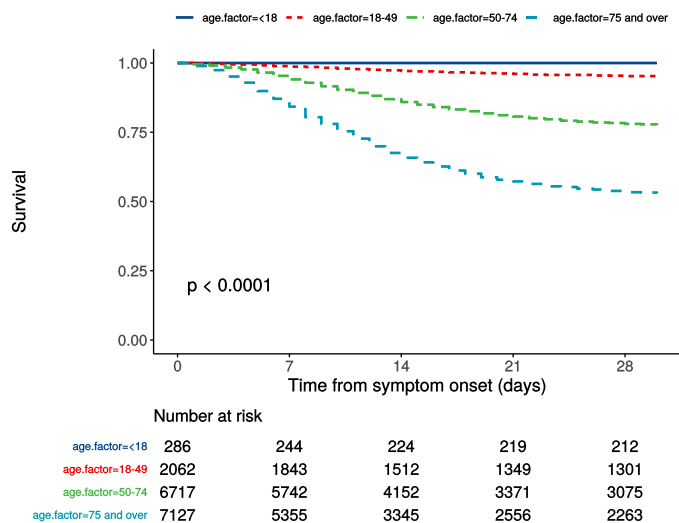


Survival models

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	2410 (14.6)	•	•
	50-69	5015 (30.5)	4.71 (3.73-5.94, $p < 0.001$)	4.68 (3.45-6.35, $p < 0.001$)
	70-79	3754 (22.8)	11.77 (9.37-14.78, $p < 0.001$)	11.23 (8.32-15.16, $p < 0.001$)
	80+	5280 (32.1)	16.45 (13.13-20.59, $p < 0.001$)	14.56 (10.79-19.66, $p < 0.001$)
Sex at Birth	Male	10127 (59.8)	•	•
	Female	6817 (40.2)	0.83 (0.78-0.89, $p < 0.001$)	0.78 (0.71-0.84, $p < 0.001$)
qSOFA score on admission	0	4919 (39.6)	•	•
	1	5971 (48.1)	1.51 (1.39-1.65, $p < 0.001$)	1.60 (1.46-1.76, $p < 0.001$)
	2	1378 (11.1)	2.92 (2.63-3.26, $p < 0.001$)	2.67 (2.37-3.02, $p < 0.001$)
	3	140 (1.1)	5.14 (4.09-6.47, $p < 0.001$)	4.08 (3.15-5.28, $p < 0.001$)
Symptomatic at presentation	No symptoms	323 (2.0)	•	•
	Symptoms	15897 (98.0)	1.07 (0.85-1.36, $p = 0.550$)	•
Chronic kidney disease	NO	12961 (84.7)	•	•
	YES	2344 (15.3)	1.98 (1.84-2.14, $p < 0.001$)	1.32 (1.20-1.46, $p < 0.001$)
Moderate/severe liver disease	NO	14952 (98.4)	•	•
	YES	240 (1.6)	1.27 (1.00-1.62, $p = 0.049$)	•
Chronic neurological disorder	NO	13542 (89.1)	•	•
	YES	1660 (10.9)	1.68 (1.53-1.83, $p < 0.001$)	•
Malignancy	NO	13732 (90.4)	•	•

Dependent: Surv(time, status)		all	HR (univariable)	HR (multivariable)
	YES	1456 (9.6)	1.54 (1.40-1.70, p<0.001)	1.09 (0.97-1.23, p=0.155)
Chronic hematologic disease	NO	14556 (96.0)	•	•
	YES	599 (4.0)	1.55 (1.34-1.78, p<0.001)	•
Obesity	NO	12669 (89.6)	•	•
	YES	1473 (10.4)	0.92 (0.81-1.03, p=0.140)	1.33 (1.16-1.53, p<0.001)
Diabetes with complications	NO	14224 (92.9)	•	•
	YES	1094 (7.1)	1.27 (1.13-1.43, p<0.001)	•
Rheumatologic disorder	NO	13684 (90.5)	•	•
	YES	1429 (9.5)	1.23 (1.11-1.36, p<0.001)	•
Dementia	NO	13251 (86.9)	•	•
	YES	2006 (13.1)	2.28 (2.10-2.47, p<0.001)	1.23 (1.10-1.37, p<0.001)
Malnutrition	NO	14278 (97.8)	•	•
	YES	325 (2.2)	1.66 (1.37-2.01, p<0.001)	•
smoking_mhyn_2levels	NO	11847 (93.9)	•	•
	YES	764 (6.1)	1.01 (0.86-1.18, p=0.907)	•
NA	NA	NA	NA	1.29 (1.18-1.40, p<0.001)

Number in dataframe = 17158, Number in model = 10170, Missing = 6988, Number of events = 2399, Concordance = 0.740 (SE = 0.005), R-squared = 0.156(Max possible = 0.985), Likelihood ratio test = 1721.689 (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	4.68 (3.45-6.35, p<0.001)
	70-79	11.23 (8.32-15.16, p<0.001)
	80+	14.56 (10.79-19.66, p<0.001)
Sex at Birth	Female	0.78 (0.71-0.84, p<0.001)
qSOFA score on admission	0	-
	1	1.60 (1.46-1.76, p<0.001)
	2	2.67 (2.37-3.02, p<0.001)
	3	4.08 (3.15-5.28, p<0.001)
Chronic cardiac disease	YES	1.29 (1.18-1.40, p<0.001)
Chronic kidney disease	YES	1.32 (1.20-1.46, p<0.001)
Malignancy	YES	1.09 (0.97-1.23, p=0.155)
Obesity	YES	1.33 (1.16-1.53, p<0.001)
Dementia	YES	1.23 (1.10-1.37, p<0.001)

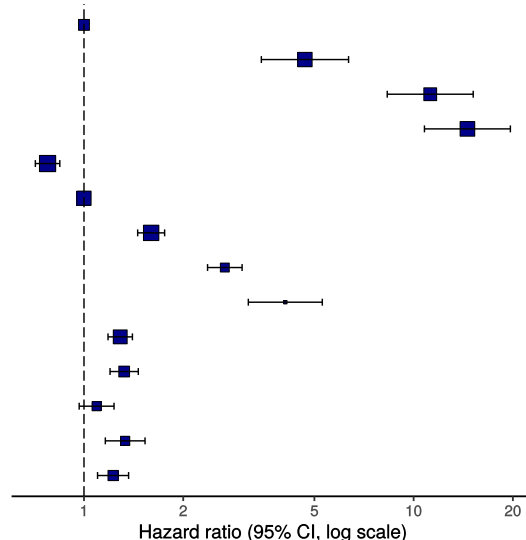
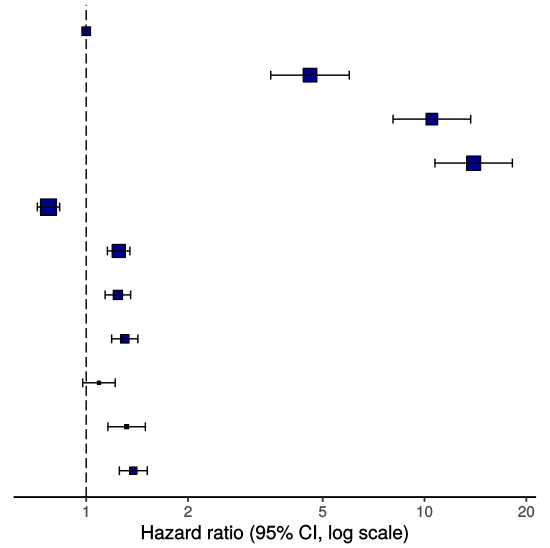


Figure 16b - Multivariable Cox proportional hazards model (age, sex, comorbidities only)

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

Age on admission (years)	<50	-
	50-69	4.59 (3.51-5.99, p<0.001)
	70-79	10.51 (8.07-13.70, p<0.001)
	80+	13.98 (10.74-18.19, p<0.001)
Sex at Birth	Female	0.77 (0.72-0.83, p<0.001)
Chronic cardiac disease	YES	1.25 (1.16-1.35, p<0.001)
Chronic pulmonary disease	YES	1.24 (1.14-1.35, p<0.001)
Chronic kidney disease	YES	1.30 (1.19-1.42, p<0.001)
Malignancy	YES	1.09 (0.98-1.22, p=0.125)
Obesity	YES	1.32 (1.16-1.50, p<0.001)
Dementia	YES	1.38 (1.25-1.52, p<0.001)



ROC = 0.7409107

Figure 17 - Predictions calibration plot

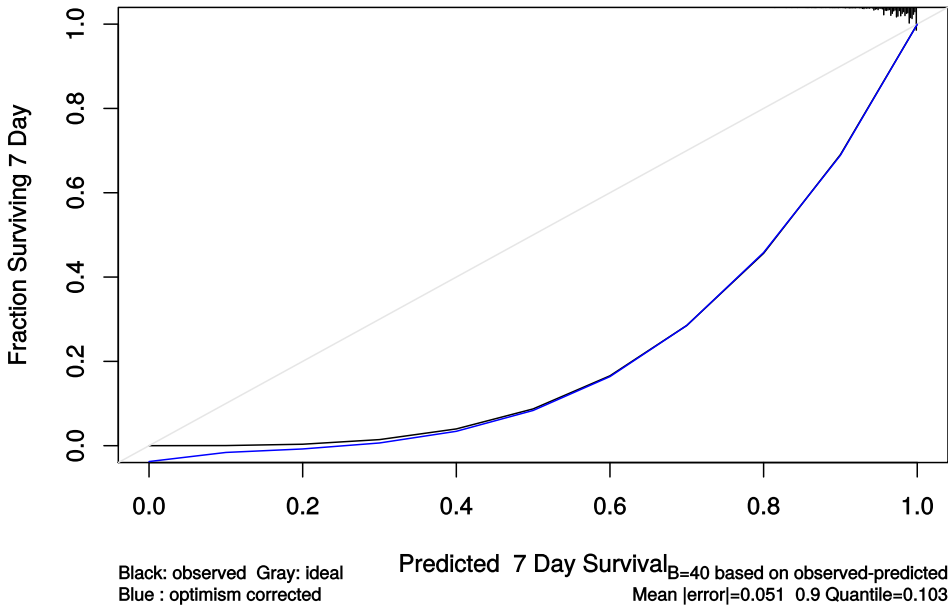


Figure 18 - Prognostic model predictions

Again, for demonstration of methods.

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

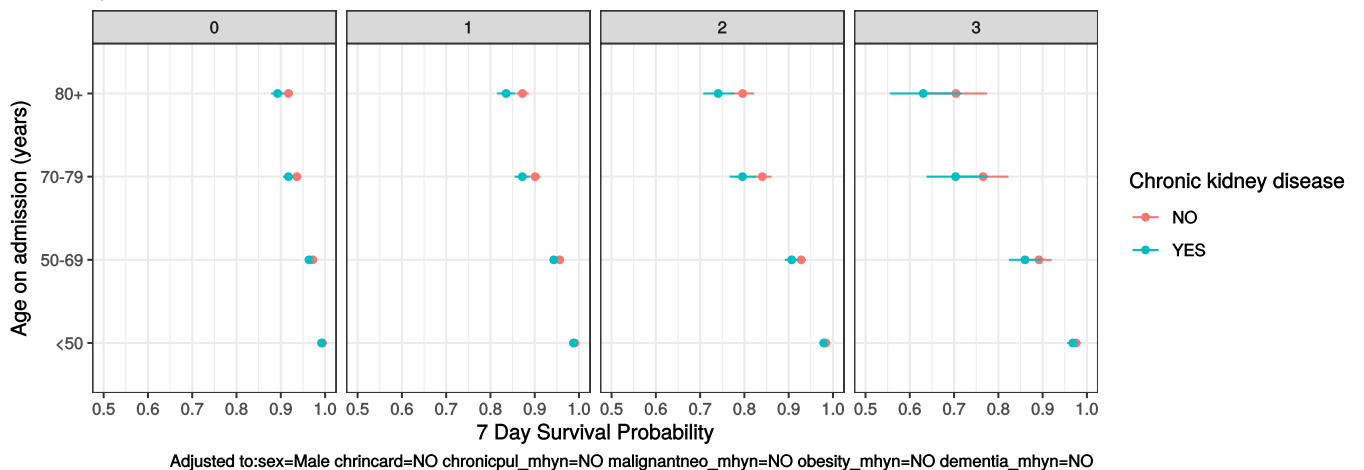


Figure 19 - Death by severity (NEWS) on admission

Number of deaths by NEWS score at admission

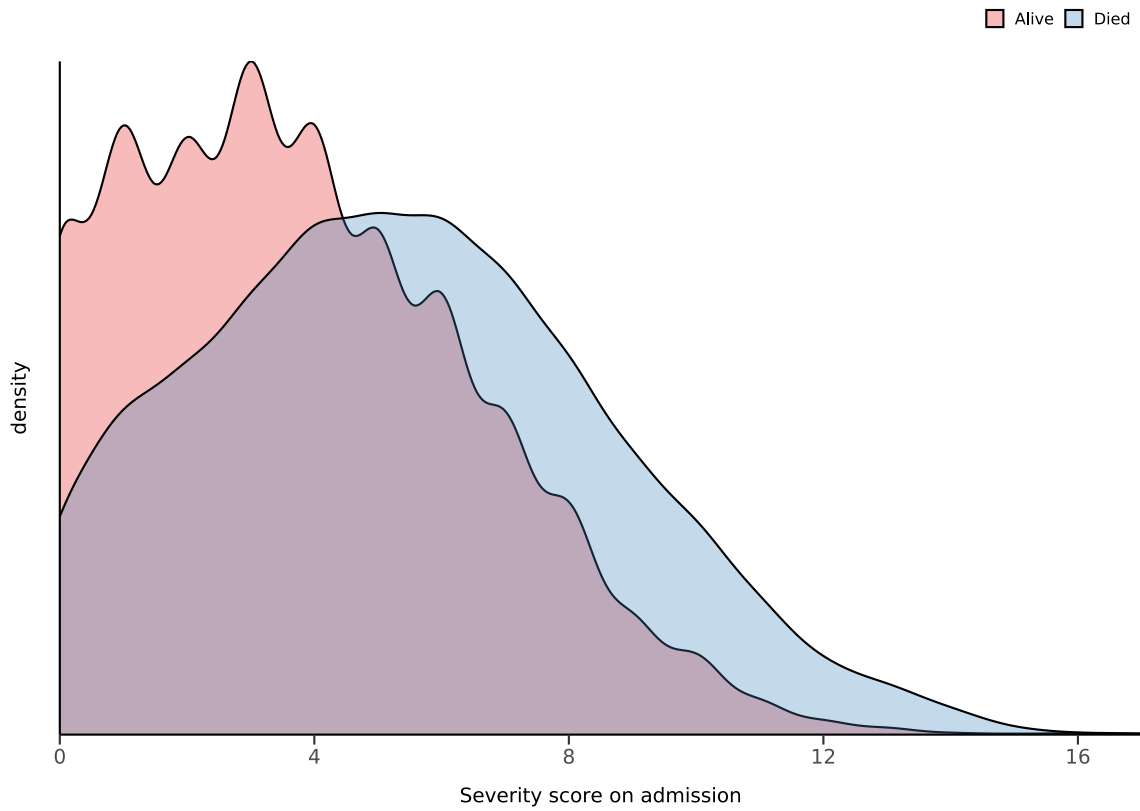


Figure 20 - Death by severity (NEWS) on admission stratified by age

Number of deaths by NEWS score at admission
Stratified by age

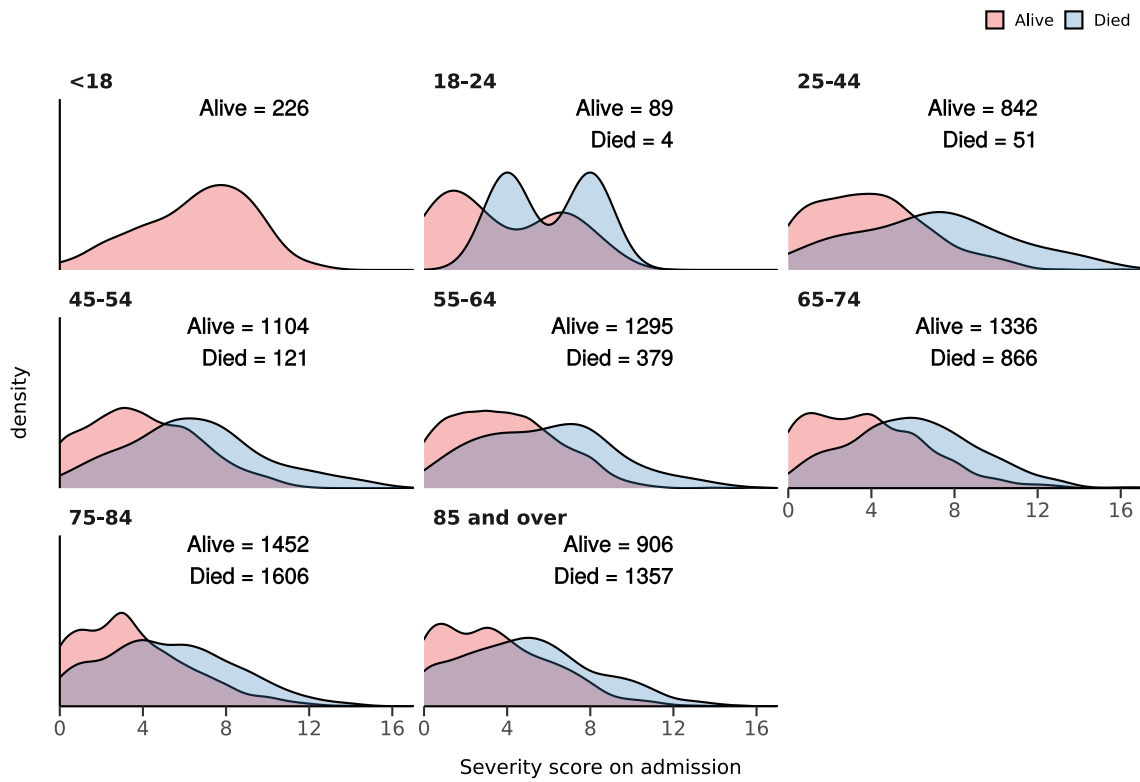
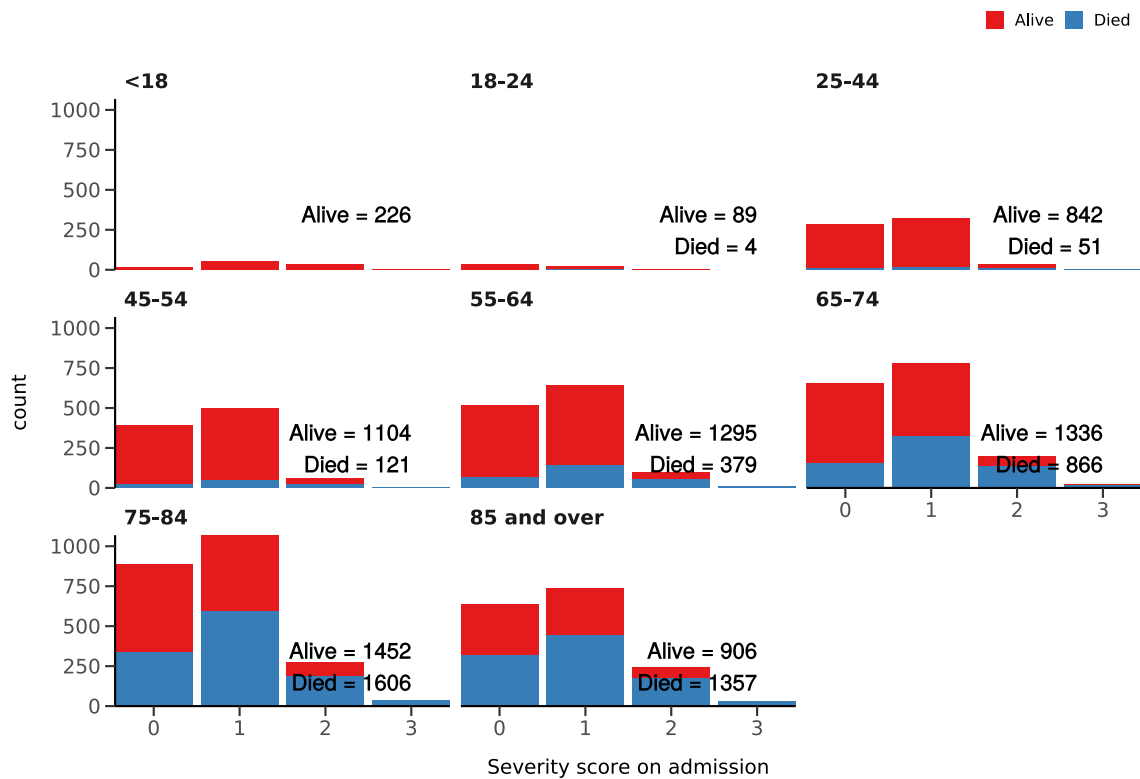


Figure 21 - Death by severity (qSOFA) on admission stratified by age

Number of deaths by qSOFA score at admission
Stratified by age



Healthcare workers

Healthcare worker		NO	YES	p
Total N (%)		16151 (95.1)	826 (4.9)	
NEWS score on admission	Median (IQR)	4.0 (4.0)	4.0 (4.0)	0.671
Death	No	6100 (60.2)	456 (93.6)	<0.001
	Yes	4027 (39.8)	31 (6.4)	

Admission (detail)

Table 1

label	levels	all
Total N (%)		24670 (100.0)
Age on admission (years)	Mean (SD)	68.7 (18.3)
Sex at Birth	Male	11697 (47.4)
	Female	7967 (32.3)
	Not specified	37 (0.1)
	(Missing)	4969 (20.1)
Healthcare worker	YES	826 (3.3)
	NO	16151 (65.5)
	N/A	1876 (7.6)
	(Missing)	5817 (23.6)

label	levels	all
Microbiology lab worker	YES	60 (0.2)
	NO	16871 (68.4)
	N/A	1913 (7.8)
	(Missing)	5826 (23.6)
Onset to admission (days)	Mean (SD)	50.8 (4020.2)
Transfer from other facility	Yes-facility is a study site	328 (1.3)
	Yes-facility is not a study site	994 (4.0)
	No	16429 (66.6)
	N/A	477 (1.9)
	(Missing)	6442 (26.1)
Travel in 14 d prior to symptoms	Yes	678 (2.7)
	No	14261 (57.8)
	N/A	2577 (10.4)
	(Missing)	7154 (29.0)
Country	Andorra	1 (0.0)
	Antigua and Barbuda	3 (0.0)
	Argentina	1 (0.0)
	Australia	3 (0.0)
	Austria	19 (0.1)
	Barbados	14 (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	22 (0.1)
	Czechia	2 (0.0)
	Dominican Republic	3 (0.0)
	Egypt	7 (0.0)
	France	29 (0.1)
Germany	7 (0.0)	
Ghana	1 (0.0)	

label	levels	all
	Greece	2 (0.0)
	Hong Kong	1 (0.0)
	Hungary	2 (0.0)
	Iceland	1 (0.0)
	India	7 (0.0)
	Indonesia	1 (0.0)
	Iran	6 (0.0)
	Ireland	5 (0.0)
	Italy	81 (0.3)
	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	9 (0.0)
	New Zealand	2 (0.0)
	Nigeria	2 (0.0)
	Norway	2 (0.0)
	Pakistan	7 (0.0)
	Philippines	4 (0.0)
	Poland	3 (0.0)
	Portugal	16 (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	7 (0.0)
	South Korea	1 (0.0)
	Spain	165 (0.7)
	Swaziland	1 (0.0)
	Switzerland	8 (0.0)
	Thailand	8 (0.0)
	Turkey	5 (0.0)

label	levels	all
	United Arab Emirates	9 (0.0)
	United Kingdom	104 (0.4)
	Yemen	1 (0.0)
	Zimbabwe	1 (0.0)
	(Missing)	24051 (97.5)
Country 2	Algeria	1 (0.0)
	Antigua and Barbuda	1 (0.0)
	Aruba	1 (0.0)
	Australia	3 (0.0)
	Austria	5 (0.0)
	Barbados	2 (0.0)
	Bulgaria	2 (0.0)
	Canada	1 (0.0)
	Cyprus	3 (0.0)
	Czechia	1 (0.0)
	Egypt	2 (0.0)
	France	8 (0.0)
	Germany	2 (0.0)
	India	2 (0.0)
	Indonesia	1 (0.0)
	Italy	15 (0.1)
	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	17 (0.1)
	Switzerland	1 (0.0)
	Thailand	1 (0.0)
	Turkey	4 (0.0)
	Vietnam	1 (0.0)
	(Missing)	24589 (99.7)
Animal, raw meat, insect bites 14 d prior	Yes	99 (0.4)
	No	6814 (27.6)
	Unknown	9845 (39.9)

label	levels	all
	N/A	1063 (4.3)
	(Missing)	6849 (27.8)
Animal / insect	2 Budgerigars and 26 Cats at home	1 (1.1)
	2 dogs	1 (1.1)
	Bee Sting	1 (1.1)
	Bird (pet)	1 (1.1)
	bird (pigeon)	1 (1.1)
	budgies	1 (1.1)
	cat	2 (2.1)
	Cat	1 (1.1)
	CAT	1 (1.1)
	Cat (pet)	1 (1.1)
	Cat / Dog	1 (1.1)
	Cat, Dog (pets)	1 (1.1)
	cats	3 (3.2)
	Cats	2 (2.1)
	chicken & beef	1 (1.1)
	Chickens	1 (1.1)
	COWS	1 (1.1)
	cows, rabbits, pigs goats	1 (1.1)
	DAILY CONTACT WITH DOMESTIC PET CAT	1 (1.1)
	dog	4 (4.2)
	Dog	11 (11.6)
	DOG	3 (3.2)
	DOG FAMILY PET	1 (1.1)
	Dog Pet	1 (1.1)
	Dog, domestic animal living in their home.	1 (1.1)
	dogs and cats	1 (1.1)
	Dogs at home	1 (1.1)
	Domestic pet dog	1 (1.1)
	DOMESTIC ANIMAL	2 (2.1)
	Domestic animal and faeces/nest	1 (1.1)
	domestic animal living in his home	1 (1.1)
	domestic animals	1 (1.1)
	Domestic Animals living in his/her home	1 (1.1)
	Domestic animals living in home	1 (1.1)

label	levels	all
	Domestic cats	1 (1.1)
	domestic dog	1 (1.1)
	Domestic Per (dog)	1 (1.1)
	Domestic pest (cats)	1 (1.1)
	Domestic Pet	5 (5.3)
	Domestic Pet (Dog)	6 (6.3)
	Domestic pet cat	1 (1.1)
	Domestic pet Dog	1 (1.1)
	Domestic pets	1 (1.1)
	Domestic Pets	2 (2.1)
	Domestic pets (dog)	1 (1.1)
	Domestic Pets Cat and Dog	1 (1.1)
	FARM ANIMALS - LAMBS	1 (1.1)
	Farm animals, cattle	1 (1.1)
	Guinea Pig	1 (1.1)
	HORSES	1 (1.1)
	mosquito	1 (1.1)
	pet dog	1 (1.1)
	pet dog	1 (1.1)
	Pet dog	1 (1.1)
	Pet dog -ongoing daily contact	1 (1.1)
	Pet dog ongoing daily contact	1 (1.1)
	Prepared raw chicken	1 (1.1)
	raw chicken	1 (1.1)
	Raw Chicken	1 (1.1)
	Rodent	1 (1.1)
	Rodent - hamster,	1 (1.1)
	she has a cat	1 (1.1)
	Sheep & Cattle	1 (1.1)
	Two cats	1 (1.1)
	unknown	1 (1.1)

Symptoms (detail)

Table 2

Stratified: all	all
Total N (%)	24670 (100.0)

Stratified: all

all

Fever	YES	11796 (47.8)
	NO	4631 (18.8)
	Unknown	931 (3.8)
	(Missing)	7312 (29.6)
Cough	YES	11959 (48.5)
	NO	4415 (17.9)
	Unknown	986 (4.0)
	(Missing)	7310 (29.6)
Cough (sputum)	YES	3537 (14.3)
	NO	10124 (41.0)
	Unknown	3548 (14.4)
	(Missing)	7461 (30.2)
Cough (blood)	YES	456 (1.8)
	NO	12859 (52.1)
	Unknown	3872 (15.7)
	(Missing)	7483 (30.3)
Sore throat	YES	1250 (5.1)
	NO	11057 (44.8)
	Unknown	4876 (19.8)
	(Missing)	7487 (30.3)
Runny nose	YES	455 (1.8)
	NO	11568 (46.9)
	Unknown	5161 (20.9)
	(Missing)	7486 (30.3)
Ear pain	YES	77 (0.3)
	NO	11937 (48.4)
	Unknown	5159 (20.9)
	(Missing)	7497 (30.4)
Wheeze	YES	1444 (5.9)
	NO	11623 (47.1)
	Unknown	4115 (16.7)
	(Missing)	7488 (30.4)
Chest pain	YES	2016 (8.2)
	NO	11781 (47.8)
	Unknown	3393 (13.8)
	(Missing)	7480 (30.3)

Stratified: all		all
Muscle ache	YES	2604 (10.6)
	NO	9961 (40.4)
	Unknown	4608 (18.7)
	(Missing)	7497 (30.4)
Joint pain	YES	910 (3.7)
	NO	11148 (45.2)
	Unknown	5089 (20.6)
	(Missing)	7523 (30.5)
Fatigue	YES	6048 (24.5)
	NO	7327 (29.7)
	Unknown	3809 (15.4)
	(Missing)	7486 (30.3)
Shortness of breath	YES	11334 (45.9)
	NO	4617 (18.7)
	Unknown	1395 (5.7)
	(Missing)	7324 (29.7)
Lower chest wall indrawing	YES	181 (0.7)
	NO	11265 (45.7)
	Unknown	5716 (23.2)
	(Missing)	7508 (30.4)
Headache	YES	1589 (6.4)
	NO	10902 (44.2)
	Unknown	4675 (19.0)
	(Missing)	7504 (30.4)
Confusion	YES	3872 (15.7)
	NO	10782 (43.7)
	Unknown	2550 (10.3)
	(Missing)	7466 (30.3)
Seizures	YES	239 (1.0)
	NO	13560 (55.0)
	Unknown	3359 (13.6)
	(Missing)	7512 (30.4)
Abdominal pain	YES	1373 (5.6)
	NO	12341 (50.0)
	Unknown	3467 (14.1)
	(Missing)	7489 (30.4)

Stratified: all		all
Nausea/vomiting	YES	2772 (11.2)
	NO	11544 (46.8)
	Unknown	2878 (11.7)
	(Missing)	7476 (30.3)
Diarrhoea	YES	2881 (11.7)
	NO	11413 (46.3)
	Unknown	2900 (11.8)
	(Missing)	7476 (30.3)
Conjunctivitis	YES	49 (0.2)
	NO	12764 (51.7)
	Unknown	4345 (17.6)
	(Missing)	7512 (30.4)
Skin rash	YES	238 (1.0)
	NO	12886 (52.2)
	Unknown	4035 (16.4)
	(Missing)	7511 (30.4)
Skin ulcers	YES	319 (1.3)
	NO	12785 (51.8)
	Unknown	4057 (16.4)
	(Missing)	7509 (30.4)
Lymphadenopathy	YES	92 (0.4)
	NO	12758 (51.7)
	Unknown	4300 (17.4)
	(Missing)	7520 (30.5)
Bleeding (Haemorrhage)	YES	151 (0.6)
	NO	13431 (54.4)
	Unknown	3561 (14.4)
	(Missing)	7527 (30.5)
If Bleeding (others)	YES	282 (1.1)
	NO	13012 (52.7)
	Unknown	3720 (15.1)
	(Missing)	7656 (31.0)

Comorbidity (detail)

Table 3

Stratified: all		all
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Stratified: all

all

Total N (%)		24670 (100.0)
Chronic cardiac disease	YES	5082 (20.6)
	NO	11615 (47.1)
	Unknown	713 (2.9)
	(Missing)	7260 (29.4)
Chronic pulmonary disease	YES	2949 (12.0)
	NO	13680 (55.5)
	Unknown	770 (3.1)
	(Missing)	7271 (29.5)
Asthma	YES	2390 (9.7)
	NO	14155 (57.4)
	Unknown	836 (3.4)
	(Missing)	7289 (29.5)
Chronic kidney disease	YES	2620 (10.6)
	NO	13892 (56.3)
	Unknown	853 (3.5)
	(Missing)	7305 (29.6)
Moderate/severe liver disease	YES	280 (1.1)
	NO	16102 (65.3)
	Unknown	977 (4.0)
	(Missing)	7311 (29.6)
Mild Liver disease	YES	259 (1.0)
	NO	16097 (65.2)
	Unknown	1003 (4.1)
	(Missing)	7311 (29.6)
Chronic neurological disorder	YES	1819 (7.4)
	NO	14581 (59.1)
	Unknown	964 (3.9)
	(Missing)	7306 (29.6)
Malignancy	YES	1623 (6.6)
	NO	14757 (59.8)
	Unknown	992 (4.0)
	(Missing)	7298 (29.6)
Chronic hematologic disease	YES	648 (2.6)
	NO	15695 (63.6)
	Unknown	1005 (4.1)

Stratified: all

all

	(Missing)	7322 (29.7)
AIDS/HIV	YES	76 (0.3)
	NO	16202 (65.7)
	Unknown	1082 (4.4)
	(Missing)	7310 (29.6)
Obesity	YES	1573 (6.4)
	NO	13609 (55.2)
	Unknown	2043 (8.3)
	(Missing)	7445 (30.2)
Diabetes with complications	YES	1224 (5.0)
	NO	15307 (62.0)
	Unknown	844 (3.4)
	(Missing)	7295 (29.6)
Diabetes without complications	YES	3430 (13.9)
	NO	13198 (53.5)
	Unknown	761 (3.1)
	(Missing)	7281 (29.5)
Rheumatologic disorder	YES	1573 (6.4)
	NO	14720 (59.7)
	Unknown	1023 (4.1)
	(Missing)	7354 (29.8)
Dementia	YES	2214 (9.0)
	NO	14245 (57.7)
	Unknown	903 (3.7)
	(Missing)	7308 (29.6)
Malnutrition	YES	362 (1.5)
	NO	15357 (62.2)
	Unknown	1558 (6.3)
	(Missing)	7393 (30.0)
smoking_mhyn_2levels	YES	805 (3.3)
	NO	12622 (51.2)
	(Missing)	11243 (45.6)