

Dynamic CO-CIN report to SAGE and NERVTAG

[OFFICIAL-SENSITIVE PROTECT]

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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 to date have not required hospital admission. This report is based on patients admitted on/after 10th March.

In total up until 25 March 2020, CO-CIN has recruited **1383 patients** with confirmed Coronavirus (Figure 1).

While The CO-CIN dataset represents 17.1% (1383/8,077) of cases of confirmed Coronavirus cases in the UK per the PHE daily reports (last updated 9am on 24 March 2020), the great majority of cases to date have not required hospital admission.

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 142 had travelled abroad recently, and 188 reported visiting or working in a hospital where COVID-19 cases are being managed.

The median age is 69 (range: 0-102), Male/Female 605/412.

The most common symptoms were cough (75%), fever (68%) and shortness of breath (59%) (Figure 3A). 47/935 (5%) of patients have reported no symptoms. Comorbidity can be seen in Figure 3B. The most common comorbidities were chronic cardiac disease (25%), diabetes (without complications) (18%) and chronic pulmonary disease (16%). 257/934 (28%) of patients have reported no co morbidity. 3/63 (5%) of women were recorded as being pregnant.

The median time from onset of symptoms to presentation at hospital was 3 days (range: -27 - 28 days).

The median length of hospital stay was 4 days (range: -3-53, n = 278).

The median length of ICU stay was 3 days (range: 1-11, n = 17).

44/444 (10%) patients required high-flow oxygen after day 1 of treatment.

Currently 87 patient(s) have died and 181 required ICU. 191 have been discharged home.

Interpretation: There are significant amounts of missing data, due to overwhelming pressure on the research nurse network. Only 44 patients have been documented as completing their journey: it is difficult to comment on outcomes including mortality with such small documented numbers.

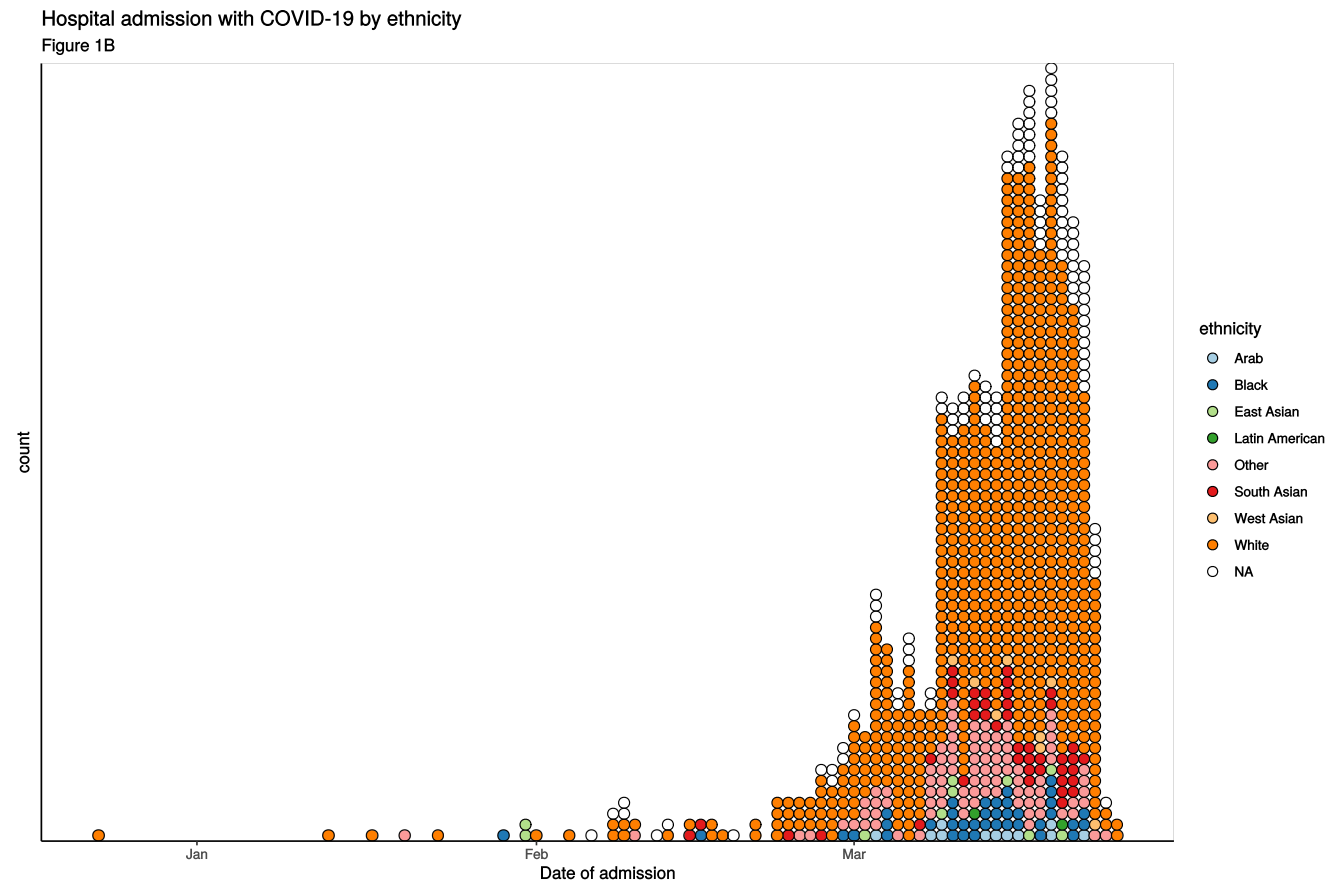
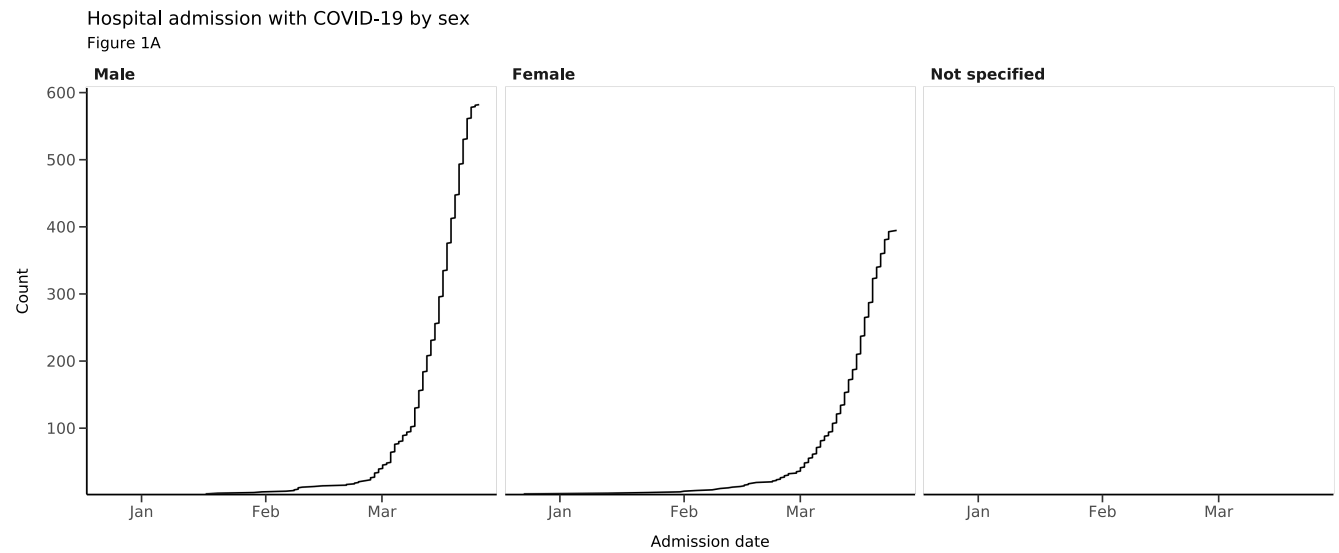
From 11th March the dataset is increasingly more representative of the burden of disease requiring hospitalisation and captures the early exponential rise of disease incidence that is now increasingly driven by domestic transmission events in the community. Furthermore, we can now see 'hot spots' of disease

incidence that largely reflect areas of high population density (most notably London) with a few exceptions to this. Symptoms on presentation to hospital risk being over represented by the current guidance and use of a probable case definition for testing (fever, cough and shortness of breath). The commonest comorbidity is chronic cardiac disease, reflecting patterns seen in other countries, although nearly a third 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.

Strategy: Annemarie Docherty, Christopher Green, Calum Semple Analytics: Lisa Norman, Riinu Pius, Thomas Drake, Cameron Fairfield, Stephen Knight, Kenneth McLean, Katie Shaw, Ewen Harrison.

Admission

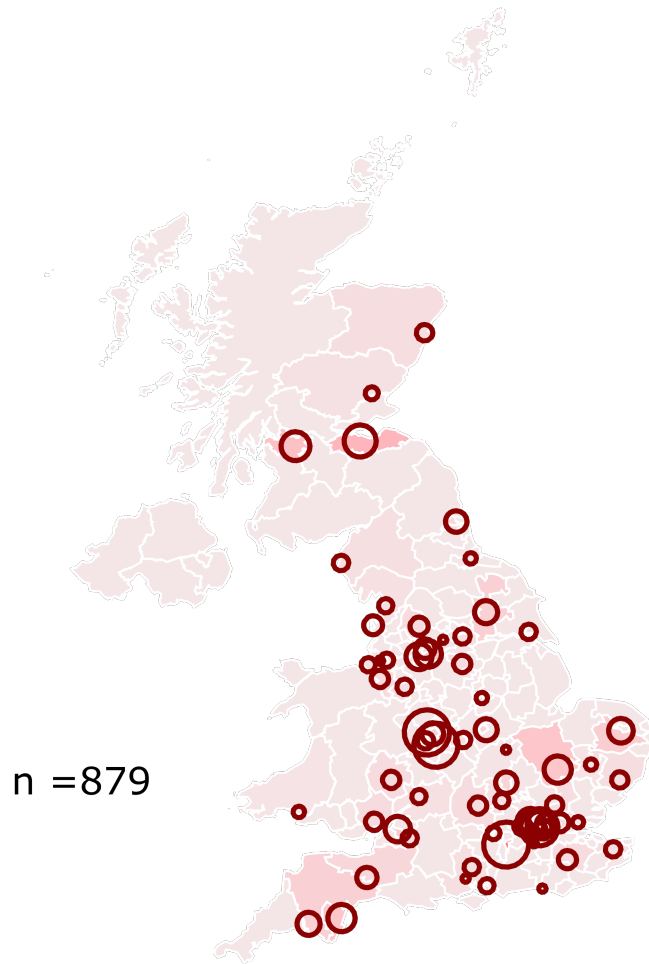
Figure 1



Location by CCG / Healthboard

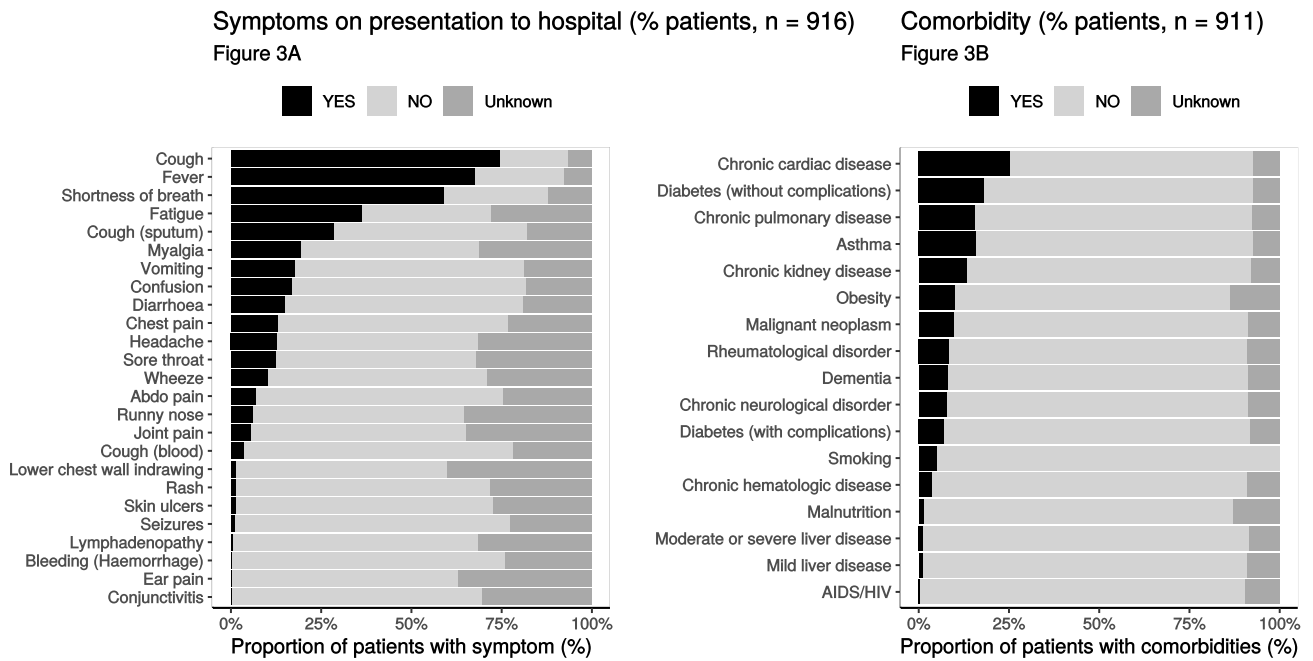
Figure 2

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



Symptoms and comorbidity

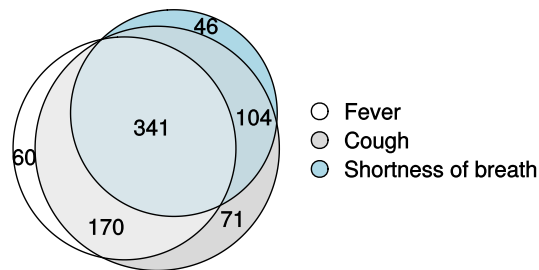
Figure 3



Symptoms (diagnostic criteria)

Figure 4A

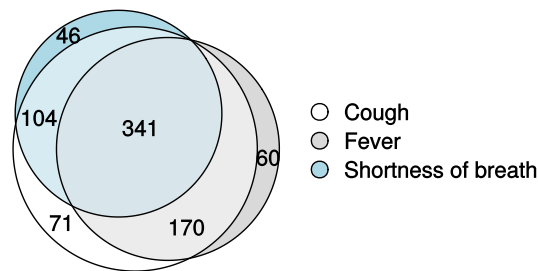
n = 792



Symptoms (most common)

Figure 4B

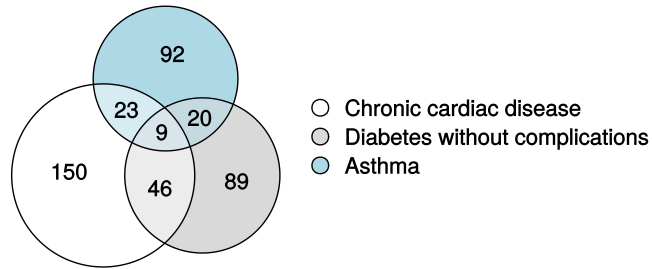
n = 792



Comorbidity (most common)

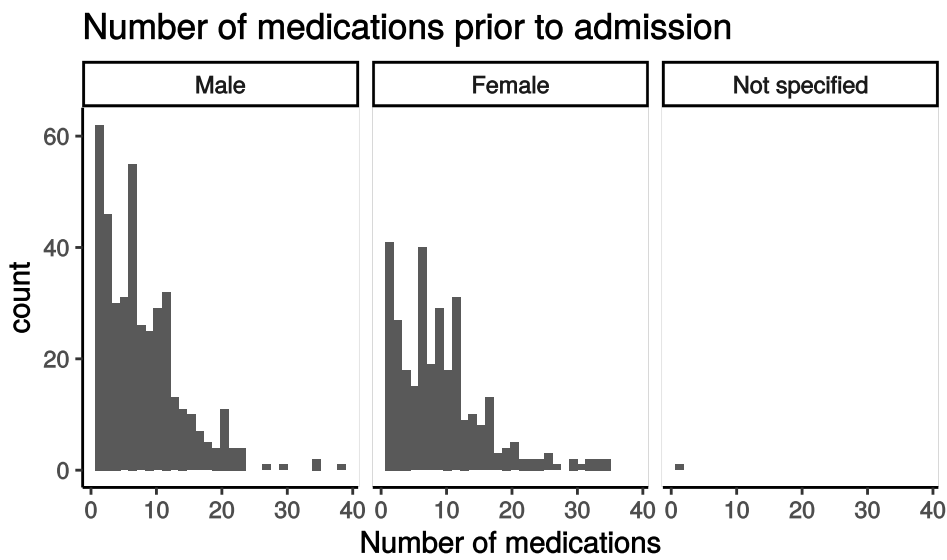
Figure 4C

n = 427



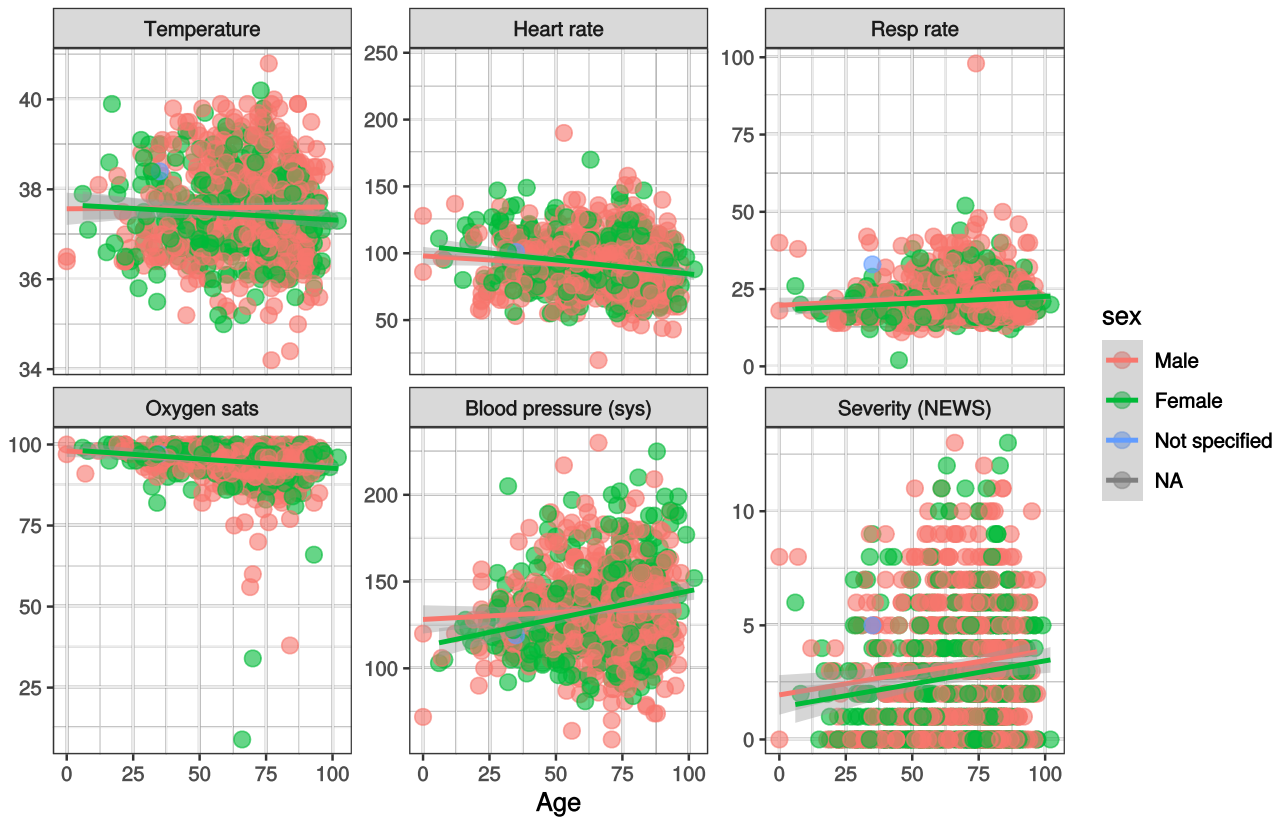
Medication prior to illness

Figure 5



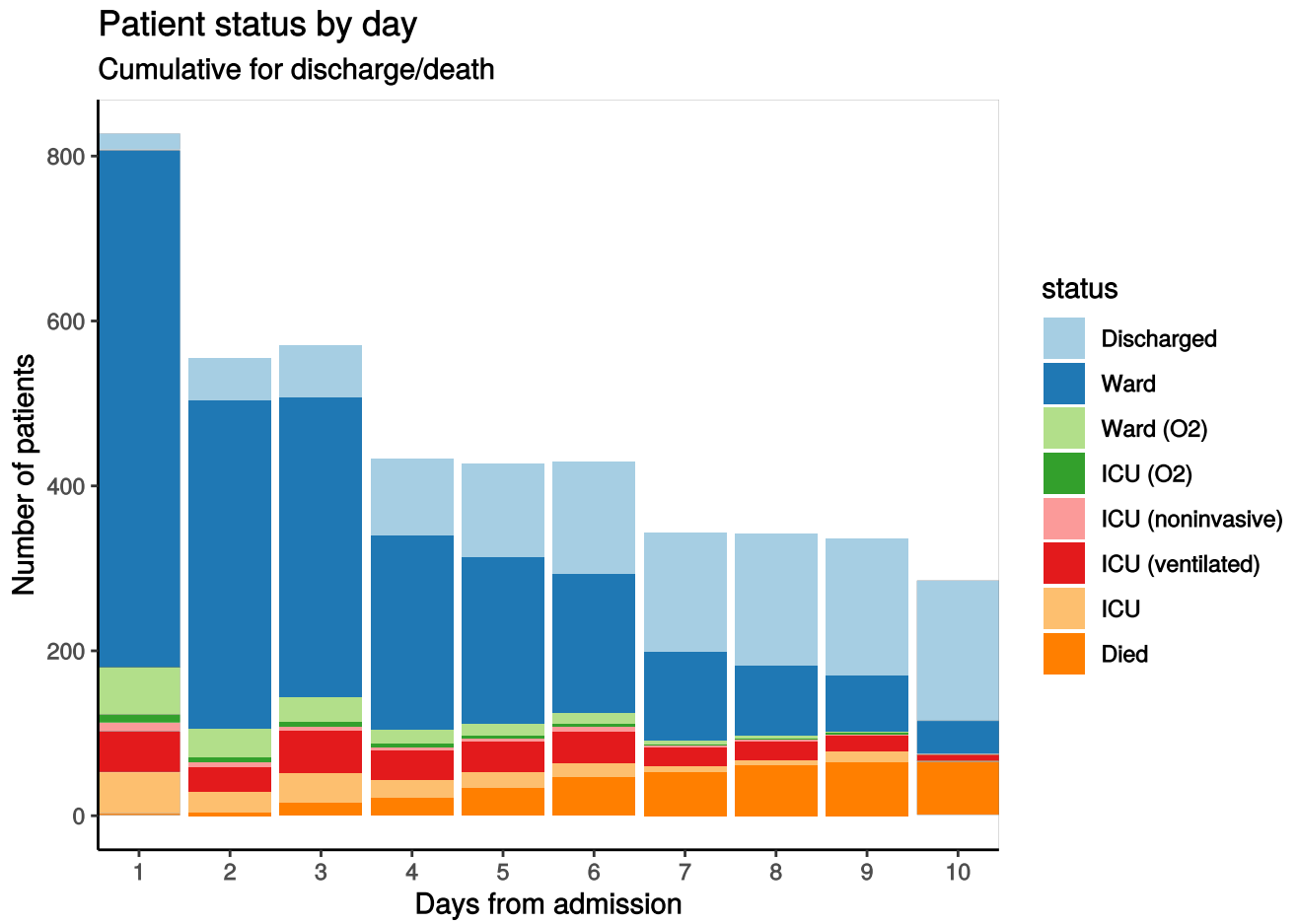
Observations on admission

Figure 6



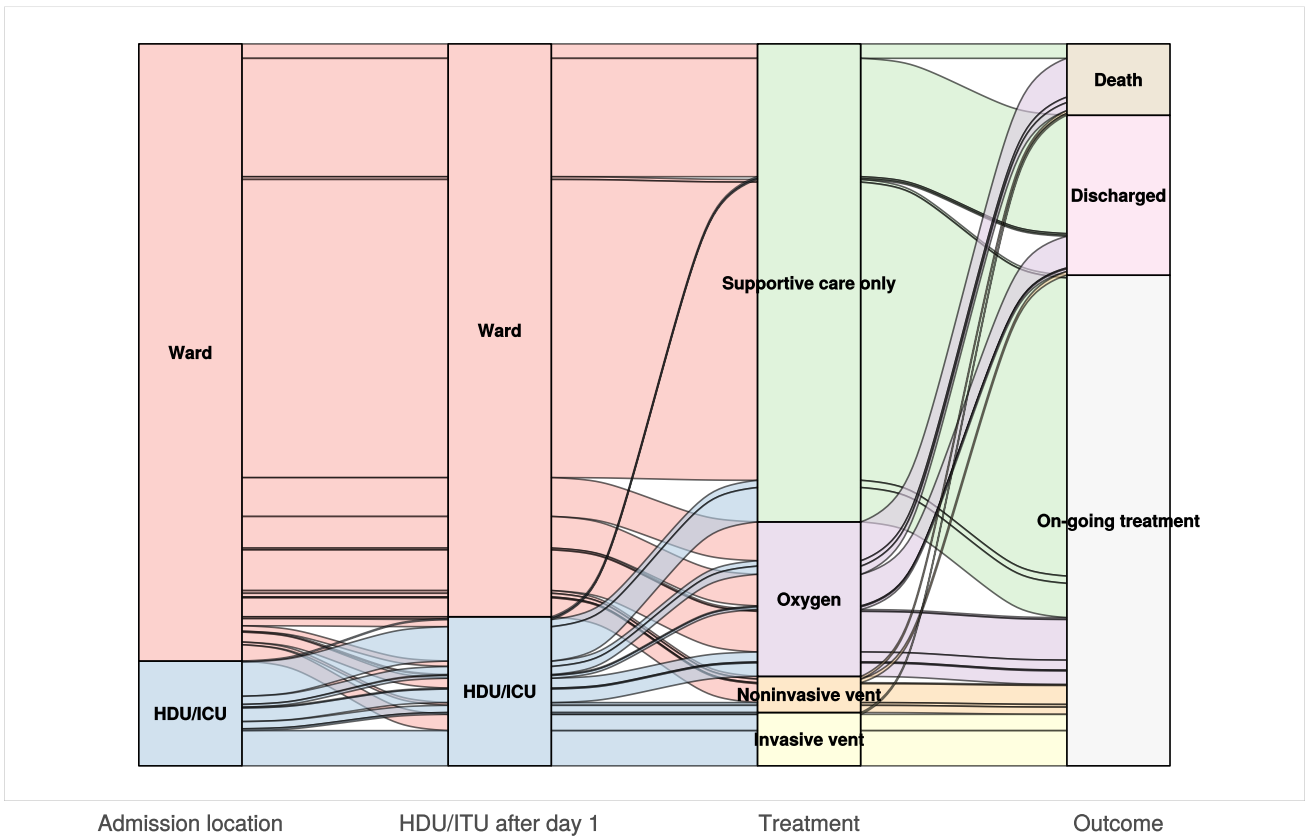
Patient flow

Figure 7



Oxygen requirement

Figure 8

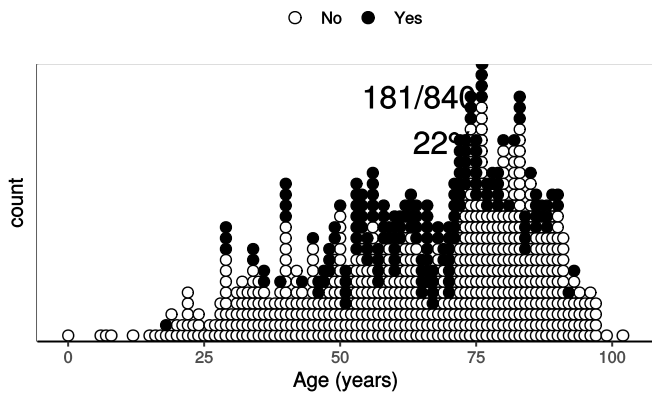


Outcomes

Figure 9

ICU/HDU admission

Figure 9A



Noninvasive ventilation

Figure 9B



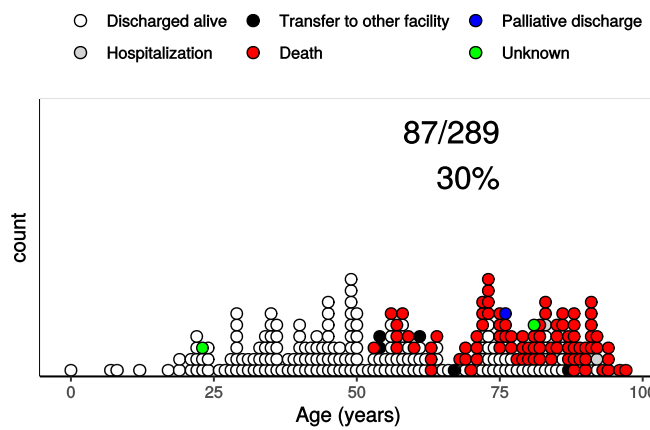
Invasive ventilation

Figure 9C



Outcome

Figure 9D

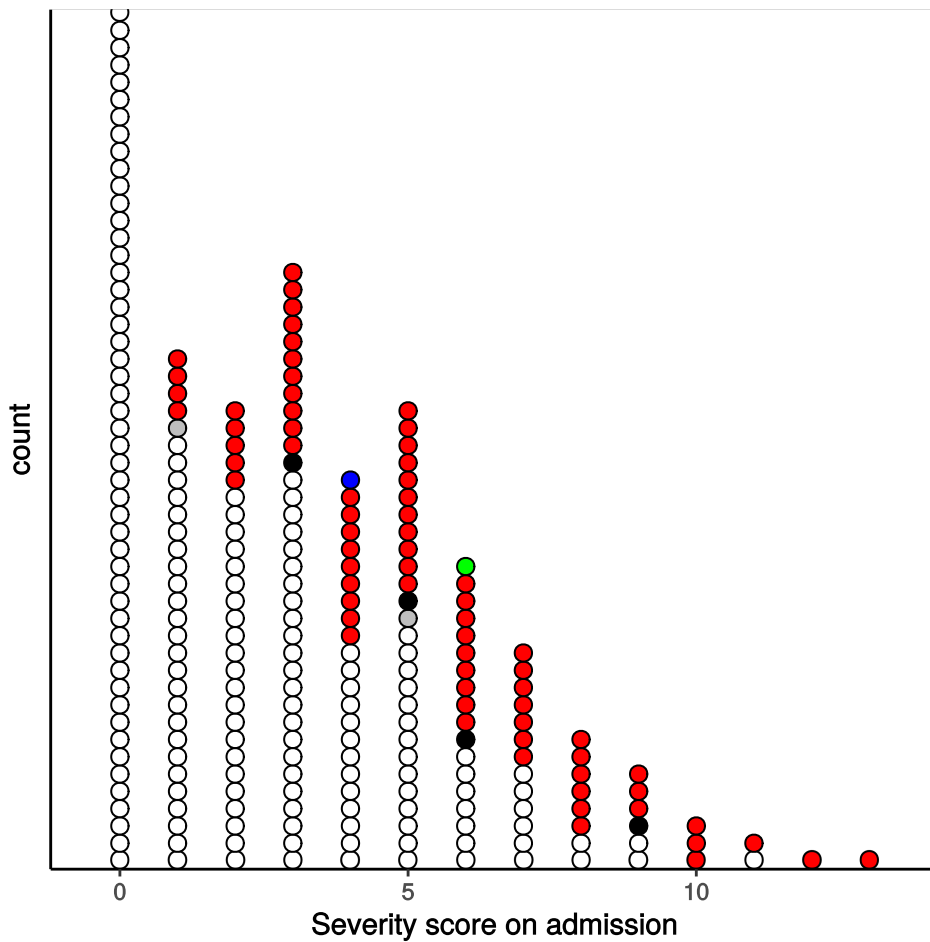


Predictors of death

Figure 10 - Death by severity on admission

Number of deaths by NEWS score at admission

- Discharged alive
- Hospitalization
- Transfer to other facility
- Death
- Palliative discharge
- Unknown



Admission (detail)

Table 1

label	levels	all
Total N (%)		1385 (100.0)
Age on admission (years)	Mean (SD)	64.8 (19.5)
Sex at Birth	Male	607 (43.8)

label	levels	all
	Female	412 (29.7)
	Not specified	1 (0.1)
	(Missing)	365 (26.4)
Healthcare worker	YES	52 (3.8)
	NO	851 (61.4)
	N/A	71 (5.1)
	(Missing)	411 (29.7)
Microbiology lab worker	YES	1 (0.1)
	NO	903 (65.2)
	N/A	72 (5.2)
	(Missing)	409 (29.5)
Onset to admission (days)	Mean (SD)	3.1 (7.0)
Transfer from other facility	Yes-facility is a study site	12 (0.9)
	Yes-facility is not a study site	65 (4.7)
	No	873 (63.0)
	N/A	17 (1.2)
	(Missing)	418 (30.2)
Travel in 14 d prior to symptoms	Yes	155 (11.2)
	No	662 (47.8)
	N/A	94 (6.8)
	(Missing)	474 (34.2)
Country	Austria	4 (0.3)
	Barbados	3 (0.2)
	Bulgaria	1 (0.1)
	China	2 (0.1)
	Cyprus	1 (0.1)

label	levels	all
	Egypt	1 (0.1)
	France	10 (0.7)
	Germany	3 (0.2)
	Ghana	1 (0.1)
	Indonesia	1 (0.1)
	Iran	4 (0.3)
	Ireland	1 (0.1)
	Italy	53 (3.8)
	Japan	2 (0.1)
	Malaysia	2 (0.1)
	Morocco	1 (0.1)
	Netherlands	2 (0.1)
	Philippines	1 (0.1)
	Poland	1 (0.1)
	Portugal	3 (0.2)
	Romania	2 (0.1)
	Singapore	2 (0.1)
	Spain	15 (1.1)
	Switzerland	5 (0.4)
	Thailand	1 (0.1)
	Turkey	2 (0.1)
	United Arab Emirates	1 (0.1)
	United Kingdom	23 (1.7)
	(Missing)	1237 (89.3)
Country 2	Antigua and Barbuda	1 (0.1)
	Aruba	1 (0.1)

label	levels	all
	Australia	2 (0.1)
	Austria	1 (0.1)
	Canada	1 (0.1)
	Egypt	1 (0.1)
	France	3 (0.2)
	Germany	1 (0.1)
	Italy	11 (0.8)
	Qatar	1 (0.1)
	Spain	5 (0.4)
	Switzerland	1 (0.1)
	Turkey	2 (0.1)
	(Missing)	1354 (97.8)
Animal, raw meat, insect bites 14 d prior	Yes	13 (0.9)
	No	404 (29.2)
	Unknown	485 (35.0)
	N/A	24 (1.7)
	(Missing)	459 (33.1)
Animal / insect	Bird (pet)	1 (9.1)
	Cat (pet)	1 (9.1)
	chicken & beef	1 (9.1)
	Chickens	1 (9.1)
	cows, rabbits, pigs goats	1 (9.1)
	Dog, domestic animal living in their home.	1 (9.1)
	Dogs at home	1 (9.1)
	Domestic animals living in home	1 (9.1)
	pet dog	1 (9.1)

label	levels	all
	Prepared raw chicken	1 (9.1)
	she has a cat	1 (9.1)

Symptoms (detail)

Table 2

Stratified: all		all
Total N (%)		1385 (100.0)
Fever	YES	623 (45.0)
	NO	224 (16.2)
	Unknown	71 (5.1)
	(Missing)	467 (33.7)
Cough	YES	689 (49.7)
	NO	175 (12.6)
	Unknown	59 (4.3)
	(Missing)	462 (33.4)
Cough (sputum)	YES	258 (18.6)
	NO	484 (34.9)
	Unknown	162 (11.7)
	(Missing)	481 (34.7)
Cough (blood)	YES	33 (2.4)
	NO	674 (48.7)
	Unknown	196 (14.2)
	(Missing)	482 (34.8)
Sore throat	YES	113 (8.2)
	NO	495 (35.7)
	Unknown	286 (20.6)

Stratified: all**all**

	(Missing)	491 (35.5)
Runny nose	YES	56 (4.0)
	NO	524 (37.8)
	Unknown	317 (22.9)
	(Missing)	488 (35.2)
Ear pain	YES	3 (0.2)
	NO	562 (40.6)
	Unknown	331 (23.9)
	(Missing)	489 (35.3)
Wheeze	YES	93 (6.7)
	NO	543 (39.2)
	Unknown	259 (18.7)
	(Missing)	490 (35.4)
Chest pain	YES	119 (8.6)
	NO	571 (41.2)
	Unknown	208 (15.0)
	(Missing)	487 (35.2)
Muscle ache	YES	175 (12.6)
	NO	442 (31.9)
	Unknown	279 (20.1)
	(Missing)	489 (35.3)
Joint pain	YES	51 (3.7)
	NO	532 (38.4)
	Unknown	310 (22.4)
	(Missing)	492 (35.5)
Fatigue	YES	327 (23.6)

Stratified: all**all**

	NO	319 (23.0)
	Unknown	248 (17.9)
	(Missing)	491 (35.5)
Shortness of breath	YES	542 (39.1)
	NO	263 (19.0)
	Unknown	109 (7.9)
	(Missing)	471 (34.0)
Lower chest wall indrawing	YES	14 (1.0)
	NO	521 (37.6)
	Unknown	360 (26.0)
	(Missing)	490 (35.4)
Headache	YES	114 (8.2)
	NO	500 (36.1)
	Unknown	281 (20.3)
	(Missing)	490 (35.4)
Confusion	YES	155 (11.2)
	NO	576 (41.6)
	Unknown	163 (11.8)
	(Missing)	491 (35.5)
Seizures	YES	12 (0.9)
	NO	682 (49.2)
	Unknown	203 (14.7)
	(Missing)	488 (35.2)
Abdominal pain	YES	63 (4.5)
	NO	615 (44.4)
	Unknown	221 (16.0)

Stratified: all**all**

	(Missing)	486 (35.1)
Nausea/vomiting	YES	160 (11.6)
	NO	571 (41.2)
	Unknown	167 (12.1)
	(Missing)	487 (35.2)
Diarrhoea	YES	135 (9.7)
	NO	592 (42.7)
	Unknown	171 (12.3)
	(Missing)	487 (35.2)
Conjunctivitis	YES	2 (0.1)
	NO	621 (44.8)
	Unknown	270 (19.5)
	(Missing)	492 (35.5)
Skin rash	YES	13 (0.9)
	NO	630 (45.5)
	Unknown	251 (18.1)
	(Missing)	491 (35.5)
Skin ulcers	YES	13 (0.9)
	NO	639 (46.1)
	Unknown	243 (17.5)
	(Missing)	490 (35.4)
Lymphadenopathy	YES	6 (0.4)
	NO	605 (43.7)
	Unknown	281 (20.3)
	(Missing)	493 (35.6)
Bleeding (Haemorrhage)	YES	4 (0.3)

Stratified: all		all
	NO	675 (48.7)
	Unknown	214 (15.5)
	(Missing)	492 (35.5)
If Bleeding (others)	YES	18 (1.3)
	NO	640 (46.2)
	Unknown	233 (16.8)
	(Missing)	494 (35.7)

Comorbidity (detail)

Table 3

Stratified: all		all
Total N (%)		1385 (100.0)
Chronic cardiac disease	YES	232 (16.8)
	NO	615 (44.4)
	Unknown	66 (4.8)
	(Missing)	472 (34.1)
Chronic pulmonary disease	YES	144 (10.4)
	NO	701 (50.6)
	Unknown	70 (5.1)
	(Missing)	470 (33.9)
Asthma	YES	144 (10.4)
	NO	700 (50.5)
	Unknown	66 (4.8)
	(Missing)	475 (34.3)
Chronic kidney disease	YES	122 (8.8)
	NO	713 (51.5)

Stratified: all**all**

	Unknown	71 (5.1)
	(Missing)	479 (34.6)
Moderate/severe liver disease	YES	13 (0.9)
	NO	817 (59.0)
	Unknown	77 (5.6)
	(Missing)	478 (34.5)
Mild Liver disease	YES	12 (0.9)
	NO	813 (58.7)
	Unknown	81 (5.8)
	(Missing)	479 (34.6)
Chronic neurological disorder	YES	72 (5.2)
	NO	754 (54.4)
	Unknown	80 (5.8)
	(Missing)	479 (34.6)
Malignancy	YES	90 (6.5)
	NO	740 (53.4)
	Unknown	78 (5.6)
	(Missing)	477 (34.4)
Chronic hematologic disease	YES	34 (2.5)
	NO	792 (57.2)
	Unknown	81 (5.8)
	(Missing)	478 (34.5)
AIDS/HIV	YES	3 (0.2)
	NO	820 (59.2)
	Unknown	86 (6.2)
	(Missing)	476 (34.4)

Stratified: all**all**

Obesity	YES	93 (6.7)
	NO	684 (49.4)
	Unknown	124 (9.0)
	(Missing)	484 (34.9)
Diabetes with complications	YES	65 (4.7)
	NO	768 (55.5)
	Unknown	73 (5.3)
	(Missing)	479 (34.6)
Diabetes without complications	YES	164 (11.8)
	NO	677 (48.9)
	Unknown	66 (4.8)
	(Missing)	478 (34.5)
Rheumatologic disorder	YES	75 (5.4)
	NO	744 (53.7)
	Unknown	81 (5.8)
	(Missing)	485 (35.0)
Dementia	YES	74 (5.3)
	NO	751 (54.2)
	Unknown	80 (5.8)
	(Missing)	480 (34.7)
Malnutrition	YES	14 (1.0)
	NO	768 (55.5)
	Unknown	114 (8.2)
	(Missing)	489 (35.3)
Smoking	YES	38 (2.7)
	NO	698 (50.4)

Stratified: all

all

(Missing)

649 (46.9)