**Analysis of severe outcomes associated with the SARS-CoV-2 Variant of Concern 202012/01 in England using ICNARC Case Mix Programme and QResearch databases.**

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**Supplementary material**

**Table S1: Demographics of primary care patients tested positive in the community between 1st November 2020 and 26th January 2021 (primary care cohort) who have a minimum of 28 days of follow up from the day of their positive test, by variant.**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Non-VOC B.1.1.7** | **VOC B.1.1.7\*** | **Full Cohort** |
|  | *Cols% (counts)* | *Cols% (counts)* | *Cols% (counts)* |
| **Total number of patients** | 66756 | 43583 | 110339 |
| **ICU admitted** | 0.3 (225) | 0.4 (184) | 0.4 (409) |
| **Deaths** | 0.3 (185) | 0.1 (58) | 0.2 (243) |
| **Sex** |  |  |  |
| Female | 53.3 (35579) | 52.7 (22956) | 53.1 (58535) |
| Male | 46.7 (31177) | 47.3 (20627) | 46.9 (51804) |
| **Mean age (SD)** | 37.6 (18.1) | 35.9 (17.4) | 36.9 (17.8) |
| **Age Categories** |  |  |  |
| 18-29 | 36.9 (24633) | 38.1 (16612) | 37.4 (41245) |
| 30-39 | 19.1 (12781) | 20.2 (8806) | 19.6 (21587) |
| 40-49 | 16.6 (11067) | 18.4 (7999) | 17.3 (19066) |
| 50-59 | 15.3 (10227) | 14.3 (6242) | 14.9 (16469) |
| 60-69 | 7.6 (5051) | 6.2 (2699) | 7.0 (7750) |
| 70-79 | 3.0 (2010) | 2.1 (903) | 2.6 (2913) |
| 80-89 | 1.2 (799) | 0.6 (269) | 1.0 (1068) |
| 90-99 | 0.3 (188) | 0.1 (53) | 0.2 (241) |
| **Ethnicity** |  |  |  |
| White | 60.4 (40309) | 59.4 (25906) | 60.0 (66215) |
| Indian | 3.9 (2620) | 4.3 (1888) | 4.1 (4508) |
| Pakistani | 5.4 (3573) | 3.2 (1400) | 4.5 (4973) |
| Bangladeshi | 2.7 (1813) | 3.5 (1527) | 3.0 (3340) |
| Other Asian | 2.0 (1340) | 2.6 (1123) | 2.2 (2463) |
| Caribbean | 0.5 (327) | 1.0 (446) | 0.7 (773) |
| Black African | 1.7 (1105) | 2.2 (957) | 1.9 (2062) |
| Chinese | 0.2 (137) | 0.3 (146) | 0.3 (283) |
| Other ethnic group | 3.4 (2243) | 4.7 (2060) | 3.9 (4303) |
| Not recorded | 19.9 (13289) | 18.7 (8130) | 19.4 (21419) |
| **Date of positive test** |  |  |  |
| 1 Nov to 14 Nov | 39.2 (26160) | 4.1 (1784) | 25.3 (27944) |
| 15 Nov to 28 Nov | 24.7 (16509) | 6.6 (2879) | 17.6 (19388) |
| 29 Nov to 12 Dec | 16.5 (10990) | 17.7 (7704) | 16.9 (18694) |
| 13 Dec to 26 Dec | 16.2 (10847) | 54.4 (23700) | 31.3 (34547) |
| 27 Dec to 10 Jan | 3.4 (2250) | 17.2 (7516) | 8.9 (9766) |
| **House size** |  |  |  |
| 1 person | 26.4 (17639) | 23.7 (10324) | 25.3 (27963) |
| 2 people | 20.3 (13559) | 18.4 (8010) | 19.5 (21569) |
| 3-5 people | 45.3 (30253) | 50.3 (21904) | 47.3 (52157) |
| 6+ people | 7.9 (5305) | 7.7 (3345) | 7.8 (8650) |
| **House type** |  |  |  |
| Neither | 99.7 (66548) | 99.8 (43489) | 99.7 (110037) |
| Carehome | 0.3 (170) | 0.1 (61) | 0.2 (231) |
| Homeless | 0.1 (38) | 0.1 (33) | 0.1 (71) |
| **BMI** |  |  |  |
| <25 | 54.2 (36205) | 54.9 (23940) | 54.5 (60145) |
| 25-30 | 13.1 (8713) | 11.3 (4928) | 12.4 (13641) |
| 30-40 | 5.5 (3667) | 4.6 (1986) | 5.1 (5653) |
| >= 40 | 3.1 (2086) | 2.3 (984) | 2.8 (3070) |
| Not recorded | 24.1 (16085) | 26.9 (11745) | 25.2 (27830) |
| **Smoking status** |  |  |  |
| Non smoker | 57.5 (38381) | 55.4 (24164) | 56.7 (62545) |
| Ex smoker | 17.3 (11580) | 16.8 (7306) | 17.1 (18886) |
| Light smoker | 7.7 (5150) | 8.1 (3529) | 7.9 (8679) |
| Moderate smoker | 1.4 (953) | 1.3 (550) | 1.4 (1503) |
| Heavy smoker | 0.5 (317) | 0.4 (191) | 0.5 (508) |
| Not recorded | 15.5 (10375) | 18.0 (7843) | 16.5 (18218) |
| **Geographical region** |  |  |  |
| East Midlands | 2.0 (1317) | 0.8 (342) | 1.5 (1659) |
| East of England | 1.8 (1215) | 3.5 (1509) | 2.5 (2724) |
| London | 18.1 (12115) | 43.0 (18721) | 27.9 (30836) |
| North East | 5.0 (3364) | 0.9 (403) | 3.4 (3767) |
| North West | 30.7 (20480) | 7.0 (3033) | 21.3 (23513) |
| South Central | 8.7 (5814) | 12.1 (5276) | 10.1 (11090) |
| South East | 4.9 (3250) | 24.1 (10509) | 12.5 (13759) |
| South West | 5.0 (3311) | 2.8 (1201) | 4.1 (4512) |
| West Midlands | 17.8 (11853) | 5.3 (2300) | 12.8 (14153) |
| Yorkshire & Humber | 6.0 (4037) | 0.7 (289) | 3.9 (4326) |
| **Deprivation quintile** |  |  |  |
| 1 (least deprived) | 21.9 (14646) | 19.1 (8304) | 20.8 (22950) |
| 2 | 21.6 (14428) | 22.3 (9701) | 21.9 (24129) |
| 3 | 21.1 (14111) | 21.1 (9164) | 21.1 (23275) |
| 4 | 19.9 (13301) | 19.0 (8286) | 19.6 (21587) |
| 5 (most deprived) | 14.7 (9793) | 18.0 (7856) | 16.0 (17649) |
| Not recorded | 0.7 (477) | 0.7 (272) | 0.7 (749) |
| **Comorbidities** |  |  |  |
| Asthma | 15.5 (10375) | 14.4 (6268) | 15.1 (16643) |
| COPD | 1.0 (683) | 0.6 (277) | 0.9 (960) |
| Diabetes type 1 | 0.6 (378) | 0.5 (224) | 0.5 (602) |
| Diabetes type 2 | 5.0 (3344) | 3.7 (1599) | 4.5 (4943) |
| Hypertension | 10.3 (6847) | 8.1 (3550) | 9.4 (10397) |
| Parkinson | 0.1 (50) | 0.1 (26) | 0.1 (76) |
| Epilepsy | 1.1 (713) | 0.9 (407) | 1.0 (1120) |
| Cerebral palsy | 0.1 (60) | 0.1 (33) | 0.1 (93) |
| Motor Neuron Disease | <5 | <5 | 0.0 (6) |
| Huntington’s disease | <5 | <5 | <5 |
| Myasthenia | 0.1 (92) | 0.1 (50) | 0.1 (142) |
| Downs syndrome | 0.0 (19) | 0.0 (8) | 0.0 (27) |
| Learning disabilities excluding downs | 0.0 (22) | 0.0 (14) | 0.0 (36) |

\*SGTF status was used as a proxy for VOC B.1.1.7.

**Table S2: Demographic characteristics observed for primary care patients tested positive in the community between 1st November 2020 and 26th January 2021 (primary-care cohort) who have a minimum of 20 days of follow up from the day of their positive test, by variant.**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Non-VOC B.1.1.7** | **VOC B.1.1.7\*** | **Full Cohort** |
|  | *Cols% (counts)* | *Cols% (counts)* | *Cols% (counts)* |
| **Total number of patients** | 73085 | 69580 | 142665 |
| **ICU admitted** | 0.3 (243) | 0.4 (299) | 0.4 (542) |
| **Deaths** | 0.4 (270) | 0.4 (248) | 0.4 (518) |
| **Sex** |  |  |  |
| Female | 53.3 (38951) | 52.5 (36512) | 52.9 (75463) |
| Male | 46.7 (34134) | 47.5 (33068) | 47.1 (67202) |
| **Mean age (SD)** | 37.8 (18.1) | 36.7 (17.3) | 37.2 (17.7) |
| **Age Categories** |  |  |  |
| 18-29 | 36.6 (26717) | 36.9 (25708) | 36.7 (52425) |
| 30-39 | 19.2 (14037) | 20.3 (14136) | 19.7 (28173) |
| 40-49 | 16.5 (12086) | 18.0 (12493) | 17.2 (24579) |
| 50-59 | 15.5 (11299) | 14.8 (10285) | 15.1 (21584) |
| 60-69 | 7.7 (5627) | 6.8 (4750) | 7.3 (10377) |
| 70-79 | 3.0 (2229) | 2.4 (1647) | 2.7 (3876) |
| 80-89 | 1.2 (885) | 0.7 (482) | 1.0 (1367) |
| 90-99 | 0.3 (205) | 0.1 (79) | 0.2 (284) |
| **Ethnicity** |  |  |  |
| White | 60.6 (44323) | 58.8 (40943) | 59.8 (85266) |
| Indian | 3.9 (2837) | 4.3 (2973) | 4.1 (5810) |
| Pakistani | 5.2 (3794) | 3.2 (2259) | 4.2 (6053) |
| Bangladeshi | 2.6 (1909) | 3.4 (2379) | 3.0 (4288) |
| Other Asian | 2.0 (1426) | 2.5 (1758) | 2.2 (3184) |
| Caribbean | 0.5 (365) | 1.1 (787) | 0.8 (1152) |
| Black African | 1.6 (1188) | 2.3 (1579) | 1.9 (2767) |
| Chinese | 0.2 (145) | 0.3 (234) | 0.3 (379) |
| Other ethnic group | 3.3 (2439) | 4.7 (3281) | 4.0 (5720) |
| Not recorded | 20.1 (14659) | 19.2 (13387) | 19.7 (28046) |
| **Date of positive test** |  |  |  |
| 1 Nov to 14 Nov | 35.8 (26160) | 2.6 (1784) | 19.6 (27944) |
| 15 Nov to 28 Nov | 22.6 (16509) | 4.1 (2879) | 13.6 (19388) |
| 29 Nov to 12 Dec | 15.0 (10990) | 11.1 (7704) | 13.1 (18694) |
| 13 Dec to 26 Dec | 14.8 (10847) | 34.1 (23700) | 24.2 (34547) |
| 27 Dec to 10 Jan | 11.7 (8579) | 48.2 (33513) | 29.5 (42092) |
| **House size** |  |  |  |
| 1 person | 26.6 (19452) | 24.6 (17136) | 25.6 (36588) |
| 2 people | 20.4 (14938) | 19.0 (13214) | 19.7 (28152) |
| 3-5 people | 45.2 (33053) | 48.7 (33851) | 46.9 (66904) |
| 6+ people | 7.7 (5642) | 7.7 (5379) | 7.7 (11021) |
| **House type** |  |  |  |
| Neither | 99.7 (72866) | 99.8 (69441) | 99.7 (142307) |
| Carehome | 0.2 (177) | 0.1 (90) | 0.2 (267) |
| Homeless | 0.1 (42) | 0.1 (49) | 0.1 (91) |
| **BMI** |  |  |  |
| <25 | 54.4 (39770) | 55.5 (38649) | 55.0 (78419) |
| 25-30 | 13.1 (9608) | 11.8 (8221) | 12.5 (17829) |
| 30-40 | 5.5 (4025) | 4.7 (3298) | 5.1 (7323) |
| >= 40 | 3.1 (2270) | 2.4 (1657) | 2.8 (3927) |
| Not recorded | 23.8 (17412) | 25.5 (17755) | 24.7 (35167) |
| **Smoking status** |  |  |  |
| Non smoker | 57.6 (42077) | 55.9 (38901) | 56.8 (80978) |
| Ex smoker | 17.5 (12821) | 17.2 (11943) | 17.4 (24764) |
| Light smoker | 7.8 (5688) | 8.8 (6107) | 8.3 (11795) |
| Moderate smoker | 1.5 (1060) | 1.4 (993) | 1.4 (2053) |
| Heavy smoker | 0.5 (360) | 0.5 (342) | 0.5 (702) |
| Not recorded | 15.2 (11079) | 16.2 (11294) | 15.7 (22373) |
| **Geographical region** |  |  |  |
| East Midlands | 1.9 (1410) | 0.9 (632) | 1.4 (2042) |
| East of England | 1.8 (1338) | 3.5 (2438) | 2.6 (3776) |
| London | 17.5 (12787) | 38.7 (26927) | 27.8 (39714) |
| North East | 5.1 (3748) | 1.4 (979) | 3.3 (4727) |
| North West | 31.5 (23046) | 10.9 (7592) | 21.5 (30638) |
| South Central | 8.5 (6223) | 12.2 (8517) | 10.3 (14740) |
| South East | 4.7 (3442) | 19.9 (13875) | 12.1 (17317) |
| South West | 5.0 (3657) | 3.2 (2194) | 4.1 (5851) |
| West Midlands | 17.9 (13060) | 8.2 (5734) | 13.2 (18794) |
| Yorkshire & Humber | 6.0 (4374) | 1.0 (692) | 3.6 (5066) |
| **Deprivation quintile** |  |  |  |
| 1 (least deprived) | 21.9 (16034) | 19.5 (13548) | 20.7 (29582) |
| 2 | 21.7 (15888) | 22.1 (15386) | 21.9 (31274) |
| 3 | 21.2 (15529) | 20.9 (14538) | 21.1 (30067) |
| 4 | 19.8 (14508) | 18.9 (13214) | 19.4 (27722) |
| 5 (most deprived) | 14.5 (10607) | 17.8 (12418) | 16.2 (23025) |
| Not recorded | 0.7 (519) | 0.7 (476) | 0.7 (995) |
| **Comorbidities** |  |  |  |
| Asthma | 15.6 (11395) | 14.5 (10090) | 15.1 (21485) |
| COPD | 1.0 (762) | 0.7 (477) | 0.9 (1239) |
| Diabetes type 1 | 0.6 (409) | 0.5 (359) | 0.5 (768) |
| Diabetes type 2 | 5.0 (3657) | 3.9 (2718) | 4.5 (6375) |
| Hypertension | 10.3 (7560) | 8.6 (5997) | 9.5 (13557) |
| Parkinson | 0.1 (56) | 0.1 (39) | 0.1 (95) |
| Epilepsy | 1.1 (782) | 0.9 (655) | 1.0 (1437) |
| Cerebral palsy | 0.1 (64) | 0.1 (50) | 0.1 (114) |
| Motor Neuron Disease | <5 | <5 | 0.0 (7) |
| Huntington’s disease | <5 | <5 | <5 |
| Myasthenia | 0.1 (99) | 0.1 (88) | 0.1 (187) |
| Downs syndrome | 0.0 (20) | 0.0 (14) | 0.0 (34) |
| Learning disabilities excluding downs | 0.0 (25) | 0.0 (28) | 0.0 (53) |

\*SGTF status was used as a proxy for VOC B.1.1.7.

**Table S3: Demographic and clinical characteristics for primary care patients tested positive in the community between 1st November 2020 and 26th January 2021 (primary care cohort) who survived or died within the study period and those who have received or not critical care.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Alive** | **Died** | **Not critical care** | **Critical care** |
|  | *Cols% (counts)* | *Cols% (counts)* | *Cols% (counts)* | *Cols% (counts)* |
| **Total number of patients** | 197807 | 613 | 197708 | 712 |
| **ICU admitted/Deaths** | 0.3 (563) | 24.3 (149) | 0.2 (493) | 24.9 (177) |
| **Sex** |  |  |  |  |
| Female | 52.8 (104415) | 39.2 (240) | 52.8 (104428) | 31.9 (227) |
| Male | 47.2 (93392) | 60.8 (373) | 47.2 (93280) | 68.1 (485) |
| **Mean age (SD)** | 37.5 (17.7) | 74.7 (14.6) | 37.6 (17.8) | 57.9 (12.4) |
| **Age Categories** |  |  |  |  |
| 18-29 | 36.0 (71121) | <5 | 36.0 (71110) | 1.7 (12) |
| 30-39 | 19.9 (39411) | 2.1 (13) | 19.9 (39377) | 6.6 (47) |
| 40-49 | 17.1 (33858) | 3.1 (19) | 17.1 (33769) | 15.2 (108) |
| 50-59 | 15.6 (30879) | 10.9 (67) | 15.5 (30740) | 28.9 (206) |
| 60-69 | 7.5 (14875) | 17.1 (105) | 7.5 (14771) | 29.4 (209) |
| 70-79 | 2.7 (5359) | 23.7 (145) | 2.7 (5392) | 15.7 (112) |
| 80-89 | 1.0 (1933) | 26.4 (162) | 1.1 (2077) | 2.5 (18) |
| 90-99 | 0.2 (371) | 16.5 (101) | 0.2 (472) | 0 |
| **Ethnicity** |  |  |  |  |
| White | 59.4 (117530) | 64.1 (393) | 59.4 (117485) | 61.5 (438) |
| Indian | 4.0 (7918) | 4.6 (28) | 4.0 (7900) | 6.5 (46) |
| Pakistani | 4.2 (8336) | 5.2 (32) | 4.2 (8331) | 5.2 (37) |
| Bangladeshi | 2.8 (5547) | 1.6 (10) | 2.8 (5543) | 2.0 (14) |
| Other Asian | 2.3 (4476) | 1.3 (8) | 2.3 (4469) | 2.1 (15) |
| Caribbean | 0.9 (1729) | 1.6 (10) | 0.9 (1727) | 1.7 (12) |
| Black African | 2.1 (4091) | 1.1 (7) | 2.1 (4080) | 2.5 (18) |
| Chinese | 0.3 (529) | 0.5 (3) | 0.3 (530) | <5 |
| Other ethnic group | 3.9 (7785) | 3.9 (24) | 3.9 (7776) | 4.6 (33) |
| Not recorded | 20.2 (39866) | 12.6 (77) | 20.2 (39867) | 13.6 (97) |
| **Date of positive test** |  |  |  |  |
| 1 Nov to 14 Nov | 14.1 (27853) | 14.8 (91) | 14.1 (27848) | 13.5 (96) |
| 15 Nov to 28 Nov | 9.8 (19335) | 8.6 (53) | 9.8 (19317) | 10.0 (71) |
| 29 Nov to 12 Dec | 9.4 (18637) | 9.3 (57) | 9.4 (18627) | 9.4 (67) |
| 13 Dec to 26 Dec | 17.4 (34409) | 22.5 (138) | 17.4 (34420) | 17.8 (127) |
| 27 Dec to 10 Jan | 29.4 (58092) | 32.1 (197) | 29.4 (58029) | 36.5 (260) |
| 11 Jan to 26 Jan | 20.0 (39481) | 12.4 (76) | 20.0 (39467) | 12.8 (91) |
| **House size** |  |  |  |  |
| 1 person | 26.2 (51781) | 37.7 (231) | 26.2 (51784) | 32.0 (228) |
| 2 people | 20.1 (39798) | 29.0 (178) | 20.1 (39802) | 24.4 (174) |
| 3-5 people | 46.1 (91260) | 19.2 (118) | 46.1 (91117) | 36.7 (261) |
| 6+ people | 7.6 (14968) | 14.0 (86) | 7.6 (15005) | 6.9 (49) |
| **House type** |  |  |  |  |
| Neither | 99.7 (197205) | 91.8 (563) | 99.7 (197057) | 99.9 (711) |
| Carehome | 0.2 (447) | 8.2 (50) | 0.3 (496) | <5 |
| Homeless | 0.1 (155) | 0 | 0.1 (155) | 0 |
| **BMI** |  |  |  |  |
| <25 | 54.7 (108272) | 49.4 (303) | 54.8 (108328) | 34.7 (247) |
| 25-30 | 12.8 (25221) | 22.7 (139) | 12.7 (25160) | 28.1 (200) |
| 30-40 | 5.3 (10454) | 13.2 (81) | 5.3 (10401) | 18.8 (134) |
| >= 40 | 2.9 (5645) | 7.5 (46) | 2.8 (5596) | 13.3 (95) |
| Not recorded | 24.4 (48215) | 7.2 (44) | 24.4 (48223) | 5.1 (36) |
| **Smoking status** |  |  |  |  |
| Non smoker | 56.3 (111304) | 53.0 (325) | 56.2 (111189) | 61.8 (440) |
| Ex smoker | 17.5 (34649) | 41.6 (255) | 17.5 (34661) | 34.1 (243) |
| Light smoker | 9.0 (17712) | 3.1 (19) | 9.0 (17715) | 2.2 (16) |
| Moderate smoker | 1.7 (3266) | 1.0 (6) | 1.7 (3268) | <5 |
| Heavy smoker | 0.6 (1128) | <5 | 0.6 (1127) | <5 |
| Not recorded | 15.0 (29748) | 0.8 (5) | 15.0 (29748) | 0.7 (5) |
| **Geographical region** |  |  |  |  |
| East Midlands | 1.4 (2824) | 1.6 (10) | 1.4 (2826) | 1.1 (8) |
| East of England | 2.7 (5328) | 2.0 (12) | 2.7 (5328) | 1.7 (12) |
| London | 25.5 (50529) | 18.8 (115) | 25.5 (50510) | 18.8 (134) |
| North East | 3.1 (6220) | 6.5 (40) | 3.2 (6229) | 4.4 (31) |
| North West | 24.8 (49045) | 29.2 (179) | 24.8 (48990) | 32.9 (234) |
| South Central | 11.0 (21770) | 9.3 (57) | 11.0 (21738) | 12.5 (89) |
| South East | 10.9 (21478) | 12.4 (76) | 10.9 (21499) | 7.7 (55) |
| South West | 4.0 (7835) | 3.9 (24) | 4.0 (7832) | 3.8 (27) |
| West Midlands | 13.3 (26297) | 12.7 (78) | 13.3 (26270) | 14.7 (105) |
| Yorkshire & Humber | 3.3 (6481) | 3.6 (22) | 3.3 (6486) | 2.4 (17) |
| **Deprivation quintile** |  |  |  |  |
| 1 (least deprived) | 20.3 (40139) | 19.1 (117) | 20.3 (40121) | 18.9 (135) |
| 2 | 21.6 (42664) | 25.3 (155) | 21.6 (42667) | 21.4 (152) |
| 3 | 21.4 (42300) | 25.3 (155) | 21.4 (42277) | 25.0 (178) |
| 4 | 19.9 (39468) | 17.4 (107) | 19.9 (39449) | 17.7 (126) |
| 5 (most deprived) | 16.1 (31867) | 12.4 (76) | 16.1 (31826) | 16.4 (117) |
| Not recorded | 0.7 (1369) | <5 | 0.7 (1368) | <5 |
| **Comorbidities** |  |  |  |  |
| Asthma | 15.0 (29676) | 18.9 (116) | 15.0 (29645) | 20.6 (147) |
| COPD | 0.9 (1807) | 10.8 (66) | 0.9 (1840) | 4.6 (33) |
| Diabetes type 1 | 0.5 (1057) | <5 | 0.5 (1052) | 0.8 (6) |
| Diabetes type 2 | 4.6 (9088) | 32.8 (201) | 4.6 (9116) | 24.3 (173) |
| Hypertension | 9.8 (19295) | 55.6 (341) | 9.8 (19366) | 37.9 (270) |
| Parkinson | 0.1 (136) | 1.6 (10) | 0.1 (145) | <5 |
| Epilepsy | 1.1 (2136) | 2.3 (14) | 1.1 (2140) | 1.4 (10) |
| Cerebral palsy | 0.1 (180) | 0 | 0.1 (180) | 0 |
| Motor Neuron Disease | 0.0 (7) | <5 | 0.0 (8) | 0 |
| Huntington’s disease | 0.0 (6) | 0 | 0.0 (6) | 0 |
| Multiple sclerosis | 0.1 (265) | <5 | 0.1 (266) | <5 |
| Myasthenia | 0.0 (46) | <5 | 0.0 (47) | <5 |
| Downs syndrome | 0.0 (78) | <5 | 0.0 (80) | <5 |
| Learning disabilities excluding downs | 1.6 (3122) | 3.1 (19) | 1.6 (3127) | 2.0 (14) |

\*SGTF status was used as a proxy for VOC B.1.1.7.

**Table S4: Demographic, medical characteristics and indicators of acute severity observed for critically ill patients tested positive in the community between 1st November 2020 and 27th January 2021 (critical care cohort) in the matched cohort dataset, by variant.**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Non-VOC B.1.1.7** | **VOC B.1.1.7\*** | **Full Cohort** |
|  | *Cols% (counts)* | *Cols% (counts)* | *Cols% (counts)* |
| **Total number of patients** | 761 | 761 | 1522 |
| **Mean age (SD)** | 60.0 (12.6) | 57.6 (12.5) | 58.8 (12.6) |
| **Sex** |  |  |  |
| Female | 31.0 (236) | 36.7 (279) | 33.8 (515) |
| Male | 69.0 (525) | 63.3 (482) | 66.2 (1007) |
| **Ethnicity** |  |  |  |
| White | 64.7 (492) | 68.3 (520) | 66.5 (1012) |
| Indian | 5.8 (44) | 2.5 (19) | 4.1 (63) |
| Pakistani | 4.1 (31) | 6.4 (49) | 5.3 (80) |
| Bangladeshi | 2.5 (19) | 1.6 (12) | 2.0 (31) |
| Other Asian | 1.2 (9) | 3.2 (24) | 2.2 (33) |
| Caribbean | 0.0 (0) | 0.7 (5) | 0.3 (5) |
| Black African | 0.7 (5) | 1.6 (12) | 1.1 (17) |
| Chinese | 0.8 (6) | 0.1 (1) | 0.5 (7) |
| Other ethnic group | 4.1 (31) | 3.8 (29) | 3.9 (60) |
| Not recorded | 16.3 (124) | 11.8 (90) | 14.1 (214) |
| **Prior length of hospital stay** |  |  |  |
| Mean (SD) | 2.6 (5.0) | 2.3 (13.7) | 2.5 (10.3) |
| Median IQR | 1 (0 - 3) | 1 (0 - 3) | 1 (0 - 3) |
| **Dependency before admission to acute hospital care** |  |  |  |
| Able to live without assistance in daily activities | 70.8 (539) | 74.2 (565) | 72.5 (1104) |
| Some assistance in daily activities | 9.1 (69) | 6.6 (50) | 7.8 (119) |
| Total assistance with all daily activities | 0.9 (7) | <5 | 0.7 (10) |
| Not recorded | 19.2 (146) | 18.8 (143) | 19.0 (289) |
| **Severe comorbidities** |  |  |  |
| Cardiovascular | <5 | 1.1 (8) | 0.7 (10) |
| Respiratory | 2.5 (19) | 1.2 (9) | 1.8 (28) |
| Renal | 0.7 (5) | 0.8 (6) | 0.7 (11) |
| Liver | <5 | <5 | <5 |
| Metastatic disease | 1.3 (10) | <5 | 0.9 (13) |
| Haematological malignancy | 0.7 (5) | <5 | 0.5 (8) |
| Immunocompromised | 2.1 (16) | 1.1 (8) | 1.6 (24) |
| **BMI** |  |  |  |
| <25 | 38.1 (290) | 35.0 (266) | 36.5 (556) |
| 25 to <30 | 20.2 (154) | 21.9 (167) | 21.1 (321) |
| 30 to <40 | 30.0 (228) | 30.7 (234) | 30.4 (462) |
| 40+ | 11.7 (89) | 12.4 (94) | 12.0 (183) |
| **CPR within previous 21h** |  |  |  |
| In the community | 0.7 (5) | 0.3 (2) | 0.5 (7) |
| In the hospital | 1.3 (10) | 0.7 (5) | 1.0 (15) |
| No | 84.6 (644) | 86.6 (659) | 85.6 (1303) |
| Not recorded | 13.4 (102) | 12.5 (95) | 12.9 (197) |
| **Currently or recently pregnant** |  |  |  |
| Currently pregnant | <5 | <5 | 0.4 (6) |
| Recently pregnant (within 6 weeks) | <5 | 0.8 (6) | 0.5 (7) |
| Not known to be pregnant | 99.5 (757) | 98.8 (752) | 99.1 (1509) |
| **Invasively ventilated within first 24h** |  |  |  |
| No | 56.1 (427) | 58.6 (446) | 57.4 (873) |
| Yes | 22.2 (169) | 19.8 (151) | 21.0 (320) |
| Not recorded | 21.7 (165) | 21.6 (164) | 21.6 (329) |
| **APACHE II score** |  |  |  |
| Mean (SD) | 13.9 (5.0) | 12.7 (4.9) | 13.3 (5.0) |
| Median (IQR) | 13 (10 - 16) | 13 (10 - 16) | 13 (10 - 16) |
| **PaO2/FiO2 ratio** |  |  |  |
| Median (IQR) | 13.5 (9.5 – 18.3) | 13.0 (9.7 – 17.6) | 13.2 (9.7 – 18.0) |
| **PaO2/FiO2 ratio** |  |  |  |
| < 13.3 kPa (<100 mmHg) | 36.5 (278) | 38.2 (291) | 37.4 (569) |
| 13.3-16.6 kPa (100-200 mmHg) | 32.6 (248) | 32.6 (248) | 32.6 (496) |
| > 26.6 kPa (> 200 mmHg) | 5.5 (42) | 3.8 (29) | 4.7 (71) |
| Not recorded | 25.4 (193) | 25.4 (193) | 25.4 (386) |
| **FiO2** |  |  |  |
| Median (IQR) | 0.6 (0.5 – 0.75) | 0.6 (0.5 – 0.8) | 0.6 (0.50 – 0.75) |

\*SGTF status was used as a proxy for VOC B.1.1.7

**Table S5: Demographic, medical characteristics and indicators of acute severity observed for critically ill patients tested positive in the community between 1st November 2020 and 27th January 2021 (critical care cohort) who have completed their critical care outcome (discharged alive or dead), by variant.**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Non-** **VOC B.1.1.7** | **VOC B.1.1.7\*** | **Full Cohort** |
|  | *Cols% (counts)* | *Cols% (counts)* | *Cols% (counts)* |
| **Total number of patients** | 1235 | 1173 | 2408 |
| **Mean age (SD)** | 59.3 (12.9) | 57.3 (13.0) | 58.3 (13.0) |
| **Sex** |  |  |  |
| Female | 32.0 (395) | 33.9 (398) | 32.9 (793) |
| Male | 68.0 (840) | 66.1 (775) | 67.1 (1615) |
| **Ethnicity** |  |  |  |
| White | 72.0 (889) | 67.3 (790) | 69.7 (1679) |
| Indian | 4.2 (52) | 4.4 (52) | 4.3 (104) |
| Pakistani | 6.4 (79) | 4.3 (50) | 5.4 (129) |
| Bangladeshi | 1.8 (22) | 2.1 (25) | 2.0 (47) |
| Other Asian | 4.4 (54) | 4.3 (51) | 4.4 (105) |
| Caribbean | 0.8 (10) | 1.6 (19) | 1.2 (29) |
| Black African | 0.9 (11) | 1.7 (20) | 1.3 (31) |
| Chinese | 0.3 (4) | 0.5 (6) | 0.4 (10) |
| Other ethnic group | 4.1 (51) | 5.0 (59) | 4.6 (110) |
| Not recorded | 72.0 (889) | 67.3 (790) | 69.7 (1679) |
| **Prior length of hospital stay** |  |  |  |
| Mean (SD) | 2.2 (10.2) | 2.4 (14.7) | 2.3 (12.6) |
| Median IQR | 1 (0 - 3) | 1 (0 - 3) | 1 (0 - 3) |
| **Dependency before admission to acute hospital care** |  |  |  |
| Able to live without assistance in daily activities | 89.0 (1099) | 85.3 (1001) | 87.2 (2100) |
| Some assistance in daily activities | 8.0 (99) | 6.9 (81) | 7.5 (180) |
| Total assistance with all daily activities | 0.2 (2) | <5 | 0.2 (5) |
| Not recorded | 2.8 (381) | 7.5 (88) | 5.1 (123) |
| **Severe comorbidities** |  |  |  |
| Cardiovascular | <5 | 0.6 (7) | 0.4 (10) |
| Respiratory | 0.6 (8) | 0.9 (11) | 0.8 (19) |
| Renal | 0.6 (7) | <5 | 0.5 (11) |
| Liver | 0.5 (6) | <5 | 0.3 (7) |
| Metastatic disease | 0.4 (5) | <5 | 0.3 (7) |
| Haematological malignancy | 1.0 (12) | <5 | 0.6 (15) |
| Immunocompromised | 2.3 (28) | 1.2 (14) | 1.7 (42) |
| **BMI** |  |  |  |
| <25 | 22.2 (274) | 26.9 (315) | 24.5 (589) |
| 25 to <30 | 28.7 (355) | 24.6 (289) | 26.7 (644) |
| 30 to <40 | 36.6 (452) | 34.2 (401) | 35.4 (853) |
| 40+ | 12.5 (154) | 14.3 (168) | 13.4 (322) |
| **CPR within previous 21h** |  |  |  |
| In the community | 0.7 (9) | 0.5 (6) | 0.6 (15) |
| In the hospital | 0.6 (8) | 0.9 (11) | 0.8 (19) |
| No | 97.6 (1205) | 94.3 (1106) | 96.0 (2311) |
| Not recorded | 1.1 (13) | 4.2 (50) | 2.6 (63) |
| **Currently or recently pregnant** |  |  |  |
| Currently pregnant | 0.5 (6) | 0.5 (6) | 0.5 (12) |
| Recently pregnant (within 6 weeks) | 0.3 (4) | 0.6 (7) | 0.5 (11) |
| Not known to be pregnant | 99.2 (1225) | 98.9 (1160) | 99.0 (2385) |
| **Invasively ventilated within first 24h** |  |  |  |
| No | 76.1 (940) | 69.1 (811) | 72.7 (1751) |
| Yes | 20.5 (253) | 20.3 (238) | 20.4 (491) |
| Not recorded | 3.4 (42) | 10.5 (124) | 11.7 (166) |
| **APACHE II score** |  |  |  |
| Mean (SD) | 13.9 (5.0) | 12.7 (4.9) | 13.3 (5.0) |
| Median (IQR) | 14 (11 - 16) | 12 (10 - 15) | 13 (10 - 16) |
| **PaO2/FiO2 ratio** |  |  |  |
| Median (IQR) | 13.3 (10.0 – 18.2) | 13.5 (9.8 – 18.2) | 13.4 (10 – 18.2) |
| **PaO2/FiO2 ratio** |  |  |  |
| < 13.3 kPa (<100 mmHg) | 45.3 (559) | 40.2 (471) | 42.8 (1030) |
| 13.3-16.6 kPa (100-200 mmHg) | 38.8 (479) | 35.4 (415) | 37.1 (894) |
| > 26.6 kPa (> 200 mmHg) | 7.0 (87) | 6.6 (78) | 6.9 (165) |
| Not recorded | 8.9 (110) | 17.8 (209) | 13.2 (319) |
| **FiO2** |  |  |  |
| Median (IQR) | 0.6 (0.45 – 0.75) | 0.6 (0.4 – 0.76) | 0.6 (0.45 – 0.75) |

\*SGTF status was used as a proxy for VOC B.1.1.7

**Table S6: Critical care outcomes observed for critically ill patients tested positive in the community between 1st November 2020 and 27th January 2021 (critical care cohort), by variant.**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Non-VOC B.1.1.7** | **VOC B.1.1.7†** | **Full Cohort** |
|  | *Cols% (counts)* | *Cols% (counts)* | *Cols% (counts)* |
| **Outcome at end of critical care** |  |  |  |
| Discharged | 56.5 (798) | 39.0 (788) | 46.2 (1586) |
| Died | 30.9 (437) | 19.1 (385) | 24.0 (822) |
| Still receiving critical care | 12.6 (178) | 41.9 (846) | 29.8 (1024) |
| **Duration of critical care\***  **Days, median (IQR)** |  |  |  |
| Discharged patients | 6 (3 - 10) | 5 (3 - 8) | 5 (3 - 9) |
| Deaths | 13 (7 - 19) | 10 (5 - 15) | 10 (6 - 17) |
| **Organ support\*** |  |  |  |
| No respiratory support | 2.3 (29) | 4.6 (54) | 3.4 (83) |
| Advanced respiratory support | 46.0 (568) | 42.7 (501) | 44.4 (1069) |
| Basic respiratory support | 86.2 (1064) | 81.8 (960) | 84.1 (2024) |
| No cardiovascular support | 5.5 (68) | 8.9 (104) | 7.1 (172) |
| Advanced cardiovascular support | 18.5 (229) | 18.7 (219) | 18.6 (448) |
| Basic cardiovascular support | 93.4 (1153) | 89.2 (1046) | 91.3 (2199) |
| Renal support | 13.5 (167) | 13.4 (157) | 13.5 (324) |
| Liver support | 2.6 (32) | 6.5 (76) | 4.5 (108) |
| Neurological support | 7.7 (95) | 9.2 (108) | 8.4 (203) |
| **Duration of organ support\***  **Days, median (IQR)** |  |  |  |
| Advanced respiratory support | 11 (5 - 19) | 8 (5 - 13) | 9 (5 - 16) |
| Total (advanced + basic) respiratory support | 8 (4 - 15) | 6 (4 - 11) | 7 (4 - 13) |
| Advanced cardiovascular support | 2 (1 - 4) | 2 (1 - 4) | 2 (1 - 4) |
| Total (advanced + basic) cardiovascular support | 8 (5 - 15) | 6 (4 - 11) | 7 (4 - 13) |
| Renal support | 5.5 (3 - 10) | 4.5 (2 - 9) | 5 (2 - 10) |

\* Among patients who have been discharged or died. **†**SGTF status was used as a proxy for VOC B.1.1.7

**Table S7: Demographics characteristics of primary care patients tested positive in hospital and community settings.**

|  |  |  |
| --- | --- | --- |
|  | **Hospital tests** | **Community tests** |
|  | *Cols% (counts)* | *Cols% (counts)* |
| **Total number of patients** | 15.9 (91965) | 85.1 (483667) |
| **Mean age (SD)** | 58.1 (23.4) | 38.1 (18.8) |
| **ICU admitted** | 4.3 (3998) | 0.3 (1538) |
| **SGTF** | 0.0 (16) | 24.8 (119863) |
| **Sex** |  |  |
| Female | 54.6 (50221) | 54.4 (263169) |
| Male | 45.4 (41744) | 45.6 (220498) |
| **Ethnicity** |  |  |
| White | 62.2 (57239) | 59.2 (286250) |
| Indian | 3.5 (3264) | 3.8 (18248) |
| Pakistani | 2.5 (2273) | 3.9 (18776) |
| Bangladeshi | 1.6 (1484) | 3.1 (14798) |
| Other Asian | 2.6 (2421) | 2.3 (10931) |
| Caribbean | 2.0 (1813) | 1.0 (4922) |
| Black African | 3.3 (3010) | 2.4 (11426) |
| Chinese | 0.3 (302) | 0.3 (1470) |
| Other ethnic group | 4.2 (3826) | 4.2 (20514) |
| Not recorded | 17.8 (16333) | 19.9 (96332) |
| **House size** |  |  |
| 1 person | 38.5 (35422) | 26.8 (129796) |
| 2 people | 22.9 (21048) | 19.8 (95754) |
| 3-5 people | 28.1 (25817) | 44.6 (215574) |
| 6-9 people | 4.5 (4120) | 6.7 (32212) |
| 10 or more | 6.0 (5558) | 2.1 (10331) |
| **House type** |  |  |
| Neither | 93.8 (86270) | 98.7 (477529) |
| Carehome | 5.9 (5457) | 1.2 (5725) |
| Homeless | 0.3 (238) | 0.1 (413) |
| **BMI** |  |  |
| <25 | 60.0 (55138) | 55.7 (269580) |
| 25-30 | 16.0 (14721) | 12.4 (59924) |
| 30-40 | 7.2 (6663) | 5.1 (24553) |
| >= 40 | 4.1 (3726) | 2.7 (13143) |
| Not recorded | 12.7 (11672) | 24.1 (116467) |
| **Smoking status** |  |  |
| Non smoker | 58.2 (53505) | 56.9 (275422) |
| Ex smoker | 27.0 (24828) | 17.1 (82925) |
| Light smoker | 7.3 (6728) | 9.1 (44237) |
| Moderate smoker | 1.4 (1282) | 1.6 (7905) |
| Heavy smoker | 0.8 (747) | 0.6 (2728) |
| Not recorded | 5.3 (4875) | 14.6 (70450) |
| **Geographical region** |  |  |
| East Midlands | 1.6 (1490) | 2.6 (12669) |
| East of England | 3.4 (3157) | 3.1 (15066) |
| London | 25.3 (23266) | 29.2 (141231) |
| North East | 3.0 (2772) | 2.4 (11678) |
| North West | 23.4 (21480) | 20.7 (100300) |
| South Central | 11.0 (10125) | 9.9 (47971) |
| South East | 11.2 (10267) | 11.7 (56709) |
| South West | 7.0 (6407) | 6.6 (31722) |
| West Midlands | 10.8 (9951) | 10.4 (50511) |
| Yorkshire & Humber | 3.3 (3050) | 3.3 (15810) |
| **Deprivation quintile** |  |  |
| 1 (least deprived) | 19.7 (18120) | 19.4 (93774) |
| 2 | 20.6 (18902) | 20.9 (101186) |
| 3 | 21.5 (19798) | 20.8 (100733) |
| 4 | 20.2 (18565) | 20.0 (96896) |
| 5 (most deprived) | 17.5 (16075) | 18.2 (87946) |
| Not recorded | 0.5 (505) | 0.6 (3132) |
| **Comorbidities** |  |  |
| Asthma | 15.2 (14011) | 14.7 (71129) |
| COPD | 7.0 (6463) | 1.1 (5115) |
| Diabetes type 1 | 0.9 (845) | 0.5 (2616) |
| Diabetes type 2 | 17.9 (16457) | 4.9 (23627) |
| Hypertension | 34.6 (31847) | 10.6 (51250) |
| Parkinson | 1.3 (1237) | 0.2 (793) |
| Epilepsy | 2.5 (2265) | 1.2 (5747) |
| Cerebral palsy | 0.2 (218) | 0.1 (538) |
| Motor Neuron Disease | 0.0 (41) | 0.0 (23) |
| Huntington’s disease | 0.0 (38) | 0.0 (53) |
| Multiple sclerosis | 0.4 (372) | 0.1 (720) |
| Myasthenia | 0.1 (93) | 0.0 (113) |
| Downs syndrome | 0.1 (122) | 0.1 (257) |
| Learning disabilities excluding Downs | 3.5 (3175) | 1.7 (8431) |

**Figure S1: (Top-left) Weekly positive tests by variant from 1st November to 26th January 2021, (top-right) weekly deaths by variant from 1st November to 26th January 2021, (bottom-left) weekly critical care admissions per variant from 1st November to 26th January 2021, (bottom-right) weekly deaths at the end of critical care by variant from 1st November2020 to 27th January 2021. SGTF status was used as a proxy for VOC B.1.1.7.**

