Supplemental Appendix

Genetic drift versus climate region spreading dynamics of COVID-19

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Supplemental Figures

Figure S1. Worldwide temperature distributions and climate zones.

(A) Worldwide temperature averages versus geographic areas are indicated in pseudocolors. Average temperatures are indicated for early spring. Temperature color codes are indicated below the graph.

(B) Köppen–Geiger climate classification map of Europe. (inset) Climate areas color codes.
Figure S2. Global accumulation of genomic mutations of SARS-CoV-2.

Accumulation of genomic mutations of SARS-CoV-2 over time around the globe, at the early time points of the pandemic. Each data-point is represented as a bead, whereby each bead corresponds to a specific set of virus mutations (mutation haplotype) (nextstrain.org/ncov/).

(bottom left) Country color codes. Beads and bead sequences were color-coded, according to the country where the virus sample was isolated from. The ‘beads-on-a-string’ plots link successions of viral mutations, i.e. mutation haplotypes that acquired additional mutations over time. Phylogeny trees for such mutations are presented, that draw distinct evolutionary branches of SARS-CoV-2 over calendar dates, which are indicated at the bottom of each graph. Larger beads indicate mutations identified in the indicated country. UK: bright yellow; Australia: blue; Canada: red. Rectangles enclose mutations evolutionary branches by country.
Figure S3. Genomic mutations of SARS-CoV-2 in Europe.

Accumulation of genomic mutations of SARS-CoV-2 over time in Europe, at the early time points of the pandemic. Each data-point is represented as a bead, whereby each bead corresponds to a specific set of virus mutations (mutation haplotype). Beads and bead sequences are color-coded, according to the country where the virus sample was isolated from (upper left). The ‘beads-on-a-string’ plots link successions of viral mutations, i.e. mutation haplotypes that acquired additional mutations over time. Phylogeny trees for such mutations are presented, that draw distinct evolutionary branches of SARS-CoV-2 over calendar dates, which are indicated at the bottom of each graph (nextstrain.org/ncov/europe?branchLabel=aa).
Figure S4. Genomic mutations of SARS-CoV-2 - Spain.

The accumulation of genomic mutations of SARS-CoV-2 over time in Spain, at the early time points of the pandemic, is shown as strings of dark-yellow large dots. Each data-point is represented as a bead, whereby each bead corresponds to a specific set of virus mutations (mutation haplotype). Beads and bead sequences are color-coded, according to the country where the virus sample was isolated from (upper left). The ‘beads-on-a-string’ plots link successions of viral mutations, i.e. mutation haplotypes that acquired additional mutations over time. Phylogeny trees for such mutations are presented, that draw distinct evolutionary branches of SARS-CoV-2 (nextstrain.org/ncov/europe?branchLabel=aa). Dark-yellow rectangles enclose successions of viral mutations in Spain in each phylogenetic branch. The number of accumulated mutations in individual viral isolates is indicated at the bottom.
Figure S5. Genomic mutations of SARS-CoV-2 - Italy.

The accumulation of genomic mutations of SARS-CoV-2 over time in Italy, at the early time points of the pandemic, is shown as strings of yellow large dots. Each data-point is represented as a bead, whereby each bead corresponds to a specific set of virus mutations (mutation haplotype). Beads and bead sequences are color-coded, according to the country where the virus sample was isolated from (upper left). The ‘beads-on-a-string’ plots link successions of viral mutations, i.e. mutation haplotypes that acquired additional mutations over time. Phylogeny trees for such mutations are presented, that draw distinct evolutionary branches of SARS-CoV-2 (nextstrain.org/ncov/europe?branchLabel=aa). Yellow rectangles enclose successions of viral mutations in Italy in each phylogenetic branch. The number of accumulated mutations in individual viral isolates is indicated at the bottom.
Figure S6. Genomic mutations of SARS-CoV-2 - Sweden.

The accumulation of genomic mutations of SARS-CoV-2 over time in Sweden, at the early time points of the pandemic, is shown as strings of red large dots. Each data-point is represented as a bead, whereby each bead corresponds to a specific set of virus mutations (mutation haplotype). Beads and bead sequences are color-coded, according to the country where the virus sample was isolated from (upper left). The ‘beads-on-a-string’ plots link successions of viral mutations, i.e. mutation haplotypes that acquired additional mutations over time. Phylogeny trees for such mutations are presented, that draw distinct evolutionary branches of SARS-CoV-2 (nextstrain.org/ncov/europe?branchLabel=aa). Red rectangles enclose successions of viral mutations in Sweden in each phylogenetic branch. The number of accumulated mutations in individual viral isolates is indicated at the bottom.
Figure S7. Genomic mutations of SARS-CoV-2 - The Netherlands.

The accumulation of genomic mutations of SARS-CoV-2 over time in The Netherlands, at the early time points of the pandemic, is shown as strings of bright-green large dots. Each data-point is represented as a bead, whereby each bead corresponds to a specific set of virus mutations (mutation haplotype). Beads and bead sequences are color-coded, according to the country where the virus sample was isolated from (upper left). The ‘beads-on-a-string’ plots link successions of viral mutations, i.e. mutation haplotypes that acquired additional mutations over time. Phylogeny trees for such mutations are presented, that draw distinct evolutionary branches of SARS-CoV-2 (nextstrain.org/ncov/europe?branchLabel=aa). Bright-green rectangles enclose successions of viral mutations in The Netherlands in each phylogenetic branch.

The number of accumulated mutations in individual viral isolates is indicated at the bottom.
Figure S8. Genomic mutations of SARS-CoV-2 - Belgium.

The accumulation of genomic mutations of SARS-CoV-2 over time in Belgium, at the early time points of the pandemic, is shown as strings of light-green large dots. Each data-point is represented as a bead, whereby each bead corresponds to a specific set of virus mutations (mutation haplotype). Beads and bead sequences are color-coded, according to the country where the virus sample was isolated from (upper left). The ‘beads-on-a-string’ plots link successions of viral mutations, i.e. mutation haplotypes that acquired additional mutations over time. Phylogeny trees for such mutations are presented, that draw distinct evolutionary branches of SARS-CoV-2 (nextstrain.org/ncov/europe?branchLabel=aa). Light-green rectangles enclose successions of viral mutations in Belgium in each phylogenetic branch.

The number of accumulated mutations in individual viral isolates is indicated at the bottom.
The accumulation of genomic mutations of SARS-CoV-2 over time in France, at the early time points of the pandemic, is shown as strings of deep-green large dots. Each data-point is represented as a bead, whereby each bead corresponds to a specific set of virus mutations (mutation haplotype). Beads and bead sequences are color-coded, according to the country where the virus sample was isolated from (upper left). The ‘beads-on-a-string’ plots link successions of viral mutations, i.e. mutation haplotypes that acquired additional mutations over time. Phylogeny trees for such mutations are presented, that draw distinct evolutionary branches of SARS-CoV-2 (nextstrain.org/ncov/europe?branchLabel=aa). Deep-green rectangles enclose successions of viral mutations in France in each phylogenetic branch.

The number of accumulated mutations in individual viral isolates is indicated at the bottom.
Figure S10. Progression of COVID-19 over Italy - Northern Provinces *.

*: Cumulative case incidence in the indicated municipalities is plotted versus time (days, from March 3rd to March 27th, 2020).
For comparison purposes, all graphs were normalized versus the highest number of cases per province. The doubling times of COVID-19 cases were computed on non-normalized, absolute numbers of infection cases.
Graphs are in alphabetical order by province name.
Figure S11. Progression of COVID-19 over Italy - Central & Southern Provinces*.

Central provinces

Southern provinces

*: Cumulative case incidence in the indicated municipalities is plotted versus time (days, from March 3rd to March 27th, 2020). For comparison purposes, all graphs were normalized versus the highest number of cases per Province. The doubling times of COVID-19 cases were computed on non-normalized, absolute numbers of infection cases. Graphs are in alphabetical order by province name.
Köppen–Geiger climate classification map of Italy. (red arrows) Data on COVID-19 spreading and disease outcome in individual regions (days; calendar time from March 3rd to March 27th, 2020) are overlaid over the country’s climate areas. (insets) Dark gray dots: SARS-CoV-2-positive cases; brown dots: hospitalized cases; green dots: intensive-care unit cases; orange dots: recovered cases. (bottom) Color codes for climate areas classification.
Figure S13. Progression of COVID-19 in Spain*.

*: Cumulative case incidence in Spain is plotted versus calendar dates (March 1-31, 2020).
Figure S14. Progression of COVID-19 in Norway*.

*: Cumulative case incidence in the indicated municipalities is plotted versus time (days; calendar dates from March 1\textsuperscript{st} to April 7\textsuperscript{th}, 2020). For comparison purposes, all graphs were normalized versus the highest number of cases per province. The doubling times of COVID-19 cases were computed on non-normalized, absolute numbers of infection cases. Graphs are in alphabetical order by province name.
Figure S15. Progression of COVID-19 in Finland*. 

*: Cumulative case incidence in the indicated municipalities is plotted versus calendar dates (March 1-April 7, 2020).
Figure S16. Progression of COVID-19 over Sweden*.

*: Cumulative case incidence in the indicated municipalities is plotted versus time (days; calendar dates from March 1st to March 23rd, 2020). For comparison purposes, all graphs were normalized versus the highest number of cases per province. The doubling times of COVID-19 cases were computed on non-normalized, absolute numbers of infection cases. Graphs are in alphabetical order by province name.
Figure S17. Progression of COVID-19 in France, Germany and UK*.

*: Laboratory-confirmed infection cases in Europe cases were assessed country by country before landmark dates (last data-point in each graph): France (dashboard.covid19.data.gouv.fr/vue-d-ensemble?location=n=FRA; April 4th 2020); Germany (corona.rki.de; April 2nd 2020); UK (www.nhs.uk/; April 9th 2020). Cumulative case incidence is plotted over time (days).
Supplemental online Table 1. COVID-19 spreading in Central and South America.

| Date      | Argentina | Brazil | Chile | Colombia | Costa Rica | Dominican Republic | Ecuador | Mexico | Panama | Peru | Uruguay | Venezuela | Trinidad and Tobago |
|-----------|-----------|--------|-------|----------|------------|-------------------|---------|--------|--------|------|---------|-----------|---------------------|
| March 1*  | 2         | 1      | 1     | 2        |            |                   |         |        |        |      |         |           |                     |
| March 2   | 2         | 1      | 1     | 5        |            |                   |         |        |        |      |         |           |                     |
| March 3   | 2         | 1      | 1     | 6        | 5           |                   |         |        |        |      |         |           |                     |
| March 4   | 1         | 2      | 1     | 7        | 5           |                   |         |        |        |      |         |           |                     |
| March 5   | 1         | 3      | 1     | 1        | 7           | 5                 |         |        |        |      |         |           |                     |
| March 6   | 1         | 7      | 1     | 1        | 1           | 1                 | 16      | 5      |        |      |         |           |                     |
| March 7   | 2         | 13     | 5     | 1        | 1           | 1                 | 14      | 5      | 1      |      |         |           |                     |
| March 8   | 9         | 19     | 5     | 1        | 5           | 1                 | 14      | 7      | 1      |      |         |           |                     |
| March 9   | 12        | 25     | 10    | 1        | 9           | 1                 | 15      | 7      | 1      |      |         |           |                     |
| March 10  | 12        | 25     | 13    | 3        | 9           | 5                 | 15      | 7      | 1      |      |         |           |                     |
| March 11  | 17        | 34     | 17    | 3        | 13          | 5                 | 15      | 7      | 8      |      |         |           |                     |
| March 12  | 19        | 52     | 23    | 9        | 13          | 5                 | 17      | 11     | 10     |      |         |           |                     |
| March 13  | 31        | 77     | 33    | 9        | 22          | 5                 | 17      | 12     | 14     |      |         |           |                     |
| March 14  | 34        | 98     | 43    | 16       | 23          | 5                 | 23      | 26     | 27     | 28   |         |           |                     |
| March 15  | 45        | 121    | 61    | 24       | 23          | 5                 | 23      | 41     | 27     | 43   |         |           |                     |
| March 16  | 56        | 200    | 75    | 24       | 23          | 5                 | 37      | 53     | 43     | 71   | 4       | 2        | 2                   |
| March 17  | 65        | 234    | 156   | 45       | 41          | 21                | 58      | 53     | 69     | 86   | 6       | 33       | 5                   |
| March 18  | 65        | 234    | 156   | 45       | 41          | 21                | 58      | 82     | 69     | 86   | 6       | 33       | 5                   |
| March 19  | 79        | 291    | 238   | 93       | 50          | 21                | 155     | 93     | 86     | 145  | 29      | 36       | 7                   |
| March 20  | 97        | 428    | 342   | 108      | 87          | 34                | 199     | 118    | 109    | 234  | 79      | 36       | 9                   |
| March 21  | 128       | 621    | 434   | 145      | 113         | 72                | 367     | 164    | 137    | 234  | 94      | 36       | 9                   |
| March 22  | 158       | 904    | 434   | 196      | 113         | 72                | 506     | 164    | 137    | 318  | 94      | 36       | 9                   |
| March 23  | 225       | 904    | 632   | 196      | 117         | 72                | 532     | 251    | 245    | 318  | 135     | 70       | 50                  |

*: Cumulative case incidences in the indicated countries were recorded from March 1st to March 23rd, 2020.
Supplemental online Table 2: COVID-19 in Middle-East, Africa, and Gulf countries.

|                | Iran | Pakistan | Saudi Arabia | Qatar | Bahrain | Egypt | Lebanon | Iraq | Kuwait | UAE | Morocco | Jordan | Tunisia | Oman | Afghanistan | South Africa | Algeria | Burkina Faso | Senegal | DRC | Cameroon |
|----------------|------|----------|--------------|-------|---------|-------|--------|------|--------|-----|---------|--------|---------|------|--------------|-------------|---------|--------------|---------|-----|----------|
| March 1*       | 593  | 4        | 1            | 40    | 1       | 2     | 13     | 45   | 19     | 6   | 1       | 1      | 1       | 6    | 1            | 5          | 2       |              | 3       | 1  |
| March 2        | 978  | 4        | 3            | 47    | 2       | 10    | 19     | 56   | 21     | 6   | 1       | 1      | 1       | 6    | 1            | 5          | 2       |              | 3       | 1  |
| March 3        | 1501 | 5        | 1            | 7     | 49      | 2     | 13     | 26   | 56     | 21  | 1       | 1      | 1       | 6    | 1            | 5          | 2       |              | 3       | 1  |
| March 4        | 2336 | 5        | 1            | 8     | 49      | 2     | 13     | 31   | 56     | 27  | 1       | 1      | 1       | 12   | 1            | 12         | 2       |              | 3       | 1  |
| March 5        | 2922 | 5        | 2            | 8     | 49      | 2     | 13     | 36   | 58     | 27  | 2       | 1      | 1       | 15   | 1            | 12         | 2       |              | 3       | 1  |
| March 6        | 3513 | 5        | 8            | 8     | 49      | 3     | 16     | 36   | 58     | 27  | 2       | 1      | 1       | 16   | 1            | 12         | 2       |              | 3       | 1  |
| March 7        | 4747 | 5        | 8            | 11    | 49      | 3     | 22     | 44   | 58     | 45  | 2       | 1      | 1       | 16   | 1            | 17         | 2       |              | 3       | 1  |
| March 8        | 5823 | 5        | 7            | 12    | 56      | 48    | 28     | 54   | 62     | 45  | 2       | 1      | 1       | 16   | 4            | 2          | 16      |              | 3       | 1  |
| March 9        | 6566 | 6        | 15           | 15    | 79      | 55    | 32     | 60   | 64     | 45  | 2       | 1      | 2       | 16   | 4            | 3          | 20      |              | 4       | 2  |
| March 10       | 7161 | 16       | 15           | 18    | 109     | 59    | 41     | 61   | 65     | 59  | 2       | 1      | 2       | 18   | 4            | 2          | 20      |              | 4       | 2  |
| March 11       | 8042 | 16       | 20           | 24    | 110     | 59    | 41     | 61   | 69     | 74  | 3       | 1      | 6       | 18   | 4            | 7          | 20      |              | 2        | 1  |
| March 12       | 9000 | 19       | 21           | 262   | 189     | 67    | 66     | 70   | 80     | 74  | 5       | 1      | 6       | 18   | 7            | 13         | 25      |              | 2        | 1  |
| March 13       | 10075| 20       | 21           | 262   | 195     | 67    | 66     | 70   | 80     | 85  | 6       | 1      | 7       | 18   | 7            | 17         | 25      |              | 2        | 1  |
| March 14       | 11364| 21       | 62           | 262   | 210     | 93    | 77     | 93   | 100    | 85  | 7       | 1      | 16      | 19   | 7            | 17         | 26      |              | 2        | 1  |
| March 15       | 12729| 28       | 103          | 337   | 211     | 93    | 93     | 93   | 112    | 85  | 18      | 1      | 16      | 20   | 10           | 38         | 37      |              | 3        | 2  |
| March 16       | 14991| 52       | 103          | 401   | 221     | 126   | 99     | 124  | 112    | 98  | 28      | 6      | 18      | 22   | 16           | 51         | 49      |              | 3        | 2  |
| March 17       | 14991| 187      | 133          | 439   | 229     | 166   | 109    | 124  | 130    | 98  | 38      | 35     | 24      | 24   | 22           | 62         | 60      |              | 20       | 2  |
| March 18       | 16169| 187      | 171          | 442   | 237     | 166   | 120    | 154  | 130    | 98  | 38      | 35     | 24      | 24   | 22           | 62         | 60      |              | 20       | 2  |
| March 19       | 17561| 241      | 238          | 442   | 258     | 196   | 133    | 164  | 142    | 113 | 49      | 52     | 29      | 33   | 22           | 116        | 72       |              | 26       | 3  |
| March 20       | 18407| 302      | 238          | 452   | 269     | 210   | 149    | 177  | 148    | 140 | 61      | 56     | 39      | 39   | 22           | 150        | 82       |              | 40       | 1  |
| March 21       | 19644| 461      | 274          | 460   | 285     | 256   | 163    | 193  | 159    | 140 | 74      | 69     | 54      | 48   | 24           | 205        | 94       |              | 40       | 15 |
| March 22       | 20610| 495      | 392          | 470   | 306     | 285   | 206    | 214  | 176    | 153 | 86      | 84     | 60      | 52   | 24           | 240        | 94       |              | 72       | 56 |
| March 23       | 21638| 748      | 511          | 494   | 337     | 327   | 248    | 233  | 189    | 153 | 115     | 112    | 75      | 55   | 40           | 274        | 201      |              | 75       | 67 |

*: Cumulative case incidences in the indicated countries were recorded from March 1st to March 23rd, 2020. UAE: United Arab Emirates. DRC: Democratic Republic of the Congo.
Supplemental online Table 3. Doubling times of COVID-19 cases in Italy by province *.

| Geographical Location | Doubling Time |
|-----------------------|---------------|
| AGRIGENTO             | 6.67 South    |
| ALESSANDRIA           | 5.55 North    |
| ANCONA                | 6.84 Center   |
| AOSTA                 | 6.29 North    |
| AREZZO                | 5.86 Center   |
| ASCOLI PICENO         | 5.19 Center   |
| ASTI                  | 5.41 North    |
| AVELLINO              | 6.06 South    |
| BARI                   | 4.90 South    |
| BAT                   | 3.97 South    |
| BELLUNO               | 6.10 North    |
| BENEVENTO             | 6.25 South    |
| BERGAMO               | 9.65 North    |
| BIELLA                | 5.17 North    |
| BOLOGNA               | 4.97 North    |
| BOLZANO               | 6.12 North    |
| BRESCEA               | 8.00 North    |
| BRINDISI              | 7.54 South    |
| CAGLIARI              | 6.55 South    |
| CALTANISSETTA         | 4.50 South    |
| CAMPOBASSO            | 6.33 Center   |
| CASERTA               | 6.40 South    |
| CATANIA               | 5.73 South    |
| CATANZARO             | 6.21 South    |
| CHIETI                | 5.64 Center   |
| COMO                  | 5.64 North    |
| COSENZA               | 4.10 South    |
| CREMONA               | 10.94 North   |
| CROTONE               | 6.22 South    |
| CUNEO                 | 5.01 North    |
| ENNA                  | 1.95 South    |
| FERMO                 | 5.00 Center   |
| FERRARA               | 5.00 North    |
| FIRENZE               | 5.89 Center   |
| FOSSANO               | 5.84 South    |
| FORLCESENA            | 6.00 North    |
| FROSINONE             | 4.86 Center   |
| GENOVA                | 6.88 North    |
| GORIZIA               | 4.69 North    |
| GROSSETO              | 6.74 Center   |
| IMPERIA               | 7.50 North    |
| ISERNIA               | 6.67 Center   |
| LAQUILA               | 4.50 Center   |
| LASPEZIA              | 7.81 North    |
| LATINA                | 5.17 Center   |
| LECCE                 | 5.35 South    |
| LECCO                 | 5.95 North    |
| LIVORNO               | 5.50 Center   |
| LODI                  | 15.60 North   |
| LUCCA                 | 6.48 Center   |
| MACERATA              | 5.60 Center   |
| MANTOVA               | 6.39 North    |
| MASSA-CARRARA         | 7.33 Center   |
| MATERA                | 2.00 South    |
| MESSINA               | 3.60 South    |
| MILANO                | 6.38 North    |
| MODENA                | 5.00 North    |
| MONZA (BRIANZA)       | 5.07 North    |
| NAPOLI                | 6.45 South    |
| Province                  | COVID-19 doubling time |
|---------------------------|------------------------|
| NOVARA                    | 5.33 North             |
| NUORO                     | 14.33 South            |
| ORISTANO                  | 5.50 South             |
| PADOVA                    | 7.63 North             |
| PALERMO                   | 2.74 South             |
| PARMA                     | 6.12 North             |
| PAVIA                     | 9.15 North             |
| PERUGIA                   | 5.42 Center            |
| PESARO                    | 9.81 Center            |
| PESCARA                   | 6.27 Center            |
| PIACENZA                  | 9.20 North             |
| PISA                      | 5.63 Center            |
| PISTOIA                   | 6.78 Center            |
| PORDENONE                 | 4.18 North             |
| POTENZA                   | 5.62 South             |
| PRATO                     | 5.21 Center            |
| RAGUSA                    | 0.85 South             |
| RAVENNA                   | 5.70 North             |
| REGGIO EMILIA             | 4.90 North             |
| RIEI                      | 4.75 Center            |
| RIMINI                    | 7.07 North             |
| ROMA                      | 5.53 Center            |
| ROVIGO                    | 6.45 North             |
| SALERNO                   | 5.22 South             |
| SASSARI                   | 5.70 South             |
| SAVONA                    | 7.81 North             |
| SIENA                     | 5.63 Center            |
| SIRACUSA                  | 6.20 South             |
| SONDARIO                  | 6.16 North             |
| TARANTO                   | 5.50 South             |
| TERAMO                    | 4.31 Center            |
| TERNI                     | 6.25 Center            |
| TORINO                    | 5.29 North             |
| TRAPANI                   | 5.50 South             |
| TRENTO                    | 5.26 North             |
| TREVISO                   | 7.03 North             |
| TRIESTE                   | 7.83 North             |
| UDINE                     | 6.59 North             |
| VARESE                    | 8.00 North             |
| VENEZIA                   | 6.78 North             |
| VERBANO-CUSIO-OSSOLA      | 5.35 North             |
| VERCELLI                  | 5.68 North             |
| VERONA                    | 6.57 North             |
| VIBO VALENTIA             | 3.83 South             |
| VICENZA                   | 6.39 North             |
| VITERBO                   | 5.15 Center            |

*: COVID-19 doubling times were computed on a province by province basis from landmark dates.
**Supplemental online Table 4.** Doubling times of COVID-19 cases in Scandinavia by county *

| Sweden         | Doubling time | Norway                     | Doubling time |
|----------------|---------------|----------------------------|---------------|
| DALARNA        | 7.17          | AGDER                      | 13.06         |
| GAVLEBORG      | 8.25          | INNLANDET                  | 11.70         |
| HALLAND        | 12.00         | MOREOGROSDAL               | 13.61         |
| JONKOPING      | 7.91          | NORDLAND                   | 10.17         |
| OREBRO         | 6.86          | OSLO                       | 11.64         |
| OSTERGOTLAND   | 8.70          | ROGALAND                   | 17.29         |
| SKANE          | 23.92         | TROMSOGF                   | 11.98         |
| SODERMANLAND   | 8.62          | TRONDELAG                  | 12.96         |
| STOCKHOLM      | 9.64          | VESTFOLDOGT                | 12.86         |
| UPPSALA        | 8.19          | VESTLAND                   | 14.27         |
| VASTERBOTTEN   | 6.79          | VIKE                       | 12.88         |
| VASTMANDLAND   | 6.13          |                            |               |
| VASTRAGOTALAND | 8.00          |                            |               |

*: Landmark dates were the 9th of April for Sweden and the 7th of April for Norway.
Supplemental online Table 5. COVID-19 cumulative incidence by calendar date in France.

| DATE       | TOTAL CASES |
|------------|-------------|
| 25/02/20   | 13          |
| 26/02/20   | 18          |
| 27/02/20   | 38          |
| 28/02/20   | 57          |
| 29/02/20   | 100         |
| 01/03/20   | 130         |
| 02/03/20   | 191         |
| 03/03/20   | 212         |
| 04/03/20   | 285         |
| 05/03/20   | 423         |
| 06/03/20   | 613         |
| 07/03/20   | 949         |
| 08/03/20   | 1126        |
| 09/03/20   | 1412        |
| 10/03/20   | 1784        |
| 11/03/20   | 2281        |
| 12/03/20   | 2876        |
| 13/03/20   | 3661        |
| 14/03/20   | 4499        |
| 15/03/20   | 5423        |
| 16/03/20   | 6633        |
| 17/03/20   | 7730        |
| 18/03/20   | 9134        |
| 19/03/20   | 10995       |
| 20/03/20   | 12612       |
| 21/03/20   | 14459       |
| 22/03/20   | 16689       |
| 23/03/20   | 19856       |
| 24/03/20   | 22302       |
| 25/03/20   | 25233       |
| 26/03/20   | 29155       |
| 27/03/20   | 32964       |
| 28/03/20   | 37575       |
| 29/03/20   | 40174       |
| 30/03/20   | 44550       |
| 31/03/20   | 52128       |
| 01/04/20   | 56989       |
| 02/04/20   | 59105       |
| 03/04/20   | 64338       |
| 04/04/20   | 68605       |
Supplemental online Table 6. COVID-19 cumulative incidence by calendar date in Germany.

| DATE     | TOTAL CASES |
|----------|-------------|
| 24/02/20 | 16          |
| 25/02/20 | 18          |
| 26/02/20 | 21          |
| 27/02/20 | 26          |
| 28/02/20 | 53          |
| 29/02/20 | 66          |
| 01/03/20 | 117         |
| 02/03/20 | 150         |
| 03/03/20 | 188         |
| 04/03/20 | 240         |
| 05/03/20 | 349         |
| 06/03/20 | 534         |
| 07/03/20 | 684         |
| 08/03/20 | 847         |
| 09/03/20 | 1112        |
| 10/03/20 | 1460        |
| 11/03/20 | 1884        |
| 12/03/20 | 2369        |
| 13/03/20 | 3062        |
| 14/03/20 | 3795        |
| 15/03/20 | 4838        |
| 16/03/20 | 6012        |
| 17/03/20 | 7156        |
| 18/03/20 | 8198        |
| 19/03/20 | 10999       |
| 20/03/20 | 13957       |
| 21/03/20 | 16662       |
| 22/03/20 | 18610       |
| 23/03/20 | 22672       |
| 24/03/20 | 27436       |
| 25/03/20 | 31554       |
| 26/03/20 | 36508       |
| 27/03/20 | 42288       |
| 28/03/20 | 48582       |
| 29/03/20 | 52547       |
| 30/03/20 | 57298       |
| 31/03/20 | 61913       |
| 01/04/20 | 67366       |
| 02/04/20 | 73522       |
Supplemental online Table 7. COVID-19 cumulative incidence by calendar date in UK.

| DATE    | TOTAL CASES |
|---------|-------------|
| 01/02/20 | 2           |
| 02/02/20 | 2           |
| 03/02/20 | 2           |
| 04/02/20 | 2           |
| 05/02/20 | 2           |
| 06/02/20 | 3           |
| 07/02/20 | 3           |
| 08/02/20 | 3           |
| 09/02/20 | 4           |
| 10/02/20 | 8           |
| 11/02/20 | 8           |
| 12/02/20 | 8           |
| 13/02/20 | 9           |
| 14/02/20 | 9           |
| 15/02/20 | 9           |
| 16/02/20 | 9           |
| 17/02/20 | 9           |
| 18/02/20 | 9           |
| 19/02/20 | 9           |
| 20/02/20 | 9           |
| 21/02/20 | 9           |
| 22/02/20 | 9           |
| 23/02/20 | 9           |
| 24/02/20 | 13          |
| 25/02/20 | 13          |
| 26/02/20 | 13          |
| 27/02/20 | 13          |
| 28/02/20 | 19          |
| 29/02/20 | 23          |
| 01/03/20 | 35          |
| 02/03/20 | 40          |
| 03/03/20 | 51          |
| 04/03/20 | 85          |
| 05/03/20 | 114         |
| 06/03/20 | 160         |
| 07/03/20 | 206         |
| 08/03/20 | 271         |
| 09/03/20 | 321         |
| 10/03/20 | 373         |
| 11/03/20 | 456         |
| 12/03/20 | 590         |
| 13/03/20 | 797         |
| 14/03/20 | 1061        |
| 15/03/20 | 1391        |
| 16/03/20 | 1543        |
| 17/03/20 | 1950        |
| 18/03/20 | 2626        |
| 19/03/20 | 3269        |
| 20/03/20 | 3983        |
| Date       | Number  |
|------------|---------|
| 21/03/20   | 5018    |
| 22/03/20   | 5683    |
| 23/03/20   | 6650    |
| 24/03/20   | 8077    |
| 25/03/20   | 9529    |
| 26/03/20   | 11658   |
| 27/03/20   | 14548   |
| 28/03/20   | 17104   |
| 29/03/20   | 19606   |
| 30/03/20   | 22271   |
| 31/03/20   | 25521   |
| 01/04/20   | 30088   |
| 02/04/20   | 34610   |
| 03/04/20   | 39282   |
| 04/04/20   | 43282   |
| 05/04/20   | 49481   |
| 06/04/20   | 53624   |
| 07/04/20   | 57512   |
| 08/04/20   | 63377   |
| 09/04/20   | 68052   |