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COVID-19 and the unequal surge in mortality rates in Massachusetts, by  
city/town and ZIP Code measures of poverty, household crowding,  
race/ethnicity, and racialized economic segregation

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The views expressed in this paper are those of the author(s) and do not necessarily reflect those of the Harvard Center for Population and Development Studies.

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## Abstract

Despite the paucity of adequate data on race/ethnicity – and no data on socioeconomic position – in US national data on COVID-19 mortality, both investigative journalism and some state and local health departments are beginning to document evidence of the greater mortality burden of COVID-19 on communities of color and low-income communities. To date, such documentation has been in relation to deaths categorized as due to COVID-19. However, in a context when assignment of cause of death to COVID-19 is dynamic and incomplete, given developing scientific evidence, one important strategy for assessing differential impacts of COVID-19 is that of evaluating the overall excess of deaths, as compared to the same time period in prior years. We employ this approach in this working paper and provide a transparent, easy-to-replicate methodology that relies on the reported data (i.e., no model-based estimates or complex modeling assumptions) and that can be readily used by any local or state health agency to monitor the social patterning of excess mortality rates during the COVID-19 pandemic. Key findings are that the surge in excess death rates, both relative and absolute, was evident starting in early April, and was greater in city/towns and ZCTAs with higher poverty, higher household crowding, higher percentage of populations of color, and higher racialized economic segregation. These data provide the backbone to a story that is being published in the Boston Globe, with this Working Paper released following publication of this story (on May 9, 2020), available at: <https://www.bostonglobe.com/2020/05/09/nation/disparities-push-coronavirus-death-rates-higher/>

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**ABSTRACT**

Despite the paucity of adequate data on race/ethnicity – and no data on socioeconomic position – in US national data on COVID-19 mortality, both investigative journalism and some state and local health departments are beginning to document evidence of the greater mortality burden of COVID-19 on communities of color and low-income communities. To date, such documentation has been in relation to deaths categorized as due to COVID-19. However, in a context when assignment of cause of death to COVID-19 is dynamic and incomplete, given developing scientific evidence, one important strategy for assessing differential impacts of COVID-19 is that of evaluating the overall excess of deaths, as compared to the same time period in prior years. We employ this approach in this working paper and provide a transparent, easy-to-replicate methodology that relies on the reported data (i.e., no model-based estimates or complex modeling assumptions) and that can be readily used by any local or state health agency to monitor the social patterning of excess mortality rates during the COVID-19 pandemic. Key findings are that the surge in excess death rates, both relative and absolute, was evident starting in early April, and was greater in city/towns and ZCTAs with higher poverty, higher household crowding, higher percentage of populations of color, and higher racialized economic segregation. These data provide the backbone to a story that is being published in the *Boston Globe*, with this Working Paper released following publication of this story (on May 9, 2020), available at: <https://www.bostonglobe.com/2020/05/09/nation/disparities-push-coronavirus-death-rates-higher/>

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**Author contributions:** NK and JTC conceptualized the study; NK led data acquisition and contributed to framing the study; JTC led analytic design, conducted the data analysis, and led drafting the methods; PDW contributed to generating the area-based socio-economic measures (ABSMS); all authors contributed to interpreting the results and approve the final version of this working paper.

## INTRODUCTION

Despite the paucity of adequate data on race/ethnicity – and no data on socioeconomic position – in US national data on COVID-19 mortality [1-7], both investigative journalism and some state and local health departments are beginning to document evidence of the greater mortality burden of COVID-19 on communities of color and low-income communities [3-6]. To date, such documentation has been in relation to deaths categorized as due to COVID-19. However, in a context when assignment of cause of death to COVID-19 is dynamic and incomplete, given developing scientific evidence, one important strategy for assessing differential impacts of COVID-19 is that of evaluating the overall excess of deaths, as compared to the same time period in prior years [8]. At issue is capturing not only deaths due to COVID-19 that have been misclassified but also other deaths attributable to the COVID-19 pandemic even if not directly caused by infection by the SARS-COV-2 virus (e.g., deaths due to domestic violence as people are mandated to stay-at-home).

We employ this approach in this working paper and provide a transparent, easy-to-replicate methodology that relies on the reported data (i.e., no model-based estimates or complex modeling assumptions) and that can be readily used by any local or state health agency to monitor the social patterning of excess mortality rates during the COVID-19 pandemic. We emphasize that we focus on excess deaths in relation to age-

standardized death rates, not counts of deaths, because the former provide a more accurate gauge of whether social group death rates differ above and beyond their age composition and also their pre-existing rates of mortality, both of which are themselves socially determined [9].

Finally, we note that we share the data in this Working Paper as a complement to the extensive story being published in the *Boston Globe* [10] – with the release of our Working Paper timed to occur after this story is published. The *Boston Globe* reporters both humanize and interpret the data we have generated in discussion with them, in a collaboration forged when one author (NK) reached out to them, on April 24, 2020, having read one of their prior stories about COVID-19 mortality in Massachusetts [11]. That discussion led to The *Boston Globe* sharing with our team the Massachusetts mortality data we have analyzed in this Working Paper. We refer the readers of this Working Paper to the *Boston Globe* article for discussion of our findings and their real-world significance [10].

Our next steps will be to refine the descriptive analyses we present here in two ways. The first is that we have been geocoding the records employed for this study to the census tract level, and we will use the census tract social indicators in our next iteration of this research project. Second, we will also employ more sophisticated statistical models.

## **METHODS**

### *Data Sources*

With the assistance of the *Boston Globe*, we obtained provisional records of all deaths for January 1-April 15 from the Massachusetts Vital Statistics Registry Fact of Death files for 2015-2020. These records included data on the age and sex/gender of the decedents, but not their race/ethnicity, education, or occupation, despite the latter three variables being standard components of death certificate data.

The total number of deaths for the specified time periods (Jan 1 – April 15) was 16,266 for 2020 and 75,842 for 2015-2019. We obtained population estimates by age and sex from the 2014-2018 American Community Survey (ACS) Table B01001. Data on area-based socioeconomic measures (ABSMs) were extracted from the ACS at the ZCTA and census tract (CT) level. To obtain city/town ABSM estimates, we aggregated CT level data to the city/town level for 291 city/towns. For a sixty Massachusetts city/towns, however, multiple towns are located within a single CT. For these towns, we aggregated towns within the same CT and assigned the resulting composite town the ABSMs of the CT (resulting in 21 composite towns). For all analyses, we similarly analyzed deaths and population at risk for the composite town entity (affecting 203 deaths in 2020; 823 deaths in 2015-2019).

*Area-based socioeconomic measures*

ZCTA and city/town ABSMs included: % of persons below poverty, % household crowding, and % population of color (defined as the proportion of population who are *not* White Non-Hispanic), and a measure of racialized economic segregation, using the Index of Concentration at the Extremes [12]. This measure captures the extent to which the population in a given area is concentrated at either extreme of a social metric and ranges from -1 (everyone in the worst category) to 1 (everyone in the best category). For our analyses, we set the extremes for this ICE as: (a) high-income White Non-Hispanic population, versus (b) low-income population of color (i.e. not white non-Hispanic) [12]. For analysis purposes, we defined categories of ABSMs using *a priori* cutpoints for % below poverty (0-4.9%, 5-9.9%, 10-14.9%, 15-19.9%, and 20-100%) and quintile cutpoints based on the distribution of ZCTA or city/town attributes in Massachusetts (weighted by population size). Definitions and source variables from the ACS are as follows:

| <b>Variable</b>                          | <b>Formula: Source Variables</b> |
|--|----------------------------------|
| <i>Population Counts</i>                 |                                  |
| Total population                         | B01003_001E                      |
| White Non-Hispanic Population            | B01001H_001E                     |
| <i>Area-based socioeconomic measures</i> |                                  |
| % of persons below poverty               | B17001_002E/B17001_001E          |

|  |   |
|--|---|
| Index of Concentration at the Extremes (high income white households versus low income black households) | $((B19001A\_014E + B19001A\_015E + B19001A\_016E + B19001A\_017E) - (B19001B\_002E + B19001B\_003E + B19001B\_004E + B19001B\_005E))/B19001\_001E,$ |
| % crowding (>1 person per room)  | $(B25014\_005E + B25014\_006E + B25014\_007E + B25014\_011E + B25014\_012E + B25014\_013E) / B25014\_001E$  |
| % population of color (not White Non-Hispanic)   | $B01003\_001E - B01001H\_001E)/B01003\_001E$  |

*Statistical Analyses*

Aggregated method. Using methods of the Public Health Disparities Geocoding Project, we linked death records to ZCTA or city/town socioeconomic characteristics by ZIP code of residence and city/town as recorded in the Fact of Death files. Note that not all postal ZIP codes have a corresponding ZCTA in the US Census files. There were 62 deaths (0.4% of total) from 2020 and 366 deaths (0.5% of total) from 2015-2019 that were unmatched for this reason. We aggregated deaths by ZCTA or city/town, age category, and gender, and linked them to stratified population estimates from the 2014-2018 American Community Survey and ZCTA or city/town ABSMs.

For 2020 and 2015-2019 data, we then computed all-cause age-standardized mortality rates overall and by categories of ABSMs for two-week periods beginning January 8 and ending April 14, using the year 2000 standard million age standard. To compare 2020 rates to average rates based on 2015-2019 data for the same periods, we calculated age-standardized rate differences and rate ratios. We computed 95% confidence limits for age-standardized rates, rate differences, and rate ratios using standard formulae [13].

**RESULTS:** see list of Tables & Figures, provided after the References.

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Table 1: Age standardized mortality rate per 100,000 person-years for 2015-2019 and 2020, by two week period, for total population and by sex; and crude mortality rate per 100,000 person-years by age category (0-64, 65-79, 80+), Massachusetts

| Period                  | Age-standardized mortality rate (2015-2019) |                 | Age-standardized mortality rate (2020) |                  | Age-standardized rate difference (2020 vs. 2019) |              | Age-standardized rate ratio (2020 vs. 2015-2019) |             |                      |
|-------------------------|---|-----------------|--|------------------|--|--------------|--|-------------|----------------------|
|                         |   | (95% CI)        |  | (95% CI)         |  | (95% CI)     |  | (95% CI)    |                      |
| <b>Total population</b> |   |                 |  |                  |  |              |  |             |                      |
| 01-08 to 01-21          | 657.5                                       | (564.9 , 750.2) | 637.2                                  | (545.8 , 728.5)  | -20.4  | -150.5       | 109.1  | 0.97        | (0.79 , 1.18)        |
| 01-22 to 02-04          | 646.1                                       | (554.3 , 737.9) | 626.5                                  | (535.4 , 717.5)  | -19.6  | -148.9       | 109.0  | 0.97        | (0.79 , 1.19)        |
| 02-05 to 02-18          | 651.0                                       | (558.7 , 743.3) | 643.2                                  | (551.4 , 735.0)  | -7.8   | -138.0       | 121.7  | 0.99        | (0.81 , 1.21)        |
| 02-19 to 03-03          | 574.1                                       | (488.0 , 660.2) | 579.9                                  | (495.1 , 664.6)  | 5.8  | -115.0       | 126.0  | 1.01        | (0.82 , 1.24)        |
| 03-04 to 03-17          | 607.8                                       | (518.6 , 696.9) | 625.8                                  | (535.3 , 716.3)  | 18.0   | -109.0       | 144.4  | 1.03        | (0.84 , 1.26)        |
| 03-18 to 03-31          | 599.8                                       | (511.2 , 688.5) | 653.6                                  | (560.5 , 746.7)  | 53.7   | -74.8        | 181.7  | 1.09        | (0.89 , 1.34)        |
| 04-01 to 04-14          | 609.1                                       | (519.5 , 698.7) | 919.5                                  | (810.2 , 1028.8) | <b>310.4</b>                                     | <b>169.1</b> | <b>451.0</b>                                     | <b>1.51</b> | <b>(1.25 , 1.82)</b> |
| <b>Sex</b>              |   |                 |  |                  |  |              |  |             |                      |
| <b>female</b>           |   |                 |  |                  |  |              |  |             |                      |
| 01-08 to 01-21          | 550.8                                       | (440.6 , 660.9) | 535.6                                  | (425.7 , 645.5)  | -15.2  | -170.8       | 139.7  | 0.97        | (0.73 , 1.29)        |
| 01-22 to 02-04          | 549.0                                       | (438.7 , 659.4) | 501.5                                  | (395.2 , 607.7)  | -47.6  | -200.7       | 104.9  | 0.91        | (0.68 , 1.22)        |
| 02-05 to 02-18          | 547.3                                       | (436.9 , 657.7) | 528.2                                  | (419.8 , 636.7)  | -19.0  | -173.8       | 135.0  | 0.97        | (0.72 , 1.29)        |
| 02-19 to 03-03          | 479.6                                       | (377.4 , 581.7) | 464.3                                  | (366.0 , 562.6)  | -15.2  | -157.0       | 125.8  | 0.97        | (0.72 , 1.31)        |
| 03-04 to 03-17          | 503.4                                       | (397.6 , 609.1) | 548.9                                  | (438.6 , 659.3)  | 45.6   | -107.3       | 197.7  | 1.09        | (0.82 , 1.46)        |
| 03-18 to 03-31          | 504.3                                       | (398.2 , 610.5) | 549.6                                  | (438.6 , 660.7)  | 45.3   | -108.3       | 198.2  | 1.09        | (0.81 , 1.46)        |
| 04-01 to 04-14          | 501.1                                       | (395.0 , 607.1) | 742.3                                  | (615.3 , 869.2)  | <b>241.2</b>                                     | <b>75.7</b>  | <b>405.8</b>                                     | <b>1.48</b> | <b>(1.13 , 1.94)</b> |
| <b>male</b>             |   |                 |  |                  |  |              |  |             |                      |
| 01-08 to 01-21          | 776.3                                       | (618.5 , 934.1) | 752.6                                  | (597.9 , 907.3)  | -23.7  | -244.7       | 196.2  | 0.97        | (0.73 , 1.29)        |
| 01-22 to 02-04          | 753.8                                       | (598.5 , 909.0) | 776.6                                  | (618.3 , 934.9)  | 22.8   | -198.9       | 243.4  | 1.03        | (0.77 , 1.37)        |
| 02-05 to 02-18          | 769.4                                       | (612.3 , 926.4) | 770.6                                  | (613.7 , 927.5)  | 1.3  | -220.8       | 222.1  | 1.00        | (0.75 , 1.33)        |
| 02-19 to 03-03          | 676.7                                       | (530.3 , 823.1) | 712.5                                  | (565.8 , 859.3)  | 35.8   | -171.4       | 242.0  | 1.05        | (0.78 , 1.42)        |
| 03-04 to 03-17          | 731.2                                       | (578.2 , 884.3) | 693.3                                  | (544.8 , 841.8)  | -37.9  | -251.2       | 174.2  | 0.95        | (0.70 , 1.28)        |
| 03-18 to 03-31          | 705.7                                       | (555.4 , 856.0) | 764.4                                  | (607.2 , 921.6)  | 58.7   | -158.8       | 275.1  | 1.08        | (0.81 , 1.45)        |
| 04-01 to 04-14          | 734.5                                       | (580.9 , 888.0) | 1139.9                                 | (947.6 , 1332.3) | <b>405.5</b>                                     | <b>159.3</b> | <b>650.3</b>                                     | <b>1.55</b> | <b>(1.19 , 2.03)</b> |

Age\*

|          |                |         |                    |         |                     |        |         |        |      |               |
|----------|----------------|---------|--------------------|---------|---------------------|--------|---------|--------|------|---------------|
| Age0-64  | 01-08 to 01-21 | 197.5   | (178.9 , 216.0)    | 186.9   | (168.8 , 204.9)     | -10.6  | -36.5   | 15.1   | 0.95 | (0.83 , 1.08) |
|          | 01-22 to 02-04 | 196.4   | (177.9 , 214.9)    | 193.2   | (174.9 , 211.6)     | -3.2   | -29.2   | 22.7   | 0.98 | (0.86 , 1.12) |
|          | 02-05 to 02-18 | 195.2   | (176.8 , 213.7)    | 191.9   | (173.6 , 210.1)     | -3.4   | -29.3   | 22.5   | 0.98 | (0.86 , 1.12) |
|          | 02-19 to 03-03 | 172.6   | (155.4 , 189.8)    | 164.7   | (148.3 , 181.0)     | -7.9   | -31.7   | 15.7   | 0.95 | (0.83 , 1.10) |
|          | 03-04 to 03-17 | 187.5   | (169.4 , 205.6)    | 188.2   | (170.1 , 206.3)     | 0.7    | -24.9   | 26.2   | 1.00 | (0.88 , 1.15) |
|          | 03-18 to 03-31 | 194.9   | (176.4 , 213.3)    | 195.0   | (176.6 , 213.5)     | 0.2    | -25.9   | 26.1   | 1.00 | (0.88 , 1.14) |
|          | 04-01 to 04-14 | 196.6   | (178.1 , 215.1)    | 213.2   | (193.9 , 232.5)     | 16.6   | -10.1   | 43.2   | 1.08 | (0.95 , 1.23) |
| Age65-79 | 01-08 to 01-21 | 1693.1  | (1546.5 , 1839.7)  | 1652.8  | (1507.9 , 1797.6)   | -40.3  | -246.5  | 164.7  | 0.98 | (0.86 , 1.10) |
|          | 01-22 to 02-04 | 1601.2  | (1458.6 , 1743.8)  | 1699.1  | (1552.2 , 1845.9)   | 97.8   | -106.9  | 301.5  | 1.06 | (0.94 , 1.20) |
|          | 02-05 to 02-18 | 1691.1  | (1544.6 , 1837.7)  | 1814.7  | (1662.9 , 1966.6)   | 123.6  | -87.4   | 333.5  | 1.07 | (0.95 , 1.21) |
|          | 02-19 to 03-03 | 1471.1  | (1335.4 , 1606.8)  | 1721.5  | (1578.7 , 1864.4)   | 250.4  | 53.4    | 446.4  | 1.17 | (1.03 , 1.32) |
|          | 03-04 to 03-17 | 1593.9  | (1451.7 , 1736.2)  | 1751.9  | (1602.8 , 1901.1)   | 158.0  | -48.1   | 363.1  | 1.10 | (0.97 , 1.24) |
|          | 03-18 to 03-31 | 1505.3  | (1367.1 , 1643.6)  | 1851.1  | (1697.8 , 2004.4)   | 345.8  | 139.3   | 551.2  | 1.23 | (1.09 , 1.39) |
|          | 04-01 to 04-14 | 1603.9  | (1461.1 , 1746.6)  | 2637.8  | (2454.8 , 2820.9)   | 1034.0 | 801.9   | 1264.9 | 1.64 | (1.47 , 1.84) |
| Age80+   | 01-08 to 01-21 | 10319.5 | (9721.3 , 10917.8) | 10039.7 | (9449.6 , 10629.7)  | -279.9 | -1120.2 | 556.1  | 0.97 | (0.90 , 1.06) |
|          | 01-22 to 02-04 | 10310.5 | (9712.5 , 10908.5) | 9317.4  | (8748.9 , 9885.8)   | -993.1 | -1818.2 | -172.3 | 0.90 | (0.83 , 0.98) |
|          | 02-05 to 02-18 | 10180.5 | (9586.3 , 10774.7) | 9516.0  | (8941.5 , 10090.5)  | -664.5 | -1491.0 | 157.8  | 0.93 | (0.86 , 1.02) |
|          | 02-19 to 03-03 | 8986.8  | (8432.4 , 9541.1)  | 8435.0  | (7912.4 , 8957.5)   | -551.8 | -1313.6 | 206.2  | 0.94 | (0.86 , 1.02) |
|          | 03-04 to 03-17 | 9404.0  | (8832.9 , 9975.2)  | 9443.8  | (8871.5 , 10016.1)  | 39.7   | -768.8  | 844.1  | 1.00 | (0.92 , 1.09) |
|          | 03-18 to 03-31 | 9237.9  | (8671.9 , 9804.0)  | 9633.4  | (9055.3 , 10211.4)  | 395.4  | -413.6  | 1200.3 | 1.04 | (0.96 , 1.14) |
|          | 04-01 to 04-14 | 9107.9  | (8545.9 , 9670.0)  | 15068.5 | (14345.6 , 15791.4) | 5960.6 | 5044.9  | 6871.6 | 1.65 | (1.53 , 1.79) |

\* not age-standardized

Statistically significant excess mortality labelled in red.

Table 2: Age standardized mortality rate per 100,000 person-years for 2015-2019 and 2020, by two week period and ZCTA ABSM, with age-standardied rate differences and rate ratios and 95% confidence limits comparing 2020 period to 2015-2019 period, Massachusetts

| ZCTA ABSM category | Two-week period | Age-standardized mortality rate (2015-2019) (95% CI) |                  | Age-standardized mortality rate (2020) (95% CI) |                  | Age-standardized rate difference (2020 vs. 2015-2019) (95% CI) |                       | Age-standardized rate ratio (2020 vs. 2015-2019) (95% CI) |                      |
|--------------------|-----------------|--|------------------|---|------------------|--|-----------------------|---|----------------------|
| % below poverty    |                 |  |                  |   |                  |  |                       |   |                      |
| 0-4.9%             | 01-08 to 01-21  | 588.0  | (427.8 , 748.2)  | 554.0   | (398.8 , 709.2)  | -34.0  | -(257.0 , 187.9)      | 0.94  | (0.64 , 1.39)        |
| 0-4.9%             | 01-22 to 02-04  | 563.9  | (407.3 , 720.5)  | 539.3   | (385.7 , 692.9)  | -24.6  | -(243.9 , 193.6)      | 0.96  | (0.64 , 1.42)        |
| 0-4.9%             | 02-05 to 02-18  | 570.5  | (413.0 , 727.9)  | 592.9   | (432.7 , 753.1)  | 22.4   | -(202.2 , 245.9)      | 1.04  | (0.71 , 1.53)        |
| 0-4.9%             | 02-19 to 03-03  | 514.9  | (365.8 , 664.0)  | 537.3   | (384.8 , 689.8)  | 22.5   | -(190.8 , 234.6)      | 1.04  | (0.70 , 1.56)        |
| 0-4.9%             | 03-04 to 03-17  | 539.7  | (386.6 , 692.7)  | 586.1   | (427.6 , 744.6)  | 46.4   | -(173.9 , 265.6)      | 1.09  | (0.73 , 1.60)        |
| 0-4.9%             | 03-18 to 03-31  | 506.8  | (357.9 , 655.6)  | 565.7   | (408.6 , 722.9)  | 59.0   | -(157.4 , 274.3)      | 1.12  | (0.75 , 1.67)        |
| 0-4.9%             | 04-01 to 04-14  | 537.1  | (383.4 , 690.7)  | 801.6   | (616.8 , 986.4)  | <b>264.6</b>   | <b>(24.2 , 503.7)</b> | <b>1.49</b>   | <b>(1.03 , 2.15)</b> |
| 5-9.9%             | 01-08 to 01-21  | 642.5  | (481.6 , 803.5)  | 658.8   | (496.0 , 821.7)  | 16.3   | -(212.6 , 244.1)      | 1.03  | (0.72 , 1.46)        |
| 5-9.9%             | 01-22 to 02-04  | 618.6  | (461.3 , 775.9)  | 628.8   | (467.7 , 789.9)  | 10.1   | -(215.0 , 234.1)      | 1.02  | (0.71 , 1.46)        |
| 5-9.9%             | 02-05 to 02-18  | 623.4  | (464.6 , 782.3)  | 589.2   | (436.7 , 741.7)  | -34.2  | -(254.5 , 184.9)      | 0.95  | (0.66 , 1.36)        |
| 5-9.9%             | 02-19 to 03-03  | 559.9  | (410.3 , 709.5)  | 567.2   | (415.9 , 718.6)  | 7.3  | -(205.5 , 219.0)      | 1.01  | (0.69 , 1.47)        |
| 5-9.9%             | 03-04 to 03-17  | 584.2  | (430.4 , 737.9)  | 598.6   | (443.2 , 754.1)  | 14.4   | -(204.2 , 231.9)      | 1.02  | (0.71 , 1.48)        |
| 5-9.9%             | 03-18 to 03-31  | 592.6  | (438.2 , 747.0)  | 625.9   | (467.3 , 784.4)  | 33.3   | -(188.1 , 253.4)      | 1.06  | (0.73 , 1.52)        |
| 5-9.9%             | 04-01 to 04-14  | 582.0  | (427.8 , 736.2)  | 915.4   | (723.6 , 1107.2) | <b>333.4</b>   | <b>(87.3 , 578.2)</b> | <b>1.57</b>   | <b>(1.12 , 2.20)</b> |
| 10-19.9%           | 01-08 to 01-21  | 687.9  | (505.2 , 870.5)  | 627.6   | (452.8 , 802.3)  | -60.3  | -(313.1 , 191.2)      | 0.91  | (0.62 , 1.34)        |
| 10-19.9%           | 01-22 to 02-04  | 696.3  | (512.4 , 880.2)  | 660.4   | (480.9 , 839.8)  | -36.0  | -(293.0 , 219.7)      | 0.95  | (0.65 , 1.38)        |
| 10-19.9%           | 02-05 to 02-18  | 693.7  | (510.1 , 877.2)  | 678.4   | (495.2 , 861.6)  | -15.3  | -(274.6 , 242.7)      | 0.98  | (0.67 , 1.42)        |
| 10-19.9%           | 02-19 to 03-03  | 616.7  | (443.0 , 790.5)  | 687.0   | (502.0 , 872.1)  | 70.3   | -(183.5 , 322.8)      | 1.11  | (0.75 , 1.64)        |
| 10-19.9%           | 03-04 to 03-17  | 639.0  | (462.8 , 815.2)  | 647.0   | (469.0 , 824.9)  | 8.0  | -(242.4 , 257.1)      | 1.01  | (0.69 , 1.49)        |
| 10-19.9%           | 03-18 to 03-31  | 627.0  | (452.3 , 801.7)  | 722.6   | (533.9 , 911.3)  | 95.6   | -(161.5 , 351.5)      | 1.15  | (0.79 , 1.69)        |
| 10-19.9%           | 04-01 to 04-14  | 647.3  | (469.2 , 825.4)  | 955.1   | (740.2 , 1170.1) | <b>307.8</b>   | <b>(28.7 , 585.6)</b> | <b>1.48</b>   | <b>(1.03 , 2.10)</b> |
| 20-100%            | 01-08 to 01-21  | 718.8  | (416.3 , 1021.3) | 753.5   | (440.2 , 1066.7) | 34.7   | -(400.8 , 467.9)      | 1.05  | (0.58 , 1.89)        |
| 20-100%            | 01-22 to 02-04  | 731.2  | (425.9 , 1036.6) | 707.6   | (405.2 , 1009.9) | -23.6  | -(453.3 , 403.9)      | 0.97  | (0.53 , 1.75)        |
| 20-100%            | 02-05 to 02-18  | 750.0  | (439.9 , 1060.1) | 745.5   | (436.3 , 1054.7) | -4.5   | -(442.4 , 431.2)      | 0.99  | (0.55 , 1.78)        |
| 20-100%            | 02-19 to 03-03  | 644.1  | (356.8 , 931.5)  | 758.6   | (444.9 , 1072.3) | 114.5  | -(310.9 , 537.8)      | 1.18  | (0.64 , 2.16)        |

|                  |                |       |                  |        |                  |       |                  |      |               |
|------------------|----------------|-------|------------------|--------|------------------|-------|------------------|------|---------------|
| 20-100%          | 03-04 to 03-17 | 699.9 | (401.0 , 998.9)  | 672.2  | (380.0 , 964.4)  | -27.7 | -(445.7 , 388.2) | 0.96 | (0.52 , 1.76) |
| 20-100%          | 03-18 to 03-31 | 712.9 | (410.6 , 1015.1) | 696.1  | (392.0 , 1000.1) | -16.8 | -(445.5 , 409.7) | 0.98 | (0.53 , 1.79) |
| 20-100%          | 04-01 to 04-14 | 707.8 | (406.7 , 1008.8) | 1070.0 | (701.3 , 1438.8) | 362.3 | -(113.7 , 835.9) | 1.51 | (0.87 , 2.61) |
| <hr/>            |                |       |                  |        |                  |       |                  |      |               |
| % crowding       |                |       |                  |        |                  |       |                  |      |               |
| (0,0.00625]      | 01-08 to 01-21 | 592.1 | (370.0 , 814.1)  | 543.6  | (333.3 , 753.9)  | -48.5 | -(354.3 , 255.8) | 0.92 | (0.54 , 1.57) |
| (0,0.00625]      | 01-22 to 02-04 | 578.3 | (358.7 , 797.8)  | 563.1  | (343.9 , 782.4)  | -15.1 | -(325.4 , 293.6) | 0.97 | (0.57 , 1.67) |
| (0,0.00625]      | 02-05 to 02-18 | 565.4 | (350.2 , 780.6)  | 583.1  | (365.0 , 801.3)  | 17.7  | -(288.7 , 322.6) | 1.03 | (0.60 , 1.75) |
| (0,0.00625]      | 02-19 to 03-03 | 517.8 | (310.9 , 724.7)  | 543.4  | (331.8 , 755.0)  | 25.6  | -(270.3 , 320.0) | 1.05 | (0.60 , 1.83) |
| (0,0.00625]      | 03-04 to 03-17 | 530.8 | (319.7 , 741.9)  | 640.1  | (410.8 , 869.5)  | 109.3 | -(202.4 , 419.5) | 1.21 | (0.71 , 2.05) |
| (0,0.00625]      | 03-18 to 03-31 | 514.3 | (308.0 , 720.6)  | 560.3  | (349.3 , 771.3)  | 46.0  | -(249.2 , 339.6) | 1.09 | (0.63 , 1.88) |
| (0,0.00625]      | 04-01 to 04-14 | 546.8 | (331.9 , 761.8)  | 830.2  | (570.9 , 1089.4) | 283.3 | -(53.4 , 618.4)  | 1.52 | (0.92 , 2.50) |
| (0.00625,0.0116] | 01-08 to 01-21 | 641.7 | (445.6 , 837.7)  | 626.4  | (432.3 , 820.5)  | -15.2 | -(291.1 , 259.2) | 0.98 | (0.63 , 1.51) |
| (0.00625,0.0116] | 01-22 to 02-04 | 603.7 | (413.9 , 793.5)  | 649.8  | (452.7 , 847.0)  | 46.1  | -(227.5 , 318.4) | 1.08 | (0.70 , 1.66) |
| (0.00625,0.0116] | 02-05 to 02-18 | 630.3 | (435.7 , 824.9)  | 600.4  | (411.8 , 788.9)  | -29.9 | -(300.9 , 239.6) | 0.95 | (0.61 , 1.48) |
| (0.00625,0.0116] | 02-19 to 03-03 | 578.5 | (391.9 , 765.0)  | 600.1  | (408.7 , 791.5)  | 21.6  | -(245.7 , 287.6) | 1.04 | (0.66 , 1.63) |
| (0.00625,0.0116] | 03-04 to 03-17 | 594.9 | (405.3 , 784.6)  | 588.9  | (400.9 , 777.0)  | -6.0  | -(273.1 , 259.7) | 0.99 | (0.63 , 1.55) |
| (0.00625,0.0116] | 03-18 to 03-31 | 567.2 | (382.0 , 752.3)  | 641.1  | (442.0 , 840.3)  | 74.0  | -(197.9 , 344.5) | 1.13 | (0.72 , 1.77) |
| (0.00625,0.0116] | 04-01 to 04-14 | 600.8 | (409.0 , 792.7)  | 815.1  | (594.8 , 1035.5) | 214.3 | -(77.8 , 505.0)  | 1.36 | (0.89 , 2.06) |
| (0.0116,0.0189]  | 01-08 to 01-21 | 636.9 | (438.0 , 835.9)  | 612.8  | (417.1 , 808.5)  | -24.1 | -(303.2 , 253.5) | 0.96 | (0.62 , 1.50) |
| (0.0116,0.0189]  | 01-22 to 02-04 | 625.6 | (428.1 , 823.1)  | 575.4  | (383.0 , 767.8)  | -50.2 | -(326.0 , 224.1) | 0.92 | (0.58 , 1.45) |
| (0.0116,0.0189]  | 02-05 to 02-18 | 636.7 | (436.5 , 836.9)  | 610.2  | (414.1 , 806.3)  | -26.5 | -(306.7 , 252.3) | 0.96 | (0.61 , 1.50) |
| (0.0116,0.0189]  | 02-19 to 03-03 | 570.0 | (381.0 , 758.9)  | 589.1  | (396.4 , 781.7)  | 19.1  | -(250.8 , 287.6) | 1.03 | (0.65 , 1.64) |
| (0.0116,0.0189]  | 03-04 to 03-17 | 568.6 | (380.2 , 757.1)  | 642.7  | (442.0 , 843.4)  | 74.0  | -(201.3 , 347.9) | 1.13 | (0.72 , 1.78) |
| (0.0116,0.0189]  | 03-18 to 03-31 | 607.3 | (411.4 , 803.2)  | 618.4  | (422.1 , 814.6)  | 11.1  | -(266.3 , 287.0) | 1.02 | (0.65 , 1.60) |
| (0.0116,0.0189]  | 04-01 to 04-14 | 584.4 | (392.4 , 776.5)  | 861.7  | (628.8 , 1094.6) | 277.3 | -(24.7 , 577.6)  | 1.47 | (0.96 , 2.25) |
| (0.0189,0.0309]  | 01-08 to 01-21 | 659.3 | (441.3 , 877.2)  | 638.1  | (423.5 , 852.8)  | -21.1 | -(327.0 , 283.2) | 0.97 | (0.60 , 1.55) |
| (0.0189,0.0309]  | 01-22 to 02-04 | 667.8 | (449.5 , 886.1)  | 610.3  | (398.3 , 822.3)  | -57.5 | -(361.8 , 245.2) | 0.91 | (0.57 , 1.47) |
| (0.0189,0.0309]  | 02-05 to 02-18 | 638.2 | (423.6 , 852.8)  | 646.1  | (430.5 , 861.7)  | 7.9   | -(296.3 , 310.5) | 1.01 | (0.63 , 1.62) |
| (0.0189,0.0309]  | 02-19 to 03-03 | 571.5 | (369.9 , 773.0)  | 612.7  | (400.7 , 824.6)  | 41.2  | -(251.3 , 332.2) | 1.07 | (0.65 , 1.75) |
| (0.0189,0.0309]  | 03-04 to 03-17 | 610.4 | (401.1 , 819.6)  | 593.4  | (386.7 , 800.0)  | -17.0 | -(311.1 , 275.6) | 0.97 | (0.60 , 1.58) |
| (0.0189,0.0309]  | 03-18 to 03-31 | 607.7 | (399.5 , 815.9)  | 664.2  | (443.1 , 885.3)  | 56.5  | -(247.2 , 358.7) | 1.09 | (0.68 , 1.76) |
| (0.0189,0.0309]  | 04-01 to 04-14 | 600.9 | (392.5 , 809.2)  | 946.6  | (686.1 , 1207.0) | 345.7 | (12.1 , 677.6)   | 1.58 | (1.01 , 2.45) |



|                |                |       |                 |        |                  |       |                  |      |               |
|----------------|----------------|-------|-----------------|--------|------------------|-------|------------------|------|---------------|
| (0.0309,0.454] | 01-08 to 01-21 | 703.3 | (467.1 , 939.4) | 650.2  | (422.0 , 878.4)  | -53.1 | -(381.5 , 273.6) | 0.92 | (0.57 , 1.50) |
| (0.0309,0.454] | 01-22 to 02-04 | 718.0 | (479.0 , 956.9) | 713.6  | (475.7 , 951.6)  | -4.3  | -(341.6 , 331.2) | 0.99 | (0.62 , 1.59) |
| (0.0309,0.454] | 02-05 to 02-18 | 737.0 | (494.8 , 979.2) | 709.3  | (471.7 , 946.8)  | -27.8 | -(367.0 , 309.7) | 0.96 | (0.60 , 1.53) |
| (0.0309,0.454] | 02-19 to 03-03 | 627.8 | (404.2 , 851.3) | 744.7  | (499.6 , 989.8)  | 116.9 | -(214.8 , 447.0) | 1.19 | (0.73 , 1.92) |
| (0.0309,0.454] | 03-04 to 03-17 | 675.5 | (444.5 , 906.4) | 654.1  | (426.5 , 881.7)  | -21.4 | -(345.7 , 301.2) | 0.97 | (0.59 , 1.57) |
| (0.0309,0.454] | 03-18 to 03-31 | 663.6 | (434.0 , 893.2) | 738.9  | (493.4 , 984.4)  | 75.3  | -(260.9 , 409.7) | 1.11 | (0.69 , 1.79) |
| (0.0309,0.454] | 04-01 to 04-14 | 675.1 | (442.9 , 907.3) | 1173.6 | (868.0 , 1479.2) | 498.5 | (114.7 , 880.4)  | 1.74 | (1.13 , 2.67) |

Index of Concentration at the Extremes (high income white non-Hispanic vs. low income people of color)

|                 |                |       |                 |        |                  |       |                  |      |               |
|-----------------|----------------|-------|-----------------|--------|------------------|-------|------------------|------|---------------|
| (-0.531,0.0648] | 01-08 to 01-21 | 732.4 | (480.4 , 984.5) | 709.2  | (458.9 , 959.5)  | -23.2 | -(378.4 , 330.1) | 0.97 | (0.59 , 1.58) |
| (-0.531,0.0648] | 01-22 to 02-04 | 720.8 | (471.0 , 970.6) | 707.1  | (459.0 , 955.3)  | -13.7 | -(365.8 , 336.6) | 0.98 | (0.60 , 1.60) |
| (-0.531,0.0648] | 02-05 to 02-18 | 741.3 | (487.5 , 995.1) | 736.0  | (484.9 , 987.1)  | -5.3  | -(362.3 , 349.9) | 0.99 | (0.61 , 1.61) |
| (-0.531,0.0648] | 02-19 to 03-03 | 647.3 | (410.0 , 884.5) | 807.7  | (540.0 , 1075.5) | 160.5 | -(197.2 , 516.4) | 1.25 | (0.76 , 2.04) |
| (-0.531,0.0648] | 03-04 to 03-17 | 686.3 | (443.1 , 929.4) | 658.9  | (421.5 , 896.4)  | -27.3 | -(367.2 , 310.8) | 0.96 | (0.58 , 1.59) |
| (-0.531,0.0648] | 03-18 to 03-31 | 704.8 | (457.3 , 952.4) | 698.4  | (448.8 , 948.0)  | -6.4  | -(357.9 , 343.3) | 0.99 | (0.60 , 1.63) |
| (-0.531,0.0648] | 04-01 to 04-14 | 690.8 | (445.6 , 936.0) | 1144.1 | (829.0 , 1459.2) | 453.3 | (54.0 , 850.5)   | 1.66 | (1.06 , 2.59) |
| (0.0648,0.265]  | 01-08 to 01-21 | 692.4 | (484.7 , 900.2) | 661.7  | (457.7 , 865.7)  | -30.7 | -(321.9 , 258.9) | 0.96 | (0.62 , 1.47) |
| (0.0648,0.265]  | 01-22 to 02-04 | 717.8 | (506.0 , 929.6) | 682.1  | (474.6 , 889.6)  | -35.7 | -(332.2 , 259.3) | 0.95 | (0.62 , 1.45) |
| (0.0648,0.265]  | 02-05 to 02-18 | 698.8 | (490.1 , 907.6) | 694.8  | (484.0 , 905.5)  | -4.1  | -(300.7 , 291.0) | 0.99 | (0.65 , 1.52) |
| (0.0648,0.265]  | 02-19 to 03-03 | 653.6 | (451.0 , 856.1) | 649.5  | (446.2 , 852.8)  | -4.1  | -(291.1 , 281.4) | 0.99 | (0.64 , 1.54) |
| (0.0648,0.265]  | 03-04 to 03-17 | 666.6 | (462.1 , 871.0) | 691.3  | (481.6 , 901.0)  | 24.7  | -(268.1 , 316.1) | 1.04 | (0.67 , 1.59) |
| (0.0648,0.265]  | 03-18 to 03-31 | 649.0 | (446.6 , 851.4) | 791.8  | (567.3 , 1016.4) | 142.8 | -(159.5 , 443.6) | 1.22 | (0.80 , 1.86) |
| (0.0648,0.265]  | 04-01 to 04-14 | 674.0 | (467.3 , 880.6) | 918.1  | (678.8 , 1157.4) | 244.1 | -(72.1 , 558.7)  | 1.36 | (0.91 , 2.03) |
| (0.265,0.369]   | 01-08 to 01-21 | 646.8 | (451.2 , 842.4) | 641.3  | (445.0 , 837.6)  | -5.5  | -(282.6 , 270.2) | 0.99 | (0.64 , 1.52) |
| (0.265,0.369]   | 01-22 to 02-04 | 629.6 | (435.7 , 823.5) | 611.5  | (419.1 , 803.9)  | -18.1 | -(291.3 , 253.6) | 0.97 | (0.63 , 1.50) |
| (0.265,0.369]   | 02-05 to 02-18 | 641.6 | (446.9 , 836.3) | 605.3  | (416.3 , 794.4)  | -36.2 | -(307.6 , 233.8) | 0.94 | (0.61 , 1.46) |
| (0.265,0.369]   | 02-19 to 03-03 | 547.7 | (367.2 , 728.1) | 553.0  | (371.1 , 734.8)  | 5.3   | -(250.9 , 260.2) | 1.01 | (0.63 , 1.60) |
| (0.265,0.369]   | 03-04 to 03-17 | 592.3 | (403.2 , 781.3) | 581.7  | (396.6 , 766.7)  | -10.6 | -(275.1 , 252.6) | 0.98 | (0.63 , 1.54) |
| (0.265,0.369]   | 03-18 to 03-31 | 592.5 | (406.2 , 778.7) | 583.3  | (396.7 , 769.9)  | -9.2  | -(272.8 , 253.1) | 0.98 | (0.63 , 1.54) |
| (0.265,0.369]   | 04-01 to 04-14 | 587.6 | (398.9 , 776.3) | 835.1  | (610.9 , 1059.2) | 247.4 | -(45.5 , 538.9)  | 1.42 | (0.94 , 2.16) |
| (0.369,0.46]    | 01-08 to 01-21 | 593.8 | (403.3 , 784.4) | 597.1  | (407.8 , 786.5)  | 3.3   | -(265.3 , 270.6) | 1.01 | (0.64 , 1.58) |
| (0.369,0.46]    | 01-22 to 02-04 | 599.5 | (408.5 , 790.5) | 542.9  | (360.4 , 725.4)  | -56.6 | -(320.8 , 206.2) | 0.91 | (0.57 , 1.44) |
| (0.369,0.46]    | 02-05 to 02-18 | 580.1 | (391.2 , 769.0) | 582.1  | (393.9 , 770.3)  | 2.0   | -(264.6 , 267.3) | 1.00 | (0.63 , 1.58) |
| (0.369,0.46]    | 02-19 to 03-03 | 541.9 | (361.2 , 722.7) | 562.7  | (378.2 , 747.3)  | 20.8  | -(237.5 , 277.8) | 1.04 | (0.65 , 1.65) |

|              |                |       |                 |       |                  |       |                  |      |               |
|--------------|----------------|-------|-----------------|-------|------------------|-------|------------------|------|---------------|
| (0.369,0.46] | 03-04 to 03-17 | 550.4 | (366.9 , 734.0) | 593.3 | (404.8 , 781.8)  | 42.9  | -(220.2 , 304.6) | 1.08 | (0.68 , 1.70) |
| (0.369,0.46] | 03-18 to 03-31 | 529.5 | (349.6 , 709.4) | 627.5 | (433.2 , 821.9)  | 98.1  | -(166.8 , 361.6) | 1.19 | (0.75 , 1.87) |
| (0.369,0.46] | 04-01 to 04-14 | 561.6 | (376.4 , 746.8) | 914.1 | (680.0 , 1148.2) | 352.5 | (54.0 , 649.4)   | 1.63 | (1.07 , 2.47) |
| (0.46,1]     | 01-08 to 01-21 | 584.9 | (389.6 , 780.2) | 547.5 | (360.4 , 734.6)  | -37.4 | -(307.8 , 231.6) | 0.94 | (0.58 , 1.51) |
| (0.46,1]     | 01-22 to 02-04 | 523.8 | (340.3 , 707.4) | 570.9 | (377.2 , 764.7)  | 47.1  | -(219.8 , 312.6) | 1.09 | (0.67 , 1.77) |
| (0.46,1]     | 02-05 to 02-18 | 555.8 | (365.5 , 746.0) | 566.8 | (375.5 , 758.2)  | 11.1  | -(258.8 , 279.5) | 1.02 | (0.63 , 1.65) |
| (0.46,1]     | 02-19 to 03-03 | 475.4 | (300.9 , 650.0) | 524.6 | (341.3 , 707.8)  | 49.1  | -(203.9 , 300.9) | 1.10 | (0.66 , 1.83) |
| (0.46,1]     | 03-04 to 03-17 | 509.5 | (329.1 , 689.9) | 558.8 | (367.6 , 749.9)  | 49.3  | -(213.6 , 310.7) | 1.10 | (0.67 , 1.79) |
| (0.46,1]     | 03-18 to 03-31 | 491.8 | (312.9 , 670.8) | 516.8 | (332.7 , 700.9)  | 25.0  | -(231.8 , 280.4) | 1.05 | (0.63 , 1.74) |
| (0.46,1]     | 04-01 to 04-14 | 502.2 | (320.8 , 683.6) | 798.5 | (573.0 , 1023.9) | 296.3 | (6.9 , 584.2)    | 1.59 | (1.01 , 2.51) |

% black population

|                 |                |       |                 |       |                  |       |                  |      |               |
|-----------------|----------------|-------|-----------------|-------|------------------|-------|------------------|------|---------------|
| (0,0.0138]      | 01-08 to 01-21 | 622.3 | (420.0 , 824.7) | 568.2 | (377.3 , 759.0)  | -54.2 | -(332.4 , 222.6) | 0.91 | (0.57 , 1.45) |
| (0,0.0138]      | 01-22 to 02-04 | 569.3 | (375.9 , 762.8) | 568.9 | (375.8 , 762.0)  | -0.4  | -(273.8 , 271.5) | 1.00 | (0.62 , 1.61) |
| (0,0.0138]      | 02-05 to 02-18 | 590.3 | (392.3 , 788.4) | 624.1 | (420.7 , 827.5)  | 33.8  | -(250.1 , 316.2) | 1.06 | (0.66 , 1.68) |
| (0,0.0138]      | 02-19 to 03-03 | 523.5 | (338.4 , 708.6) | 539.7 | (352.3 , 727.0)  | 16.1  | -(247.2 , 278.2) | 1.03 | (0.63 , 1.69) |
| (0,0.0138]      | 03-04 to 03-17 | 540.7 | (351.4 , 730.0) | 612.8 | (411.7 , 814.0)  | 72.1  | -(204.1 , 346.9) | 1.13 | (0.70 , 1.83) |
| (0,0.0138]      | 03-18 to 03-31 | 522.8 | (336.1 , 709.6) | 595.1 | (394.9 , 795.4)  | 72.3  | -(201.5 , 344.7) | 1.14 | (0.70 , 1.85) |
| (0,0.0138]      | 04-01 to 04-14 | 556.9 | (363.5 , 750.3) | 766.2 | (543.6 , 988.8)  | 209.3 | -(85.6 , 502.7)  | 1.38 | (0.87 , 2.16) |
| (0.0138,0.0271] | 01-08 to 01-21 | 636.0 | (440.9 , 831.1) | 632.6 | (438.1 , 827.1)  | -3.4  | -(278.9 , 270.7) | 0.99 | (0.64 , 1.53) |
| (0.0138,0.0271] | 01-22 to 02-04 | 616.9 | (425.6 , 808.2) | 586.7 | (399.0 , 774.4)  | -30.2 | -(298.2 , 236.5) | 0.95 | (0.61 , 1.48) |
| (0.0138,0.0271] | 02-05 to 02-18 | 623.5 | (431.2 , 815.9) | 609.3 | (418.4 , 800.1)  | -14.3 | -(285.2 , 255.3) | 0.98 | (0.63 , 1.51) |
| (0.0138,0.0271] | 02-19 to 03-03 | 567.4 | (383.6 , 751.1) | 562.1 | (379.2 , 744.9)  | -5.3  | -(264.5 , 252.6) | 0.99 | (0.63 , 1.56) |
| (0.0138,0.0271] | 03-04 to 03-17 | 591.2 | (403.1 , 779.3) | 572.8 | (388.8 , 756.8)  | -18.4 | -(281.5 , 243.4) | 0.97 | (0.62 , 1.52) |
| (0.0138,0.0271] | 03-18 to 03-31 | 556.8 | (374.7 , 738.8) | 630.5 | (436.6 , 824.4)  | 73.7  | -(192.3 , 338.4) | 1.13 | (0.72 , 1.77) |
| (0.0138,0.0271] | 04-01 to 04-14 | 591.9 | (402.4 , 781.3) | 879.3 | (651.7 , 1106.9) | 287.4 | -(8.7 , 582.1)   | 1.49 | (0.98 , 2.24) |
| (0.0271,0.0476] | 01-08 to 01-21 | 656.1 | (449.7 , 862.6) | 614.0 | (412.0 , 816.0)  | -42.1 | -(330.9 , 245.3) | 0.94 | (0.59 , 1.47) |
| (0.0271,0.0476] | 01-22 to 02-04 | 660.3 | (452.7 , 867.9) | 679.8 | (465.4 , 894.3)  | 19.6  | -(278.9 , 316.5) | 1.03 | (0.66 , 1.60) |
| (0.0271,0.0476] | 02-05 to 02-18 | 620.6 | (419.0 , 822.3) | 644.0 | (439.7 , 848.2)  | 23.4  | -(263.7 , 308.9) | 1.04 | (0.66 , 1.63) |
| (0.0271,0.0476] | 02-19 to 03-03 | 571.7 | (378.7 , 764.7) | 662.2 | (450.3 , 874.1)  | 90.5  | -(196.1 , 375.6) | 1.16 | (0.73 , 1.84) |
| (0.0271,0.0476] | 03-04 to 03-17 | 588.3 | (393.3 , 783.3) | 666.9 | (458.2 , 875.5)  | 78.6  | -(207.1 , 362.7) | 1.13 | (0.72 , 1.78) |
| (0.0271,0.0476] | 03-18 to 03-31 | 607.3 | (407.9 , 806.7) | 606.9 | (407.7 , 806.1)  | -0.5  | -(282.3 , 279.9) | 1.00 | (0.63 , 1.59) |
| (0.0271,0.0476] | 04-01 to 04-14 | 596.6 | (399.2 , 794.1) | 959.7 | (709.3 , 1210.1) | 363.1 | (44.2 , 680.3)   | 1.61 | (1.06 , 2.45) |

|                 |                |       |                 |        |                  |       |                  |      |               |
|-----------------|----------------|-------|-----------------|--------|------------------|-------|------------------|------|---------------|
| (0.0476,0.0888] | 01-08 to 01-21 | 647.5 | (440.8 , 854.2) | 643.9  | (439.0 , 848.9)  | -3.6  | -(294.6 , 286.0) | 0.99 | (0.63 , 1.56) |
| (0.0476,0.0888] | 01-22 to 02-04 | 658.2 | (449.1 , 867.3) | 630.4  | (425.6 , 835.2)  | -27.8 | -(320.4 , 263.4) | 0.96 | (0.61 , 1.51) |
| (0.0476,0.0888] | 02-05 to 02-18 | 674.7 | (463.2 , 886.1) | 605.0  | (403.7 , 806.3)  | -69.7 | -(361.6 , 220.8) | 0.90 | (0.57 , 1.41) |
| (0.0476,0.0888] | 02-19 to 03-03 | 580.8 | (384.8 , 776.8) | 648.9  | (441.2 , 856.6)  | 68.1  | -(217.5 , 352.2) | 1.12 | (0.70 , 1.77) |
| (0.0476,0.0888] | 03-04 to 03-17 | 616.9 | (416.0 , 817.8) | 615.5  | (413.2 , 817.8)  | -1.4  | -(286.5 , 282.2) | 1.00 | (0.63 , 1.58) |
| (0.0476,0.0888] | 03-18 to 03-31 | 620.6 | (418.2 , 822.9) | 673.7  | (460.7 , 886.7)  | 53.1  | -(240.6 , 345.4) | 1.09 | (0.69 , 1.71) |
| (0.0476,0.0888] | 04-01 to 04-14 | 626.5 | (422.1 , 831.0) | 913.5  | (669.1 , 1157.9) | 287.0 | -(31.7 , 604.0)  | 1.46 | (0.96 , 2.22) |
| (0.0888,0.84]   | 01-08 to 01-21 | 690.7 | (454.3 , 927.1) | 682.5  | (445.6 , 919.5)  | -8.2  | -(342.9 , 324.8) | 0.99 | (0.61 , 1.61) |
| (0.0888,0.84]   | 01-22 to 02-04 | 697.5 | (460.4 , 934.6) | 638.7  | (409.8 , 867.5)  | -58.8 | -(388.4 , 269.0) | 0.92 | (0.56 , 1.50) |
| (0.0888,0.84]   | 02-05 to 02-18 | 705.1 | (466.0 , 944.1) | 678.8  | (444.9 , 912.7)  | -26.3 | -(360.8 , 306.4) | 0.96 | (0.59 , 1.56) |
| (0.0888,0.84]   | 02-19 to 03-03 | 629.8 | (403.0 , 856.7) | 677.3  | (439.9 , 914.7)  | 47.5  | -(280.9 , 374.2) | 1.08 | (0.65 , 1.77) |
| (0.0888,0.84]   | 03-04 to 03-17 | 658.6 | (427.7 , 889.6) | 619.7  | (397.4 , 842.0)  | -39.0 | -(359.5 , 279.9) | 0.94 | (0.57 , 1.55) |
| (0.0888,0.84]   | 03-18 to 03-31 | 657.9 | (427.2 , 888.6) | 745.6  | (496.9 , 994.3)  | 87.7  | -(251.5 , 425.2) | 1.13 | (0.70 , 1.83) |
| (0.0888,0.84]   | 04-01 to 04-14 | 638.7 | (410.3 , 867.1) | 1079.2 | (782.4 , 1375.9) | 440.5 | (66.0 , 813.1)   | 1.69 | (1.08 , 2.65) |

% population of color

|                |                |       |                 |       |                  |       |                  |      |               |
|----------------|----------------|-------|-----------------|-------|------------------|-------|------------------|------|---------------|
| (0,0.0912]     | 01-08 to 01-21 | 632.5 | (438.6 , 826.5) | 614.4 | (423.8 , 805.1)  | -18.1 | -(290.1 , 252.5) | 0.97 | (0.63 , 1.50) |
| (0,0.0912]     | 01-22 to 02-04 | 607.4 | (416.9 , 798.0) | 563.9 | (378.0 , 749.9)  | -43.5 | -(309.7 , 221.4) | 0.93 | (0.59 , 1.46) |
| (0,0.0912]     | 02-05 to 02-18 | 615.3 | (422.4 , 808.2) | 623.8 | (430.6 , 817.0)  | 8.5   | -(264.6 , 280.1) | 1.01 | (0.65 , 1.57) |
| (0,0.0912]     | 02-19 to 03-03 | 537.5 | (358.6 , 716.3) | 542.3 | (364.2 , 720.3)  | 4.8   | -(247.6 , 255.8) | 1.01 | (0.63 , 1.61) |
| (0,0.0912]     | 03-04 to 03-17 | 580.9 | (393.4 , 768.4) | 630.7 | (435.4 , 826.0)  | 49.8  | -(220.9 , 319.1) | 1.09 | (0.69 , 1.69) |
| (0,0.0912]     | 03-18 to 03-31 | 537.7 | (358.4 , 717.0) | 603.1 | (412.8 , 793.5)  | 65.5  | -(196.0 , 325.6) | 1.12 | (0.71 , 1.77) |
| (0,0.0912]     | 04-01 to 04-14 | 577.3 | (389.2 , 765.5) | 809.0 | (590.4 , 1027.7) | 231.7 | -(56.8 , 518.7)  | 1.40 | (0.92 , 2.14) |
| (0.0912,0.164] | 01-08 to 01-21 | 652.8 | (459.8 , 845.8) | 651.4 | (460.6 , 842.1)  | -1.4  | -(272.8 , 268.6) | 1.00 | (0.66 , 1.51) |
| (0.0912,0.164] | 01-22 to 02-04 | 625.5 | (438.2 , 812.8) | 648.0 | (454.1 , 841.9)  | 22.5  | -(247.1 , 290.7) | 1.04 | (0.68 , 1.58) |
| (0.0912,0.164] | 02-05 to 02-18 | 635.1 | (445.6 , 824.6) | 656.3 | (464.1 , 848.4)  | 21.2  | -(248.7 , 289.7) | 1.03 | (0.68 , 1.57) |
| (0.0912,0.164] | 02-19 to 03-03 | 573.4 | (393.4 , 753.4) | 619.1 | (430.4 , 807.8)  | 45.7  | -(215.1 , 305.1) | 1.08 | (0.70 , 1.67) |
| (0.0912,0.164] | 03-04 to 03-17 | 602.4 | (417.4 , 787.3) | 614.9 | (428.7 , 801.1)  | 12.6  | -(249.9 , 273.7) | 1.02 | (0.66 , 1.57) |
| (0.0912,0.164] | 03-18 to 03-31 | 586.1 | (402.8 , 769.4) | 636.5 | (447.5 , 825.6)  | 50.4  | -(212.9 , 312.4) | 1.09 | (0.71 , 1.67) |
| (0.0912,0.164] | 04-01 to 04-14 | 610.0 | (422.4 , 797.6) | 878.9 | (657.1 , 1100.8) | 268.9 | -(21.6 , 558.0)  | 1.44 | (0.97 , 2.14) |
| (0.164,0.27]   | 01-08 to 01-21 | 629.3 | (428.0 , 830.5) | 584.9 | (390.8 , 779.1)  | -44.3 | -(323.9 , 233.9) | 0.93 | (0.59 , 1.47) |
| (0.164,0.27]   | 01-22 to 02-04 | 616.0 | (417.0 , 815.0) | 609.7 | (410.5 , 808.9)  | -6.3  | -(287.9 , 273.9) | 0.99 | (0.63 , 1.56) |
| (0.164,0.27]   | 02-05 to 02-18 | 605.7 | (407.0 , 804.3) | 554.9 | (366.0 , 743.8)  | -50.8 | -(324.9 , 222.0) | 0.92 | (0.57 , 1.47) |
| (0.164,0.27]   | 02-19 to 03-03 | 561.9 | (371.7 , 752.2) | 597.5 | (400.8 , 794.3)  | 35.6  | -(238.1 , 307.9) | 1.06 | (0.66 , 1.70) |

|               |                |       |                 |        |                  |       |                  |      |               |
|---------------|----------------|-------|-----------------|--------|------------------|-------|------------------|------|---------------|
| (0.164,0.27]  | 03-04 to 03-17 | 558.4 | (369.1 , 747.8) | 577.5  | (384.0 , 770.9)  | 19.0  | -(251.6 , 288.4) | 1.03 | (0.64 , 1.66) |
| (0.164,0.27]  | 03-18 to 03-31 | 580.4 | (387.4 , 773.5) | 628.7  | (425.9 , 831.4)  | 48.2  | -(231.7 , 326.8) | 1.08 | (0.68 , 1.72) |
| (0.164,0.27]  | 04-01 to 04-14 | 571.6 | (379.1 , 764.1) | 887.8  | (648.3 , 1127.3) | 316.2 | (9.0 , 621.8)    | 1.55 | (1.01 , 2.39) |
| (0.27,0.434]  | 01-08 to 01-21 | 621.6 | (408.1 , 835.1) | 589.3  | (379.9 , 798.8)  | -32.3 | -(331.4 , 265.3) | 0.95 | (0.58 , 1.55) |
| (0.27,0.434]  | 01-22 to 02-04 | 625.3 | (409.9 , 840.7) | 588.3  | (379.6 , 797.1)  | -37.0 | -(337.0 , 261.4) | 0.94 | (0.57 , 1.54) |
| (0.27,0.434]  | 02-05 to 02-18 | 624.1 | (410.0 , 838.2) | 607.7  | (394.6 , 820.8)  | -16.4 | -(318.4 , 284.1) | 0.97 | (0.60 , 1.59) |
| (0.27,0.434]  | 02-19 to 03-03 | 557.9 | (354.8 , 761.1) | 589.1  | (378.1 , 800.0)  | 31.2  | -(261.7 , 322.5) | 1.06 | (0.63 , 1.75) |
| (0.27,0.434]  | 03-04 to 03-17 | 585.7 | (378.5 , 792.8) | 641.0  | (424.0 , 858.0)  | 55.3  | -(244.7 , 353.8) | 1.09 | (0.67 , 1.78) |
| (0.27,0.434]  | 03-18 to 03-31 | 584.7 | (376.6 , 792.9) | 620.4  | (406.7 , 834.0)  | 35.6  | -(262.6 , 332.4) | 1.06 | (0.65 , 1.74) |
| (0.27,0.434]  | 04-01 to 04-14 | 586.0 | (377.2 , 794.7) | 858.0  | (607.8 , 1108.3) | 272.1 | -(53.8 , 596.3)  | 1.46 | (0.92 , 2.31) |
| (0.434,0.971] | 01-08 to 01-21 | 695.6 | (459.5 , 931.8) | 686.6  | (450.6 , 922.6)  | -9.0  | -(342.9 , 323.1) | 0.99 | (0.61 , 1.60) |
| (0.434,0.971] | 01-22 to 02-04 | 715.6 | (476.0 , 955.2) | 682.6  | (448.3 , 917.0)  | -33.0 | -(368.1 , 300.5) | 0.95 | (0.59 , 1.54) |
| (0.434,0.971] | 02-05 to 02-18 | 736.6 | (493.3 , 980.0) | 712.5  | (473.7 , 951.3)  | -24.1 | -(365.1 , 315.1) | 0.97 | (0.60 , 1.54) |
| (0.434,0.971] | 02-19 to 03-03 | 630.6 | (405.3 , 855.8) | 723.7  | (480.4 , 967.0)  | 93.1  | -(238.5 , 423.0) | 1.15 | (0.70 , 1.87) |
| (0.434,0.971] | 03-04 to 03-17 | 663.8 | (433.9 , 893.8) | 618.1  | (396.1 , 840.1)  | -45.7 | -(365.4 , 272.2) | 0.93 | (0.57 , 1.53) |
| (0.434,0.971] | 03-18 to 03-31 | 669.1 | (437.5 , 900.8) | 730.6  | (484.2 , 977.1)  | 61.5  | -(276.8 , 398.0) | 1.09 | (0.67 , 1.77) |
| (0.434,0.971] | 04-01 to 04-14 | 663.9 | (432.1 , 895.7) | 1174.6 | (867.1 , 1482.1) | 510.7 | (125.6 , 893.9)  | 1.77 | (1.14 , 2.73) |

Statistically significant excess mortality labelled in red.

Table 3: Age standardized mortality rate per 100,000 person-years for 2015-2019 and 2020, by two week period and city/town ABSM with age--standardized rate differences and rate ratios and 95% confidence limits comparing 2020 period to 2015-2019 period, Massachusetts

| City/town ABSM  | Two-week perio | Age-<br>standardized<br>mortality rate<br>(2015-2019) |                 | Age-<br>standardized<br>mortality rate<br>(2020) |                  | Age-<br>standardized<br>rate difference<br>(2020 vs. 2015-<br>2019) |                       | Age-<br>standardized<br>rate ratio |                      |  |
|-----------------|----------------|---|-----------------|--|------------------|---|-----------------------|------------------------------------|----------------------|--|
|                 |                | (2015-2019)   | (95% CI)        | (2020)   | (95% CI)         | (2020 vs. 2015-<br>2019)  | (95% CI)              | rate ratio                         | (95% CI)             |  |
| % below poverty |                |   |                 |  |                  |   |                       |                                    |                      |  |
| 0-4.9%          | 01-08 to 01-21 | 580.0   | (416.8 , 743.2) | 536.1  | (379.6 , 692.6)  | -43.9   | -(270.0 , 181.0)      | 0.92                               | (0.62 , 1.38)        |  |
| 0-4.9%          | 01-22 to 02-04 | 551.7   | (392.9 , 710.5) | 536.5  | (379.4 , 693.5)  | -15.3   | -(238.6 , 206.9)      | 0.97                               | (0.64 , 1.46)        |  |
| 0-4.9%          | 02-05 to 02-18 | 565.7   | (404.8 , 726.6) | 581.2  | (418.7 , 743.6)  | 15.5  | -(213.2 , 243.0)      | 1.03                               | (0.69 , 1.53)        |  |
| 0-4.9%          | 02-19 to 03-03 | 499.9   | (350.3 , 649.4) | 502.0  | (355.8 , 648.2)  | 2.1   | -(207.0 , 210.2)      | 1.00                               | (0.66 , 1.52)        |  |
| 0-4.9%          | 03-04 to 03-17 | 528.3   | (373.2 , 683.5) | 587.0  | (424.4 , 749.5)  | 58.7  | -(166.1 , 282.2)      | 1.11                               | (0.74 , 1.66)        |  |
| 0-4.9%          | 03-18 to 03-31 | 502.2   | (350.1 , 654.2) | 553.5  | (394.6 , 712.4)  | 51.3  | -(168.6 , 270.1)      | 1.10                               | (0.73 , 1.67)        |  |
| 0-4.9%          | 04-01 to 04-14 | 531.9   | (375.4 , 688.4) | 801.7  | (612.1 , 991.4)  | <b>269.8</b>  | <b>(24.0 , 514.5)</b> | <b>1.51</b>                        | <b>(1.03 , 2.19)</b> |  |
|                 |                |   |                 |  |                  |   |                       |                                    |                      |  |
| 5-9.9%          | 01-08 to 01-21 | 659.8   | (497.4 , 822.1) | 664.9  | (502.2 , 827.5)  | 5.1   | -(224.7 , 233.7)      | 1.01                               | (0.71 , 1.42)        |  |
| 5-9.9%          | 01-22 to 02-04 | 642.8   | (482.4 , 803.2) | 637.1  | (474.4 , 799.8)  | -5.7  | -(234.2 , 221.6)      | 0.99                               | (0.69 , 1.41)        |  |
| 5-9.9%          | 02-05 to 02-18 | 643.4   | (482.4 , 804.3) | 612.1  | (457.0 , 767.2)  | -31.3   | -(254.8 , 191.1)      | 0.95                               | (0.67 , 1.36)        |  |
| 5-9.9%          | 02-19 to 03-03 | 562.5   | (414.0 , 711.0) | 557.0  | (412.2 , 701.8)  | -5.5  | -(212.9 , 200.8)      | 0.99                               | (0.68 , 1.43)        |  |
| 5-9.9%          | 03-04 to 03-17 | 600.8   | (445.2 , 756.5) | 592.3  | (437.8 , 746.8)  | -8.6  | -(227.9 , 209.6)      | 0.99                               | (0.68 , 1.42)        |  |
| 5-9.9%          | 03-18 to 03-31 | 594.4   | (440.4 , 748.4) | 639.4  | (479.2 , 799.5)  | 45.0  | -(177.2 , 266.0)      | 1.08                               | (0.75 , 1.54)        |  |
| 5-9.9%          | 04-01 to 04-14 | 601.9   | (445.4 , 758.5) | 915.1  | (723.8 , 1106.5) | <b>313.2</b>  | <b>(66.0 , 559.2)</b> | <b>1.52</b>                        | <b>(1.09 , 2.12)</b> |  |
|                 |                |   |                 |  |                  |   |                       |                                    |                      |  |
| 10-19.9%        | 01-08 to 01-21 | 698.8   | (495.4 , 902.1) | 702.0  | (497.8 , 906.2)  | 3.2   | -(285.0 , 289.9)      | 1.00                               | (0.67 , 1.51)        |  |
| 10-19.9%        | 01-22 to 02-04 | 714.0   | (509.0 , 919.1) | 683.8  | (483.4 , 884.2)  | -30.2   | -(316.9 , 255.0)      | 0.96                               | (0.64 , 1.44)        |  |
| 10-19.9%        | 02-05 to 02-18 | 711.7   | (506.5 , 916.9) | 684.5  | (481.6 , 887.5)  | -27.2   | -(315.8 , 260.0)      | 0.96                               | (0.64 , 1.45)        |  |
| 10-19.9%        | 02-19 to 03-03 | 630.5   | (438.0 , 823.1) | 628.0  | (440.3 , 815.6)  | -2.6  | -(271.4 , 264.9)      | 1.00                               | (0.65 , 1.52)        |  |
| 10-19.9%        | 03-04 to 03-17 | 676.1   | (475.8 , 876.4) | 670.6  | (470.3 , 870.9)  | -5.5  | -(288.8 , 276.4)      | 0.99                               | (0.65 , 1.51)        |  |
| 10-19.9%        | 03-18 to 03-31 | 655.2   | (457.8 , 852.5) | 742.1  | (530.6 , 953.5)  | 86.9  | -(202.3 , 374.7)      | 1.13                               | (0.75 , 1.71)        |  |
| 10-19.9%        | 04-01 to 04-14 | 676.1   | (474.9 , 877.3) | 944.5  | (709.0 , 1180.0) | 268.5   | -(41.3 , 576.6)       | 1.40                               | (0.95 , 2.06)        |  |

|         |                |       |                 |        |                  |       |                  |      |               |
|---------|----------------|-------|-----------------|--------|------------------|-------|------------------|------|---------------|
| 20-100% | 01-08 to 01-21 | 691.0 | (453.0 , 929.0) | 632.7  | (402.3 , 863.1)  | -58.3 | -(389.6 , 271.2) | 0.92 | (0.55 , 1.51) |
| 20-100% | 01-22 to 02-04 | 687.3 | (449.9 , 924.6) | 661.9  | (426.9 , 896.9)  | -25.4 | -(359.4 , 306.9) | 0.96 | (0.59 , 1.58) |
| 20-100% | 02-05 to 02-18 | 693.5 | (454.8 , 932.2) | 693.6  | (454.3 , 932.9)  | 0.1   | -(337.9 , 336.3) | 1.00 | (0.61 , 1.62) |
| 20-100% | 02-19 to 03-03 | 602.0 | (381.0 , 822.9) | 646.3  | (421.5 , 871.2)  | 44.4  | -(270.9 , 358.1) | 1.07 | (0.65 , 1.78) |
| 20-100% | 03-04 to 03-17 | 634.8 | (407.2 , 862.3) | 653.4  | (422.4 , 884.5)  | 18.7  | -(305.6 , 341.3) | 1.03 | (0.62 , 1.70) |
| 20-100% | 03-18 to 03-31 | 665.2 | (430.9 , 899.5) | 678.4  | (440.0 , 916.7)  | 13.2  | -(321.1 , 345.7) | 1.02 | (0.62 , 1.67) |
| 20-100% | 04-01 to 04-14 | 635.4 | (406.9 , 863.8) | 1048.1 | (755.0 , 1341.3) | 412.8 | (41.1 , 782.5)   | 1.65 | (1.05 , 2.60) |

% crowding

|               |                |       |                 |       |                  |       |                  |      |               |
|---------------|----------------|-------|-----------------|-------|------------------|-------|------------------|------|---------------|
| (0,0.00695]   | 01-08 to 01-21 | 608.2 | (395.2 , 821.3) | 576.5 | (372.0 , 781.0)  | -31.7 | -(327.0 , 262.1) | 0.95 | (0.58 , 1.56) |
| (0,0.00695]   | 01-22 to 02-04 | 589.2 | (380.2 , 798.2) | 574.6 | (365.7 , 783.5)  | -14.6 | -(310.1 , 279.4) | 0.98 | (0.59 , 1.62) |
| (0,0.00695]   | 02-05 to 02-18 | 565.0 | (360.6 , 769.4) | 601.7 | (392.6 , 810.8)  | 36.7  | -(255.7 , 327.6) | 1.06 | (0.64 , 1.75) |
| (0,0.00695]   | 02-19 to 03-03 | 530.0 | (333.3 , 726.7) | 526.7 | (335.7 , 717.6)  | -3.4  | -(277.5 , 269.4) | 0.99 | (0.59 , 1.66) |
| (0,0.00695]   | 03-04 to 03-17 | 538.9 | (338.1 , 739.8) | 621.2 | (407.8 , 834.7)  | 82.3  | -(210.8 , 373.9) | 1.15 | (0.69 , 1.91) |
| (0,0.00695]   | 03-18 to 03-31 | 514.9 | (319.4 , 710.4) | 550.3 | (352.4 , 748.1)  | 35.4  | -(242.8 , 312.1) | 1.07 | (0.63 , 1.80) |
| (0,0.00695]   | 04-01 to 04-14 | 561.8 | (355.9 , 767.7) | 847.9 | (599.4 , 1096.4) | 286.1 | -(36.6 , 607.2)  | 1.51 | (0.94 , 2.41) |
| (0.00695,0.1] | 01-08 to 01-21 | 625.9 | (434.2 , 817.6) | 625.8 | (434.6 , 816.9)  | -0.1  | -(270.9 , 269.2) | 1.00 | (0.65 , 1.54) |
| (0.00695,0.1] | 01-22 to 02-04 | 593.9 | (407.8 , 779.9) | 651.3 | (454.0 , 848.7)  | 57.5  | -(213.8 , 327.3) | 1.10 | (0.71 , 1.69) |
| (0.00695,0.1] | 02-05 to 02-18 | 635.3 | (441.2 , 829.3) | 605.1 | (418.0 , 792.3)  | -30.1 | -(299.8 , 238.1) | 0.95 | (0.62 , 1.47) |
| (0.00695,0.1] | 02-19 to 03-03 | 549.2 | (371.3 , 727.1) | 521.3 | (350.5 , 692.2)  | -27.9 | -(274.5 , 217.5) | 0.95 | (0.60 , 1.50) |
| (0.00695,0.1] | 03-04 to 03-17 | 587.9 | (401.9 , 774.0) | 580.0 | (394.1 , 765.8)  | -8.0  | -(270.9 , 253.7) | 0.99 | (0.63 , 1.54) |
| (0.00695,0.1] | 03-18 to 03-31 | 567.0 | (383.8 , 750.1) | 657.7 | (459.3 , 856.2)  | 90.7  | -(179.3 , 359.4) | 1.16 | (0.75 , 1.80) |
| (0.00695,0.1] | 04-01 to 04-14 | 568.2 | (384.0 , 752.4) | 806.6 | (590.9 , 1022.4) | 238.4 | -(45.3 , 520.7)  | 1.42 | (0.93 , 2.16) |
| (0.0128,0.0]  | 01-08 to 01-21 | 663.3 | (465.5 , 861.0) | 633.0 | (439.1 , 827.0)  | -30.2 | -(307.2 , 245.3) | 0.95 | (0.62 , 1.46) |
| (0.0128,0.0]  | 01-22 to 02-04 | 668.4 | (469.7 , 867.1) | 576.6 | (390.0 , 763.1)  | -91.8 | -(364.4 , 179.3) | 0.86 | (0.56 , 1.34) |
| (0.0128,0.0]  | 02-05 to 02-18 | 659.2 | (461.6 , 856.8) | 598.8 | (410.3 , 787.3)  | -60.5 | -(333.6 , 211.3) | 0.91 | (0.59 , 1.40) |
| (0.0128,0.0]  | 02-19 to 03-03 | 588.3 | (402.5 , 774.1) | 607.5 | (423.9 , 791.0)  | 19.2  | -(242.0 , 279.0) | 1.03 | (0.67 , 1.60) |

|                            |       |                 |        |                  |       |                  |      |               |
|----------------------------|-------|-----------------|--------|------------------|-------|------------------|------|---------------|
| (0.0128,0.0 03-04 to 03-17 | 628.1 | (434.5 , 821.7) | 617.5  | (427.5 , 807.6)  | -10.6 | -(281.9 , 259.3) | 0.98 | (0.64 , 1.52) |
| (0.0128,0.0 03-18 to 03-31 | 611.4 | (420.7 , 802.2) | 603.7  | (413.1 , 794.3)  | -7.7  | -(277.4 , 260.5) | 0.99 | (0.63 , 1.54) |
| (0.0128,0.0 04-01 to 04-14 | 639.6 | (443.5 , 835.7) | 898.9  | (668.4 , 1129.3) | 259.3 | -(43.3 , 560.3)  | 1.41 | (0.94 , 2.09) |
| (0.0196,0.0358]            |       |                 |        |                  |       |                  |      |               |
| 01-08 to 01-21             | 673.5 | (445.4 , 901.5) | 651.5  | (425.7 , 877.4)  | -21.9 | -(342.9 , 297.4) | 0.97 | (0.60 , 1.57) |
| (0.0196,0.0 01-22 to 02-04 | 673.8 | (445.3 , 902.4) | 627.7  | (407.1 , 848.3)  | -46.1 | -(363.7 , 269.9) | 0.93 | (0.57 , 1.51) |
| (0.0196,0.0 02-05 to 02-18 | 679.5 | (449.9 , 909.1) | 699.1  | (464.3 , 933.9)  | 19.6  | -(308.8 , 346.3) | 1.03 | (0.64 , 1.65) |
| (0.0196,0.0 02-19 to 03-03 | 597.7 | (384.0 , 811.3) | 623.3  | (408.4 , 838.3)  | 25.7  | -(277.4 , 327.2) | 1.04 | (0.63 , 1.71) |
| (0.0196,0.0 03-04 to 03-17 | 608.0 | (391.6 , 824.5) | 666.1  | (440.0 , 892.3)  | 58.1  | -(255.0 , 369.5) | 1.10 | (0.67 , 1.79) |
| (0.0196,0.0 03-18 to 03-31 | 639.6 | (416.2 , 863.1) | 708.2  | (472.0 , 944.4)  | 68.5  | -(256.6 , 392.0) | 1.11 | (0.68 , 1.79) |
| (0.0196,0.0 04-01 to 04-14 | 625.4 | (404.1 , 846.6) | 995.4  | (716.0 , 1274.8) | 370.0 | (13.7 , 724.6)   | 1.59 | (1.01 , 2.49) |
| (0.0358,0.1 01-08 to 01-21 | 687.6 | (453.4 , 921.9) | 627.1  | (401.5 , 852.8)  | -60.5 | -(385.8 , 263.1) | 0.91 | (0.56 , 1.49) |
| (0.0358,0.1 01-22 to 02-04 | 700.2 | (463.5 , 936.9) | 710.0  | (470.4 , 949.7)  | 9.9   | -(327.0 , 345.0) | 1.01 | (0.63 , 1.63) |
| (0.0358,0.1 02-05 to 02-18 | 697.0 | (460.6 , 933.4) | 708.5  | (470.3 , 946.8)  | 11.5  | -(324.1 , 345.5) | 1.02 | (0.63 , 1.63) |
| (0.0358,0.1 02-19 to 03-03 | 587.2 | (372.3 , 802.0) | 616.2  | (400.4 , 832.1)  | 29.1  | -(275.5 , 332.1) | 1.05 | (0.63 , 1.74) |
| (0.0358,0.1 03-04 to 03-17 | 649.1 | (422.1 , 876.0) | 627.4  | (403.1 , 851.8)  | -21.6 | -(340.8 , 295.9) | 0.97 | (0.59 , 1.59) |
| (0.0358,0.1 03-18 to 03-31 | 646.2 | (419.2 , 873.2) | 712.1  | (470.5 , 953.7)  | 65.9  | -(265.6 , 395.7) | 1.10 | (0.68 , 1.79) |
| (0.0358,0.1 04-01 to 04-14 | 638.9 | (412.7 , 865.0) | 1098.1 | (802.5 , 1393.7) | 459.2 | (87.0 , 829.5)   | 1.72 | (1.10 , 2.68) |

Index of Concentration at the Extremes (high income white non-Hispanic vs. low income people of color)

|                            |       |                 |        |                  |       |                  |      |               |
|----------------------------|-------|-----------------|--------|------------------|-------|------------------|------|---------------|
| (-0.21,0.03 01-08 to 01-21 | 703.2 | (474.1 , 932.3) | 654.4  | (431.6 , 877.1)  | -48.9 | -(368.4 , 269.1) | 0.93 | (0.58 , 1.49) |
| (-0.21,0.03 01-22 to 02-04 | 705.1 | (475.8 , 934.5) | 666.7  | (442.6 , 890.8)  | -38.4 | -(359.1 , 280.6) | 0.95 | (0.59 , 1.51) |
| (-0.21,0.03 02-05 to 02-18 | 716.5 | (484.9 , 948.1) | 720.8  | (487.9 , 953.6)  | 4.2   | -(324.2 , 331.0) | 1.01 | (0.64 , 1.59) |
| (-0.21,0.03 02-19 to 03-03 | 616.1 | (402.7 , 829.5) | 668.5  | (449.8 , 887.2)  | 52.4  | -(253.2 , 356.4) | 1.09 | (0.67 , 1.74) |
| (-0.21,0.03 03-04 to 03-17 | 654.9 | (434.3 , 875.5) | 667.6  | (444.4 , 890.7)  | 12.6  | -(301.1 , 324.8) | 1.02 | (0.63 , 1.63) |
| (-0.21,0.03 03-18 to 03-31 | 670.6 | (446.4 , 894.9) | 698.4  | (467.1 , 929.8)  | 27.8  | -(294.4 , 348.4) | 1.04 | (0.65 , 1.66) |
| (-0.21,0.03 04-01 to 04-14 | 645.5 | (425.7 , 865.3) | 1060.1 | (777.9 , 1342.2) | 414.6 | (56.9 , 770.4)   | 1.64 | (1.07 , 2.52) |
| (0.0388,0.2 01-08 to 01-21 | 722.5 | (486.8 , 958.3) | 726.7  | (489.2 , 964.2)  | 4.1   | -(330.5 , 337.0) | 1.01 | (0.63 , 1.59) |

|                             |       |                 |       |                  |              |                       |             |                      |
|-----------------------------|-------|-----------------|-------|------------------|--------------|-----------------------|-------------|----------------------|
| (0.0388,0.2) 01-22 to 02-04 | 739.4 | (501.0 , 977.7) | 735.1 | (495.2 , 975.0)  | -4.3         | -(342.4 , 332.2)      | 0.99        | (0.63 , 1.57)        |
| (0.0388,0.2) 02-05 to 02-18 | 723.5 | (487.8 , 959.2) | 680.1 | (449.8 , 910.5)  | -43.4        | -(373.0 , 284.5)      | 0.94        | (0.59 , 1.50)        |
| (0.0388,0.2) 02-19 to 03-03 | 669.9 | (442.9 , 897.0) | 637.0 | (422.2 , 851.8)  | -32.9        | -(345.5 , 278.1)      | 0.95        | (0.59 , 1.53)        |
| (0.0388,0.2) 03-04 to 03-17 | 697.7 | (466.0 , 929.3) | 703.2 | (467.9 , 938.4)  | 5.5          | -(324.7 , 334.0)      | 1.01        | (0.63 , 1.61)        |
| (0.0388,0.2) 03-18 to 03-31 | 681.7 | (451.3 , 912.0) | 799.1 | (549.0 , 1049.3) | 117.5        | -(222.6 , 455.8)      | 1.17        | (0.74 , 1.85)        |
| (0.0388,0.2) 04-01 to 04-14 | 705.2 | (470.4 , 940.0) | 909.3 | (645.5 , 1173.1) | 204.1        | -(149.1 , 555.4)      | 1.29        | (0.83 , 2.00)        |
|                             |       |                 |       |                  |              |                       |             |                      |
| (0.242,0.36) 01-08 to 01-21 | 649.9 | (456.3 , 843.5) | 631.3 | (440.0 , 822.6)  | -18.6        | -(290.8 , 252.1)      | 0.97        | (0.64 , 1.48)        |
| (0.242,0.36) 01-22 to 02-04 | 632.2 | (440.5 , 823.8) | 609.0 | (420.0 , 798.0)  | -23.2        | -(292.3 , 244.6)      | 0.96        | (0.62 , 1.48)        |
| (0.242,0.36) 02-05 to 02-18 | 655.8 | (460.2 , 851.4) | 642.3 | (449.8 , 834.9)  | -13.5        | -(287.9 , 259.6)      | 0.98        | (0.64 , 1.49)        |
| (0.242,0.36) 02-19 to 03-03 | 562.1 | (382.7 , 741.5) | 543.2 | (371.3 , 715.1)  | -18.9        | -(267.3 , 228.3)      | 0.97        | (0.62 , 1.51)        |
| (0.242,0.36) 03-04 to 03-17 | 618.1 | (427.3 , 809.0) | 575.0 | (393.8 , 756.2)  | -43.1        | -(306.3 , 218.7)      | 0.93        | (0.60 , 1.44)        |
| (0.242,0.36) 03-18 to 03-31 | 606.4 | (419.6 , 793.1) | 621.5 | (431.5 , 811.6)  | 15.2         | -(251.3 , 280.2)      | 1.03        | (0.66 , 1.58)        |
| (0.242,0.36) 04-01 to 04-14 | 607.8 | (418.2 , 797.4) | 880.5 | (653.5 , 1107.5) | 272.7        | -(23.1 , 566.9)       | 1.45        | (0.97 , 2.17)        |
|                             |       |                 |       |                  |              |                       |             |                      |
| (0.363,0.46) 01-08 to 01-21 | 610.8 | (417.0 , 804.7) | 636.5 | (440.0 , 832.9)  | 25.6         | -(250.4 , 300.2)      | 1.04        | (0.67 , 1.62)        |
| (0.363,0.46) 01-22 to 02-04 | 616.8 | (422.2 , 811.4) | 557.7 | (372.1 , 743.2)  | -59.1        | -(328.0 , 208.3)      | 0.90        | (0.57 , 1.43)        |
| (0.363,0.46) 02-05 to 02-18 | 606.0 | (412.8 , 799.2) | 591.9 | (402.1 , 781.8)  | -14.1        | -(285.0 , 255.4)      | 0.98        | (0.62 , 1.53)        |
| (0.363,0.46) 02-19 to 03-03 | 546.4 | (365.6 , 727.2) | 543.0 | (366.6 , 719.4)  | -3.4         | -(256.0 , 247.9)      | 0.99        | (0.63 , 1.58)        |
| (0.363,0.46) 03-04 to 03-17 | 555.1 | (370.0 , 740.2) | 614.5 | (422.0 , 806.9)  | 59.4         | -(207.7 , 325.0)      | 1.11        | (0.70 , 1.75)        |
| (0.363,0.46) 03-18 to 03-31 | 531.8 | (350.9 , 712.7) | 624.3 | (428.9 , 819.7)  | 92.5         | -(173.8 , 357.4)      | 1.17        | (0.74 , 1.86)        |
| (0.363,0.46) 04-01 to 04-14 | 586.2 | (395.7 , 776.8) | 869.9 | (640.7 , 1099.0) | 283.6        | -(14.4 , 580.1)       | 1.48        | (0.98 , 2.25)        |
|                             |       |                 |       |                  |              |                       |             |                      |
| (0.465,0.70) 01-08 to 01-21 | 580.0 | (385.5 , 774.5) | 523.2 | (340.0 , 706.5)  | -56.7        | -(324.0 , 209.1)      | 0.90        | (0.56 , 1.46)        |
| (0.465,0.70) 01-22 to 02-04 | 525.3 | (341.4 , 709.2) | 572.5 | (377.3 , 767.7)  | 47.2         | -(221.0 , 314.0)      | 1.09        | (0.67 , 1.77)        |
| (0.465,0.70) 02-05 to 02-18 | 541.4 | (353.4 , 729.4) | 546.0 | (358.1 , 733.9)  | 4.6          | -(261.1 , 269.0)      | 1.01        | (0.62 , 1.64)        |
| (0.465,0.70) 02-19 to 03-03 | 464.7 | (293.1 , 636.3) | 482.1 | (311.1 , 653.2)  | 17.4         | -(224.9 , 258.4)      | 1.04        | (0.62 , 1.73)        |
| (0.465,0.70) 03-04 to 03-17 | 504.2 | (324.8 , 683.7) | 556.0 | (365.3 , 746.8)  | 51.8         | -(210.2 , 312.3)      | 1.10        | (0.67 , 1.80)        |
| (0.465,0.70) 03-18 to 03-31 | 492.5 | (313.1 , 671.8) | 525.6 | (340.8 , 710.5)  | 33.2         | -(224.4 , 289.4)      | 1.07        | (0.64 , 1.77)        |
| (0.465,0.70) 04-01 to 04-14 | 494.4 | (315.0 , 673.9) | 831.1 | (600.5 , 1061.7) | <b>336.7</b> | <b>(44.5 , 627.4)</b> | <b>1.68</b> | <b>(1.06 , 2.65)</b> |



% black population

|              |                |       |                 |       |                  |       |                  |      |               |
|--------------|----------------|-------|-----------------|-------|------------------|-------|------------------|------|---------------|
| (0,0.0155]   | 01-08 to 01-21 | 606.8 | (408.4 , 805.2) | 596.3 | (402.8 , 789.8)  | -10.5 | -(287.7 , 265.2) | 0.98 | (0.62 , 1.55) |
| (0,0.0155]   | 01-22 to 02-04 | 567.8 | (375.1 , 760.5) | 539.8 | (353.7 , 726.0)  | -28.0 | -(295.9 , 238.6) | 0.95 | (0.59 , 1.54) |
| (0,0.0155]   | 02-05 to 02-18 | 600.6 | (402.2 , 799.1) | 612.6 | (413.8 , 811.5)  | 12.0  | -(268.9 , 291.5) | 1.02 | (0.64 , 1.62) |
| (0,0.0155]   | 02-19 to 03-03 | 525.0 | (342.3 , 707.7) | 515.4 | (339.4 , 691.5)  | -9.6  | -(263.3 , 242.8) | 0.98 | (0.60 , 1.59) |
| (0,0.0155]   | 03-04 to 03-17 | 539.4 | (352.2 , 726.5) | 613.8 | (413.5 , 814.1)  | 74.4  | -(199.7 , 347.2) | 1.14 | (0.71 , 1.83) |
| (0,0.0155]   | 03-18 to 03-31 | 528.9 | (342.2 , 715.6) | 595.6 | (396.5 , 794.8)  | 66.7  | -(206.3 , 338.3) | 1.13 | (0.69 , 1.83) |
| (0,0.0155]   | 04-01 to 04-14 | 562.6 | (369.8 , 755.5) | 795.0 | (569.4 , 1020.6) | 232.4 | -(64.4 , 527.6)  | 1.41 | (0.91 , 2.20) |
| (0.0155,0.0] | 01-08 to 01-21 | 653.6 | (455.7 , 851.5) | 644.6 | (447.5 , 841.6)  | -9.0  | -(288.3 , 268.8) | 0.99 | (0.64 , 1.51) |
| (0.0155,0.0] | 01-22 to 02-04 | 642.4 | (447.2 , 837.7) | 641.5 | (443.8 , 839.2)  | -0.9  | -(278.8 , 275.5) | 1.00 | (0.65 , 1.54) |
| (0.0155,0.0] | 02-05 to 02-18 | 635.7 | (441.2 , 830.3) | 619.1 | (427.1 , 811.1)  | -16.6 | -(290.0 , 255.3) | 0.97 | (0.63 , 1.50) |
| (0.0155,0.0] | 02-19 to 03-03 | 574.9 | (390.7 , 759.1) | 526.8 | (355.0 , 698.7)  | -48.1 | -(300.0 , 202.6) | 0.92 | (0.58 , 1.44) |
| (0.0155,0.0] | 03-04 to 03-17 | 616.5 | (423.3 , 809.8) | 629.4 | (436.4 , 822.5)  | 12.9  | -(260.3 , 284.6) | 1.02 | (0.66 , 1.58) |
| (0.0155,0.0] | 03-18 to 03-31 | 570.2 | (386.3 , 754.1) | 672.9 | (473.3 , 872.4)  | 102.7 | -(168.7 , 372.6) | 1.18 | (0.76 , 1.82) |
| (0.0155,0.0] | 04-01 to 04-14 | 594.4 | (404.8 , 784.0) | 873.2 | (647.1 , 1099.3) | 278.8 | -(16.3 , 572.4)  | 1.47 | (0.97 , 2.21) |
| (0.0298,0.0] | 01-08 to 01-21 | 673.3 | (469.4 , 877.2) | 625.3 | (427.4 , 823.1)  | -48.0 | -(332.1 , 234.7) | 0.93 | (0.60 , 1.44) |
| (0.0298,0.0] | 01-22 to 02-04 | 663.7 | (461.3 , 866.1) | 675.3 | (466.5 , 884.2)  | 11.7  | -(279.2 , 301.0) | 1.02 | (0.66 , 1.57) |
| (0.0298,0.0] | 02-05 to 02-18 | 641.2 | (442.0 , 840.4) | 671.4 | (467.0 , 875.8)  | 30.2  | -(255.2 , 314.2) | 1.05 | (0.68 , 1.61) |
| (0.0298,0.0] | 02-19 to 03-03 | 571.0 | (383.9 , 758.0) | 636.5 | (442.0 , 831.0)  | 65.5  | -(204.3 , 333.9) | 1.11 | (0.71 , 1.74) |
| (0.0298,0.0] | 03-04 to 03-17 | 606.9 | (413.6 , 800.2) | 653.3 | (450.7 , 856.0)  | 46.4  | -(233.7 , 325.0) | 1.08 | (0.69 , 1.68) |
| (0.0298,0.0] | 03-18 to 03-31 | 612.5 | (416.8 , 808.2) | 586.7 | (394.8 , 778.7)  | -25.8 | -(299.9 , 247.0) | 0.96 | (0.61 , 1.51) |
| (0.0298,0.0] | 04-01 to 04-14 | 626.5 | (428.4 , 824.7) | 924.9 | (687.1 , 1162.7) | 298.4 | -(11.1 , 606.3)  | 1.48 | (0.98 , 2.21) |
| (0.0516,0.1] | 01-08 to 01-21 | 679.6 | (473.9 , 885.4) | 672.2 | (467.8 , 876.5)  | -7.5  | -(297.4 , 281.0) | 0.99 | (0.64 , 1.52) |
| (0.0516,0.1] | 01-22 to 02-04 | 687.9 | (480.0 , 895.7) | 608.3 | (413.1 , 803.4)  | -79.6 | -(364.7 , 204.0) | 0.88 | (0.57 , 1.37) |
| (0.0516,0.1] | 02-05 to 02-18 | 689.5 | (481.6 , 897.4) | 602.4 | (407.1 , 797.7)  | -87.1 | -(372.3 , 196.6) | 0.87 | (0.56 , 1.36) |
| (0.0516,0.1] | 02-19 to 03-03 | 598.2 | (405.7 , 790.7) | 618.5 | (427.5 , 809.5)  | 20.3  | -(250.9 , 290.1) | 1.03 | (0.66 , 1.61) |
| (0.0516,0.1] | 03-04 to 03-17 | 637.7 | (438.2 , 837.1) | 578.5 | (389.2 , 767.8)  | -59.2 | -(334.2 , 214.4) | 0.91 | (0.58 , 1.42) |

|             |                |       |                 |        |                  |       |                  |      |               |
|-------------|----------------|-------|-----------------|--------|------------------|-------|------------------|------|---------------|
| (0.0516,0.1 | 03-18 to 03-31 | 648.0 | (446.8 , 849.3) | 700.0  | (488.6 , 911.5)  | 52.0  | -(239.9 , 342.4) | 1.08 | (0.70 , 1.66) |
| (0.0516,0.1 | 04-01 to 04-14 | 649.0 | (446.6 , 851.3) | 948.2  | (704.8 , 1191.6) | 299.2 | -(17.3 , 614.2)  | 1.46 | (0.98 , 2.18) |
| (0.131,0.42 | 01-08 to 01-21 | 648.1 | (403.5 , 892.6) | 613.5  | (373.8 , 853.2)  | -34.5 | -(377.0 , 306.2) | 0.95 | (0.55 , 1.63) |
| (0.131,0.42 | 01-22 to 02-04 | 652.7 | (407.8 , 897.7) | 652.4  | (406.2 , 898.7)  | -0.3  | -(347.7 , 345.3) | 1.00 | (0.59 , 1.70) |
| (0.131,0.42 | 02-05 to 02-18 | 671.3 | (422.3 , 920.3) | 679.0  | (429.5 , 928.4)  | 7.7   | -(344.8 , 358.3) | 1.01 | (0.60 , 1.70) |
| (0.131,0.42 | 02-19 to 03-03 | 578.7 | (348.8 , 808.6) | 578.0  | (352.8 , 803.2)  | -0.7  | -(322.5 , 319.5) | 1.00 | (0.57 , 1.74) |
| (0.131,0.42 | 03-04 to 03-17 | 617.2 | (379.5 , 854.9) | 622.1  | (383.2 , 861.0)  | 4.8   | -(332.2 , 340.1) | 1.01 | (0.59 , 1.73) |
| (0.131,0.42 | 03-18 to 03-31 | 621.0 | (381.9 , 860.1) | 705.8  | (447.9 , 963.7)  | 84.8  | -(266.9 , 434.7) | 1.14 | (0.67 , 1.93) |
| (0.131,0.42 | 04-01 to 04-14 | 590.8 | (356.6 , 825.1) | 1076.3 | (760.5 , 1392.2) | 485.5 | (92.3 , 876.8)   | 1.82 | (1.11 , 2.98) |

% population of color

|             |                |       |                 |       |                  |       |                  |      |               |
|-------------|----------------|-------|-----------------|-------|------------------|-------|------------------|------|---------------|
| (0.0129,0.0 | 01-08 to 01-21 | 641.2 | (445.4 , 837.1) | 624.3 | (431.8 , 816.8)  | -16.9 | -(291.5 , 256.3) | 0.97 | (0.63 , 1.50) |
| (0.0129,0.0 | 01-22 to 02-04 | 628.5 | (433.9 , 823.1) | 577.6 | (388.5 , 766.8)  | -50.9 | -(322.2 , 219.1) | 0.92 | (0.59 , 1.44) |
| (0.0129,0.0 | 02-05 to 02-18 | 633.2 | (436.8 , 829.6) | 613.5 | (422.1 , 804.8)  | -19.7 | -(293.9 , 253.0) | 0.97 | (0.62 , 1.50) |
| (0.0129,0.0 | 02-19 to 03-03 | 535.1 | (357.3 , 712.9) | 518.8 | (349.5 , 688.0)  | -16.3 | -(261.8 , 227.9) | 0.97 | (0.61 , 1.54) |
| (0.0129,0.0 | 03-04 to 03-17 | 586.8 | (398.2 , 775.5) | 630.3 | (434.4 , 826.1)  | 43.4  | -(228.5 , 314.0) | 1.07 | (0.69 , 1.68) |
| (0.0129,0.0 | 03-18 to 03-31 | 546.8 | (365.1 , 728.6) | 638.6 | (441.8 , 835.3)  | 91.8  | -(176.1 , 358.3) | 1.17 | (0.74 , 1.83) |
| (0.0129,0.0 | 04-01 to 04-14 | 588.4 | (398.2 , 778.6) | 816.0 | (595.0 , 1036.9) | 227.6 | -(64.0 , 517.7)  | 1.39 | (0.91 , 2.11) |
| (0.0933,0.1 | 01-08 to 01-21 | 664.3 | (469.4 , 859.2) | 654.7 | (463.0 , 846.4)  | -9.6  | -(283.0 , 262.4) | 0.99 | (0.65 , 1.49) |
| (0.0933,0.1 | 01-22 to 02-04 | 633.4 | (444.3 , 822.5) | 668.6 | (470.7 , 866.4)  | 35.2  | -(238.5 , 307.5) | 1.06 | (0.69 , 1.60) |
| (0.0933,0.1 | 02-05 to 02-18 | 638.5 | (448.4 , 828.6) | 677.4 | (481.7 , 873.2)  | 38.9  | -(233.9 , 310.4) | 1.06 | (0.70 , 1.60) |
| (0.0933,0.1 | 02-19 to 03-03 | 580.1 | (400.1 , 760.2) | 565.1 | (390.8 , 739.3)  | -15.1 | -(265.6 , 234.2) | 0.97 | (0.63 , 1.51) |
| (0.0933,0.1 | 03-04 to 03-17 | 619.5 | (431.1 , 807.8) | 632.8 | (443.8 , 821.7)  | 13.3  | -(253.5 , 278.7) | 1.02 | (0.67 , 1.56) |
| (0.0933,0.1 | 03-18 to 03-31 | 589.1 | (405.4 , 772.7) | 632.9 | (444.8 , 821.1)  | 43.9  | -(219.1 , 305.5) | 1.07 | (0.70 , 1.65) |
| (0.0933,0.1 | 04-01 to 04-14 | 621.7 | (432.0 , 811.3) | 861.9 | (642.4 , 1081.3) | 240.2 | -(49.8 , 528.7)  | 1.39 | (0.93 , 2.06) |
| (0.163,0.27 | 01-08 to 01-21 | 627.3 | (427.7 , 827.0) | 640.3 | (438.5 , 842.2)  | 13.0  | -(270.9 , 295.5) | 1.02 | (0.65 , 1.59) |
| (0.163,0.27 | 01-22 to 02-04 | 616.9 | (419.3 , 814.5) | 584.3 | (392.3 , 776.3)  | -32.6 | -(308.1 , 241.5) | 0.95 | (0.60 , 1.50) |

|                            |       |                 |        |                  |       |                  |      |               |
|----------------------------|-------|-----------------|--------|------------------|-------|------------------|------|---------------|
| (0.163,0.27 02-05 to 02-18 | 612.9 | (415.2 , 810.6) | 581.5  | (389.6 , 773.4)  | -31.4 | -(306.9 , 242.7) | 0.95 | (0.60 , 1.50) |
| (0.163,0.27 02-19 to 03-03 | 558.8 | (371.7 , 746.0) | 567.8  | (384.0 , 751.6)  | 9.0   | -(253.4 , 270.0) | 1.02 | (0.64 , 1.62) |
| (0.163,0.27 03-04 to 03-17 | 562.2 | (373.7 , 750.8) | 568.4  | (378.6 , 758.2)  | 6.2   | -(261.3 , 272.3) | 1.01 | (0.63 , 1.62) |
| (0.163,0.27 03-18 to 03-31 | 591.8 | (398.2 , 785.5) | 600.2  | (403.8 , 796.6)  | 8.3   | -(267.5 , 282.8) | 1.01 | (0.64 , 1.61) |
| (0.163,0.27 04-01 to 04-14 | 571.6 | (380.7 , 762.5) | 905.1  | (665.7 , 1144.4) | 333.5 | (27.3 , 638.0)   | 1.58 | (1.03 , 2.42) |
| (0.279,0.51 01-08 to 01-21 | 651.5 | (438.5 , 864.5) | 605.0  | (398.9 , 811.0)  | -46.5 | -(342.9 , 248.3) | 0.93 | (0.58 , 1.49) |
| (0.279,0.51 01-22 to 02-04 | 658.9 | (443.5 , 874.3) | 608.2  | (401.8 , 814.6)  | -50.7 | -(349.0 , 246.1) | 0.92 | (0.58 , 1.48) |
| (0.279,0.51 02-05 to 02-18 | 665.2 | (449.4 , 880.9) | 605.1  | (397.7 , 812.4)  | -60.1 | -(359.4 , 237.6) | 0.91 | (0.57 , 1.45) |
| (0.279,0.51 02-19 to 03-03 | 590.0 | (387.3 , 792.7) | 601.6  | (401.0 , 802.2)  | 11.5  | -(273.7 , 295.2) | 1.02 | (0.63 , 1.64) |
| (0.279,0.51 03-04 to 03-17 | 616.9 | (409.4 , 824.4) | 627.0  | (418.0 , 836.0)  | 10.1  | -(284.4 , 303.1) | 1.02 | (0.63 , 1.63) |
| (0.279,0.51 03-18 to 03-31 | 621.7 | (412.4 , 831.1) | 661.7  | (444.1 , 879.3)  | 40.0  | -(262.0 , 340.4) | 1.06 | (0.66 , 1.70) |
| (0.279,0.51 04-01 to 04-14 | 633.2 | (421.0 , 845.4) | 873.3  | (626.8 , 1119.8) | 240.1 | -(85.2 , 563.8)  | 1.38 | (0.89 , 2.13) |
| (0.512,0.85 01-08 to 01-21 | 674.4 | (431.2 , 917.7) | 611.1  | (377.3 , 844.8)  | -63.4 | -(400.7 , 272.3) | 0.91 | (0.54 , 1.53) |
| (0.512,0.85 01-22 to 02-04 | 675.8 | (432.5 , 919.2) | 676.9  | (432.0 , 921.8)  | 1.0   | -(344.2 , 344.5) | 1.00 | (0.60 , 1.66) |
| (0.512,0.85 02-05 to 02-18 | 688.8 | (442.6 , 935.1) | 701.4  | (453.9 , 948.9)  | 12.6  | -(336.6 , 359.9) | 1.02 | (0.62 , 1.68) |
| (0.512,0.85 02-19 to 03-03 | 575.4 | (352.1 , 798.7) | 629.3  | (399.7 , 858.9)  | 53.9  | -(266.4 , 372.5) | 1.09 | (0.64 , 1.86) |
| (0.512,0.85 03-04 to 03-17 | 632.6 | (398.0 , 867.1) | 629.1  | (394.8 , 863.4)  | -3.5  | -(335.0 , 326.4) | 0.99 | (0.59 , 1.68) |
| (0.512,0.85 03-18 to 03-31 | 633.3 | (397.5 , 869.0) | 706.5  | (454.3 , 958.6)  | 73.2  | -(272.0 , 416.6) | 1.12 | (0.67 , 1.86) |
| (0.512,0.85 04-01 to 04-14 | 612.6 | (380.5 , 844.8) | 1190.0 | (865.9 , 1514.2) | 577.4 | (178.7 , 974.1)  | 1.94 | (1.22 , 3.09) |

Figure 1a: Massachusetts age-standardized death rates by two-week period, 2020 (solid) and 2015–2019 (dotted), Jan 8–April 14

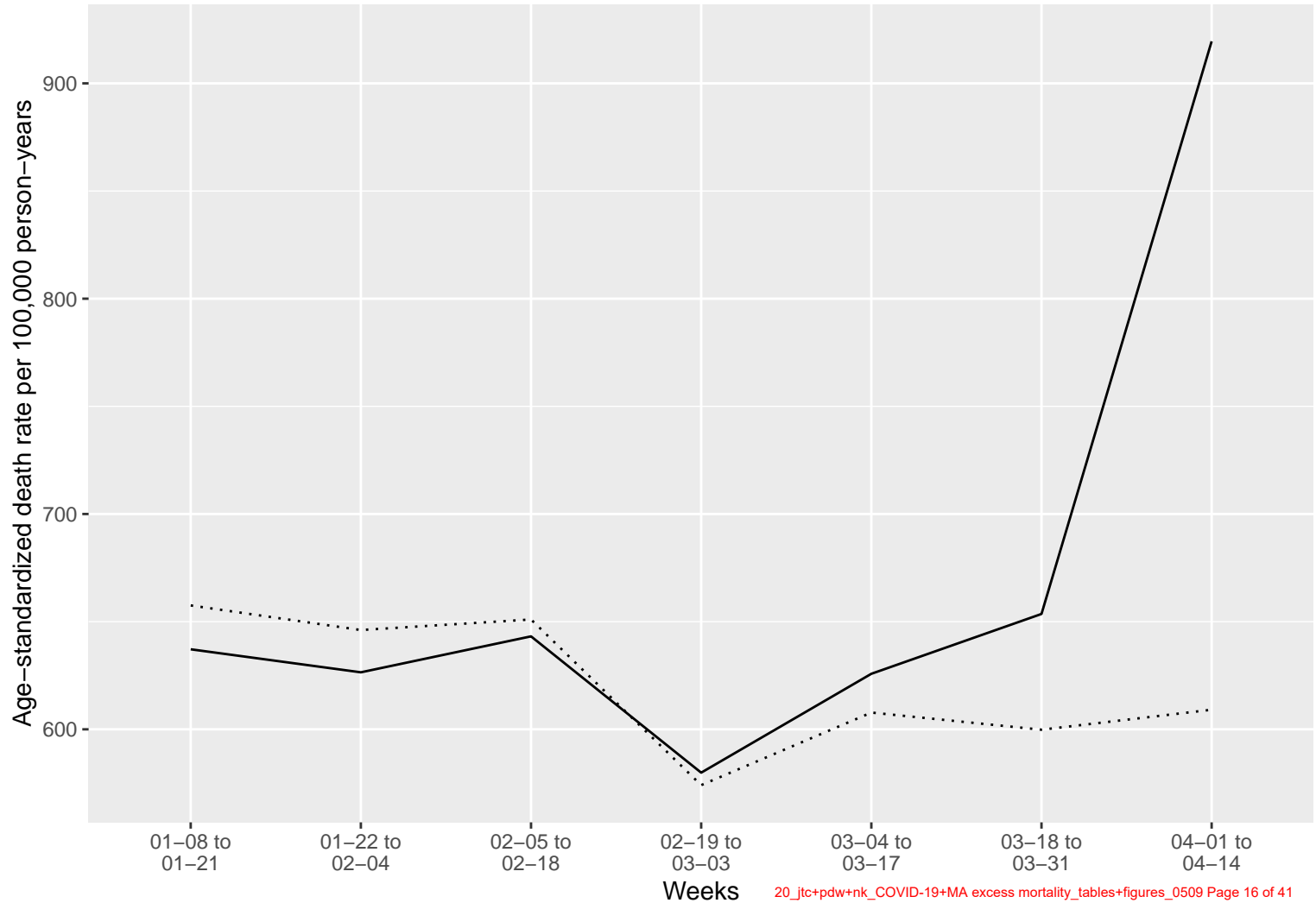


Figure 1b: Massachusetts age-standardized mortality rate differences by two-week period, 2020 vs. 2015–2019, Jan 8–April 14

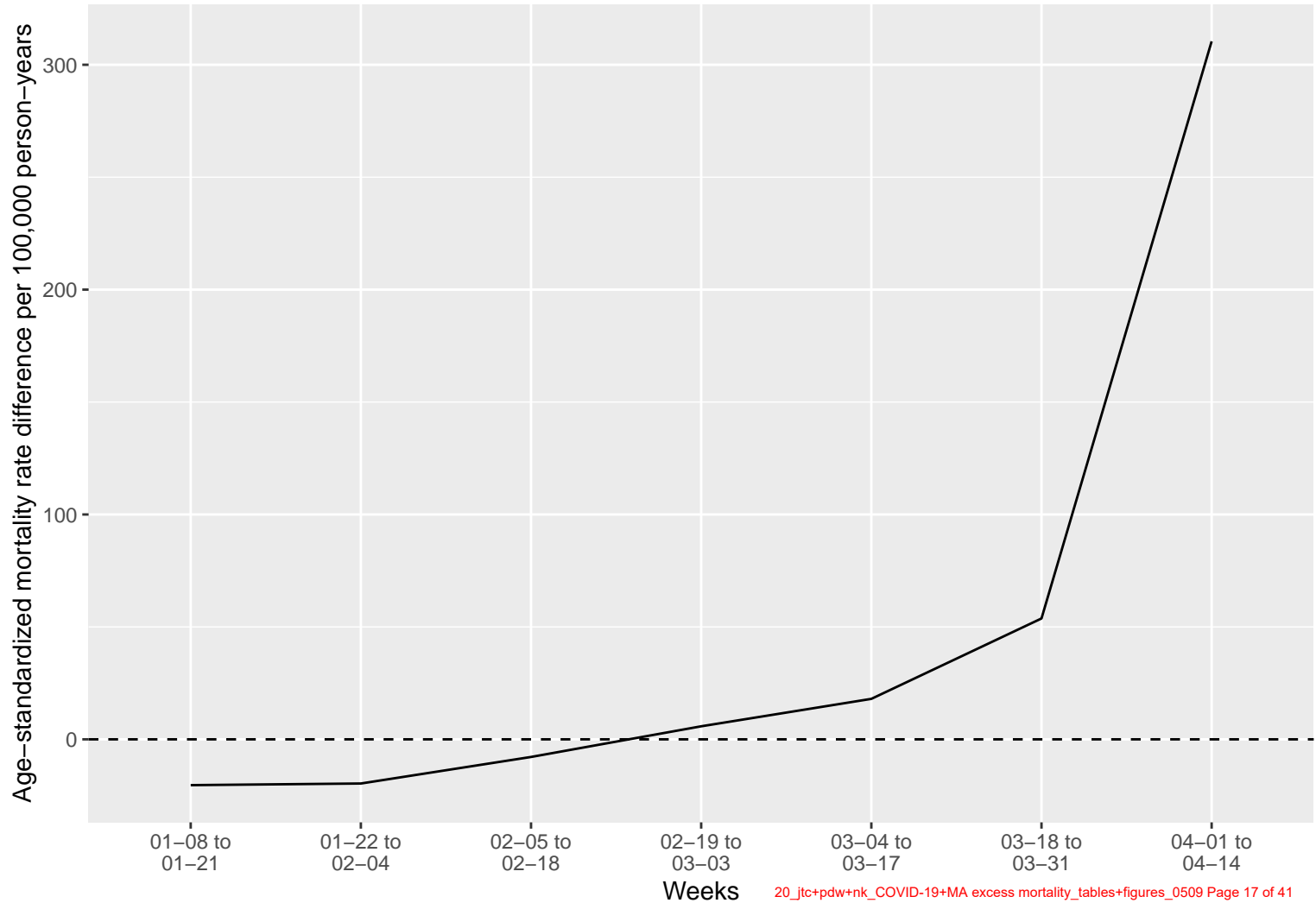


Figure 1c: Massachusetts age-standardized death rates by two-week period and sex, 2020 (solid) and 2015–2019 (dotted), Jan 8–April 14

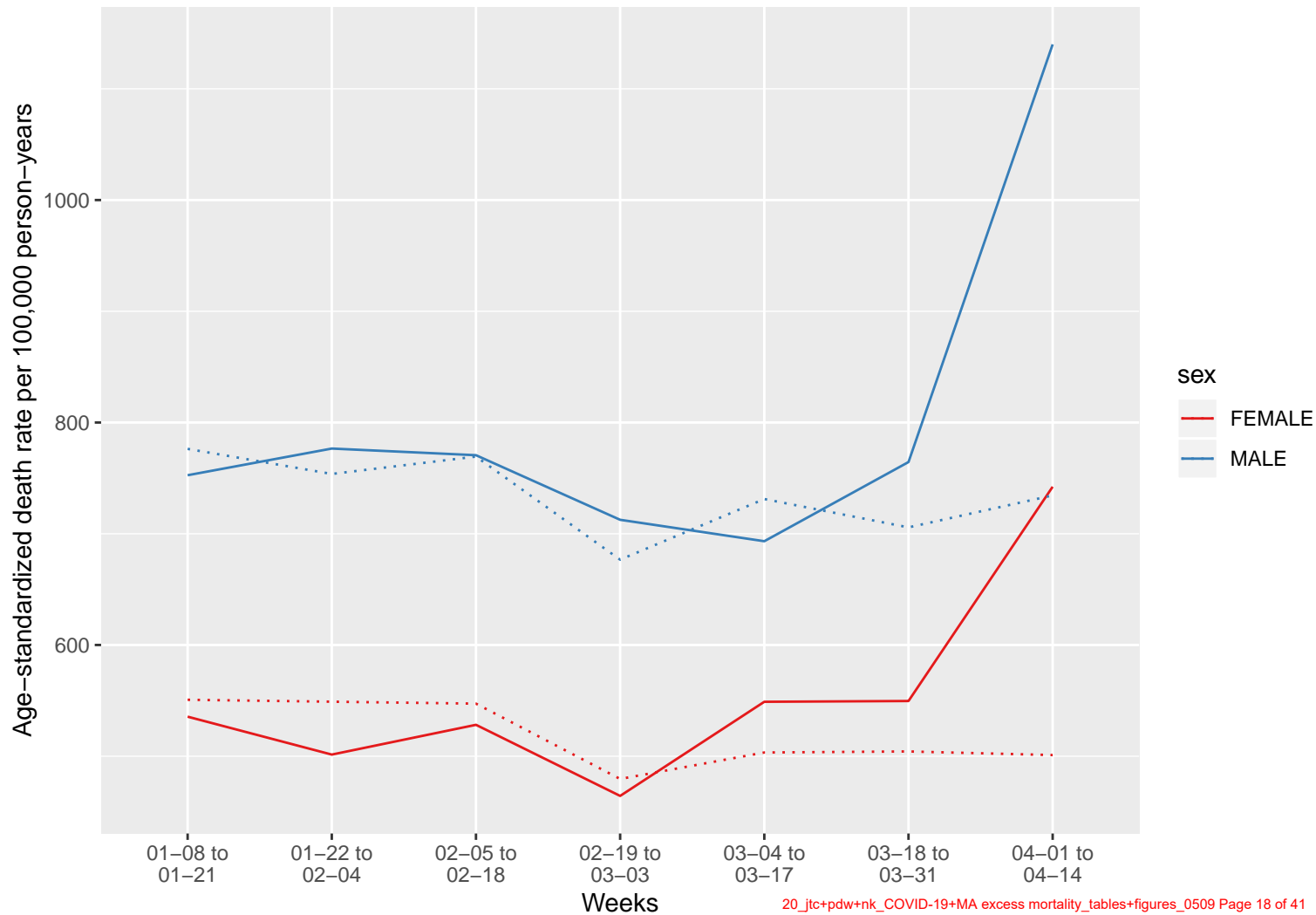


Figure 1d: Massachusetts age-standardized mortality rate differences by two-week period and sex, 2020 vs. 2015–2019, Jan 8–April 14

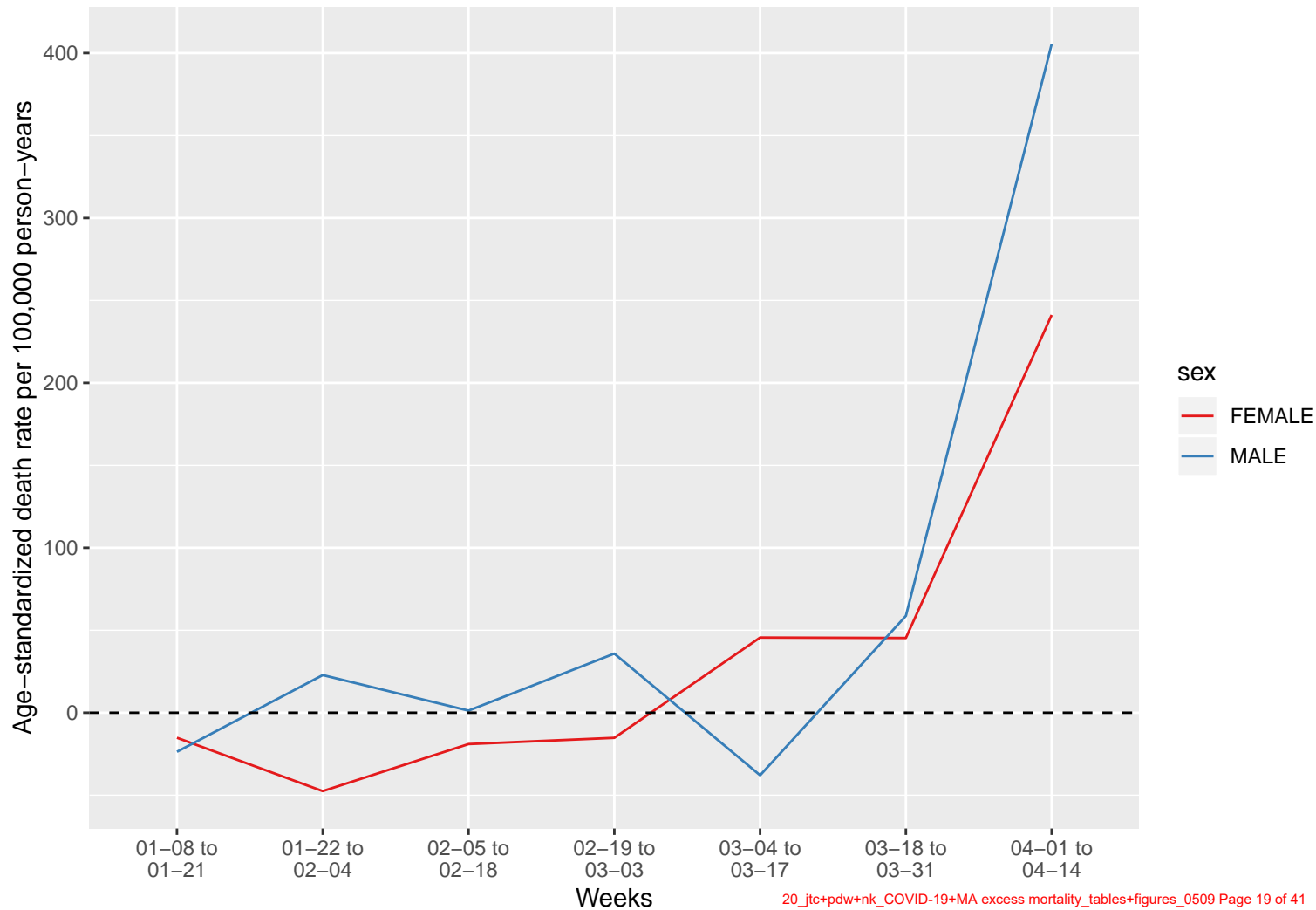


Figure 1e: Massachusetts crude death rates per 100,000 person-years by two-week period and age, 2020 (solid) and 2015–2019 (dotted), Jan 8–April 14

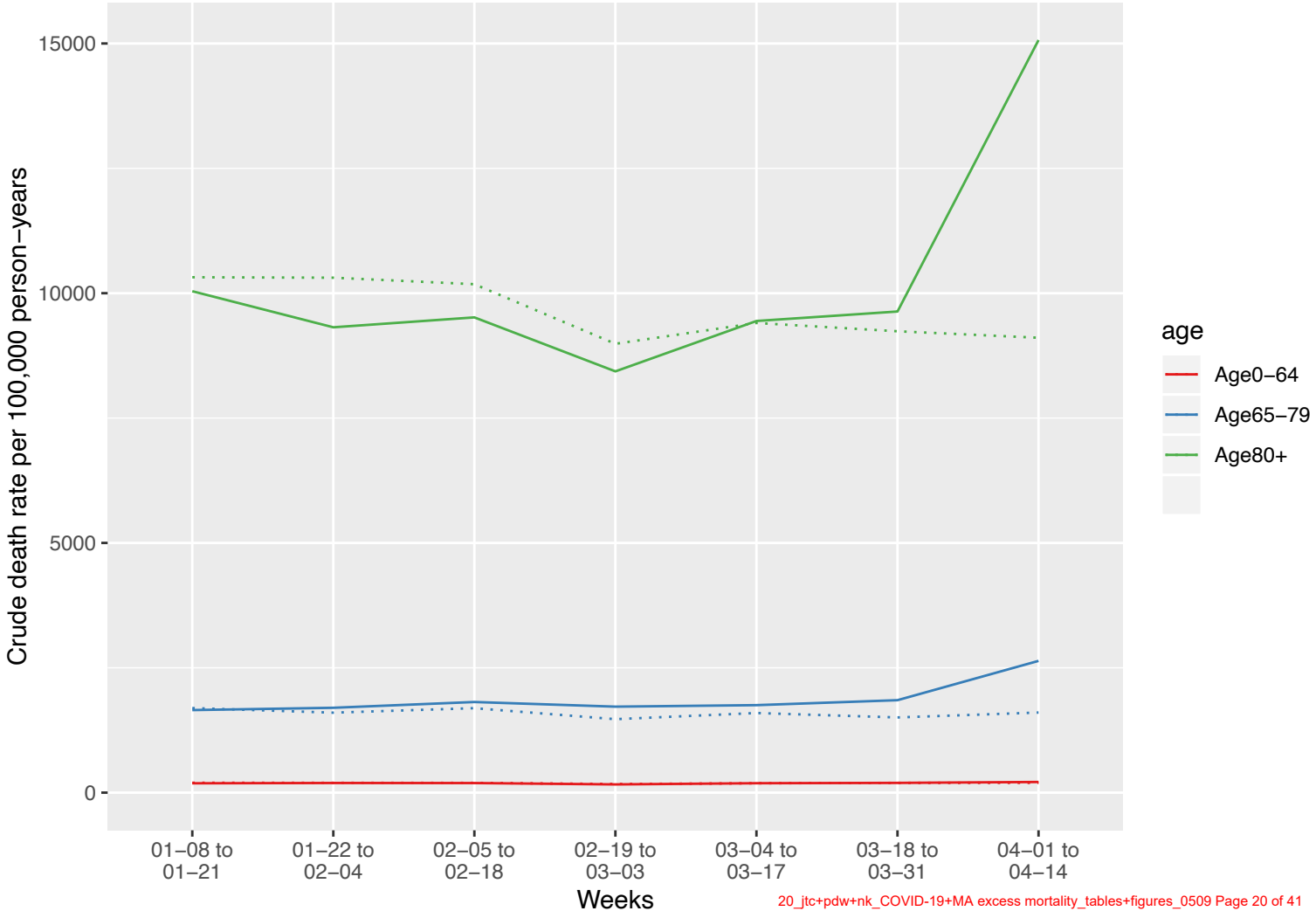




Figure 1f: Massachusetts crude mortality rate differences per 100,000 person-years by two-week period and age, 2020 vs. 2015–2019, Jan 8–April 14

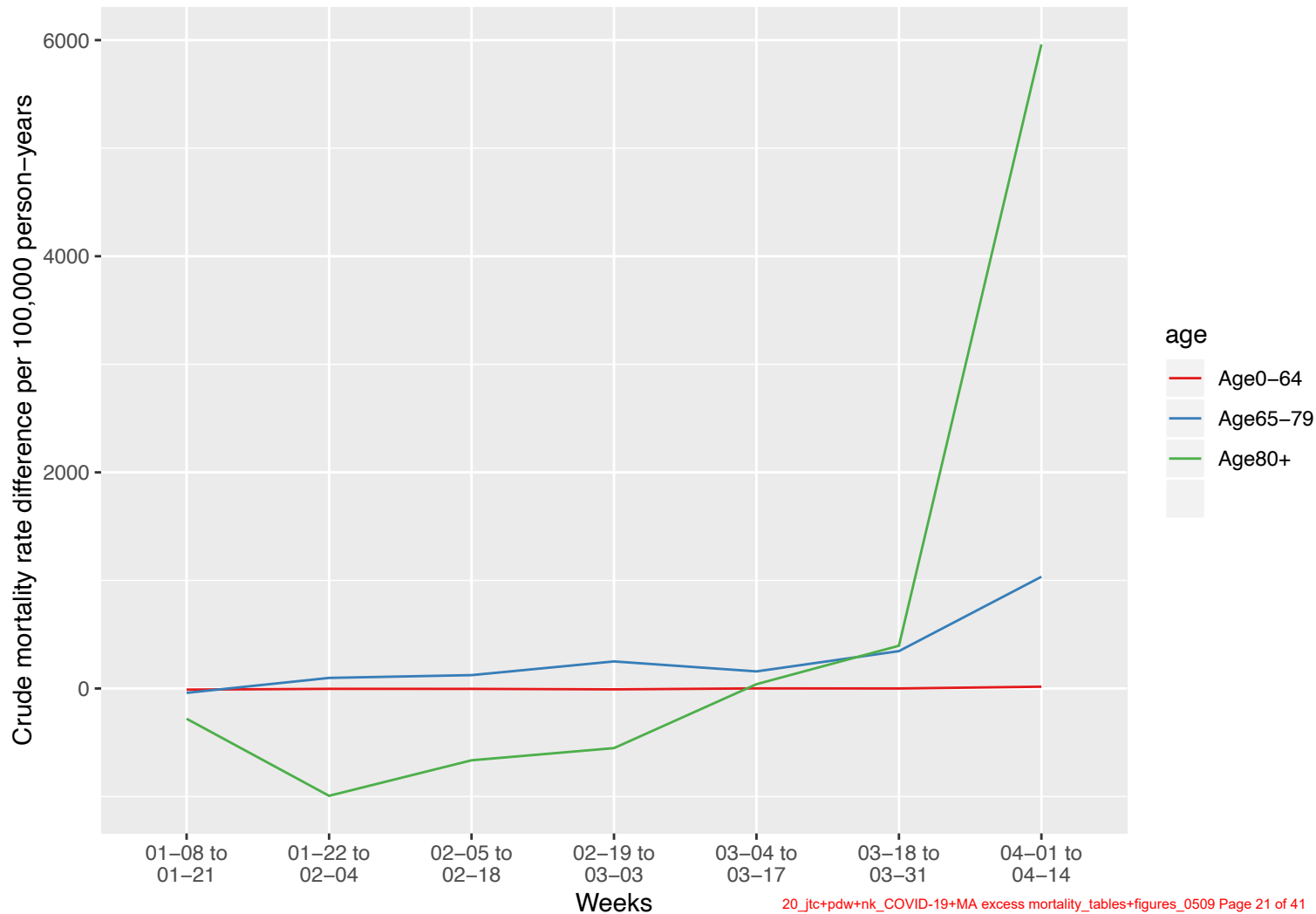


Figure 2a: Massachusetts age-standardized death rates by two week period and ZCTA % poverty, 2020 (solid) and 2015–2019 (dotted), Jan 8–April 14

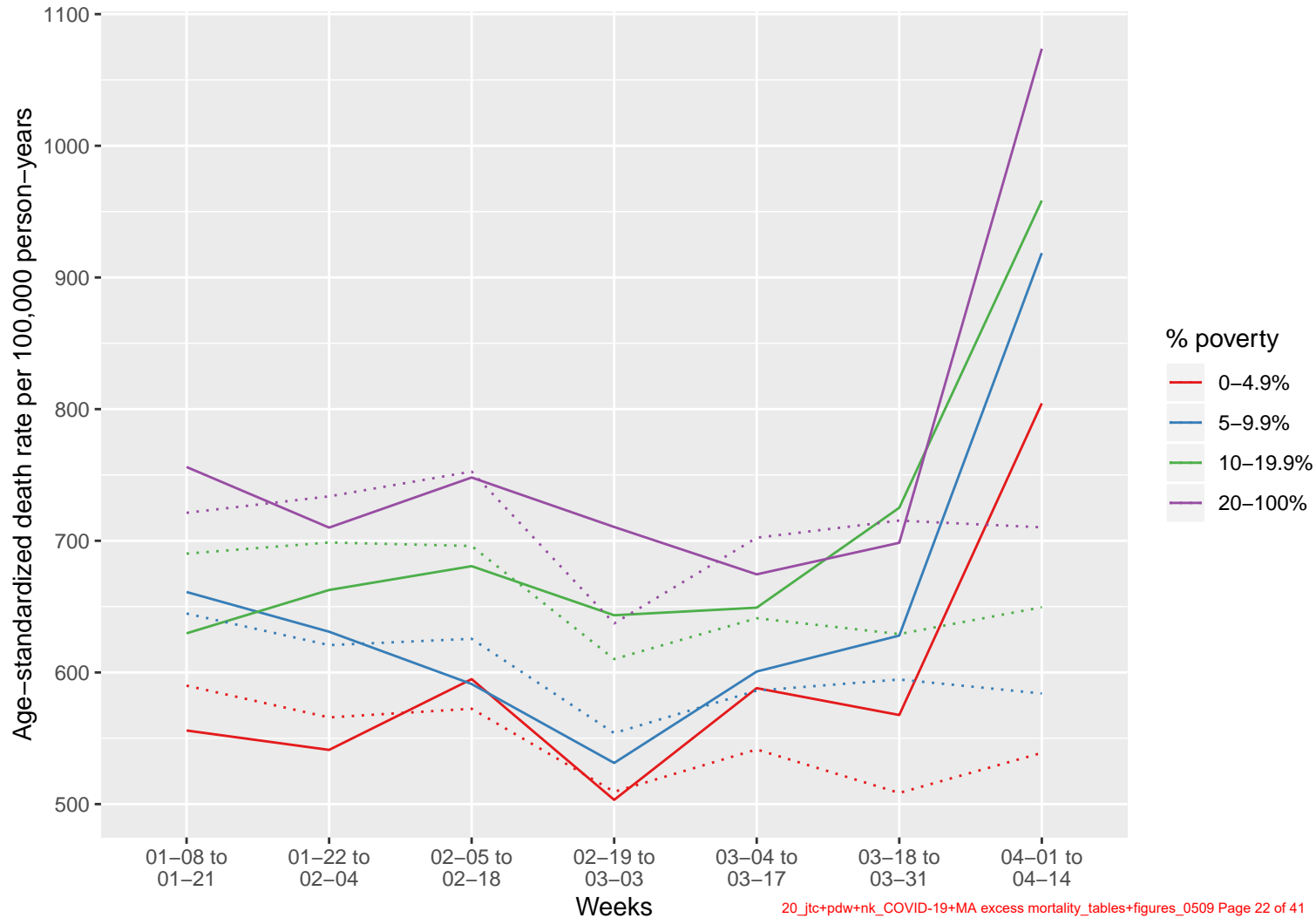


Figure 2b: Massachusetts age-standardized death rates by two week period and ZCTA % crowding, 2020 (solid) and 2015–2019 (dotted), Jan 8–April 14

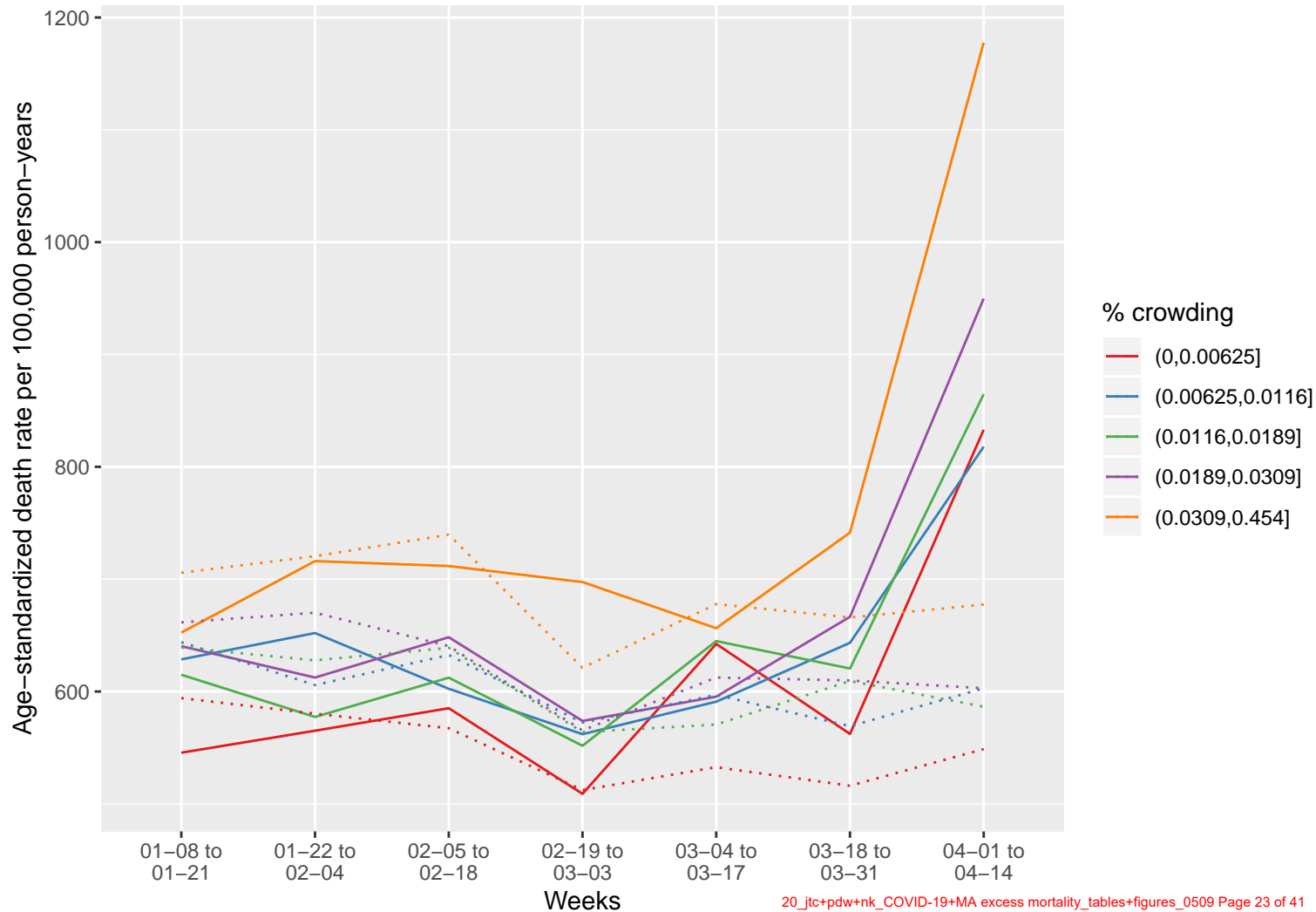


Figure 2c: Massachusetts age-standardized death rates by two week period and ZCTA ICE, 2020 (solid) and 2015–2019 (dotted), Jan 8–April 14

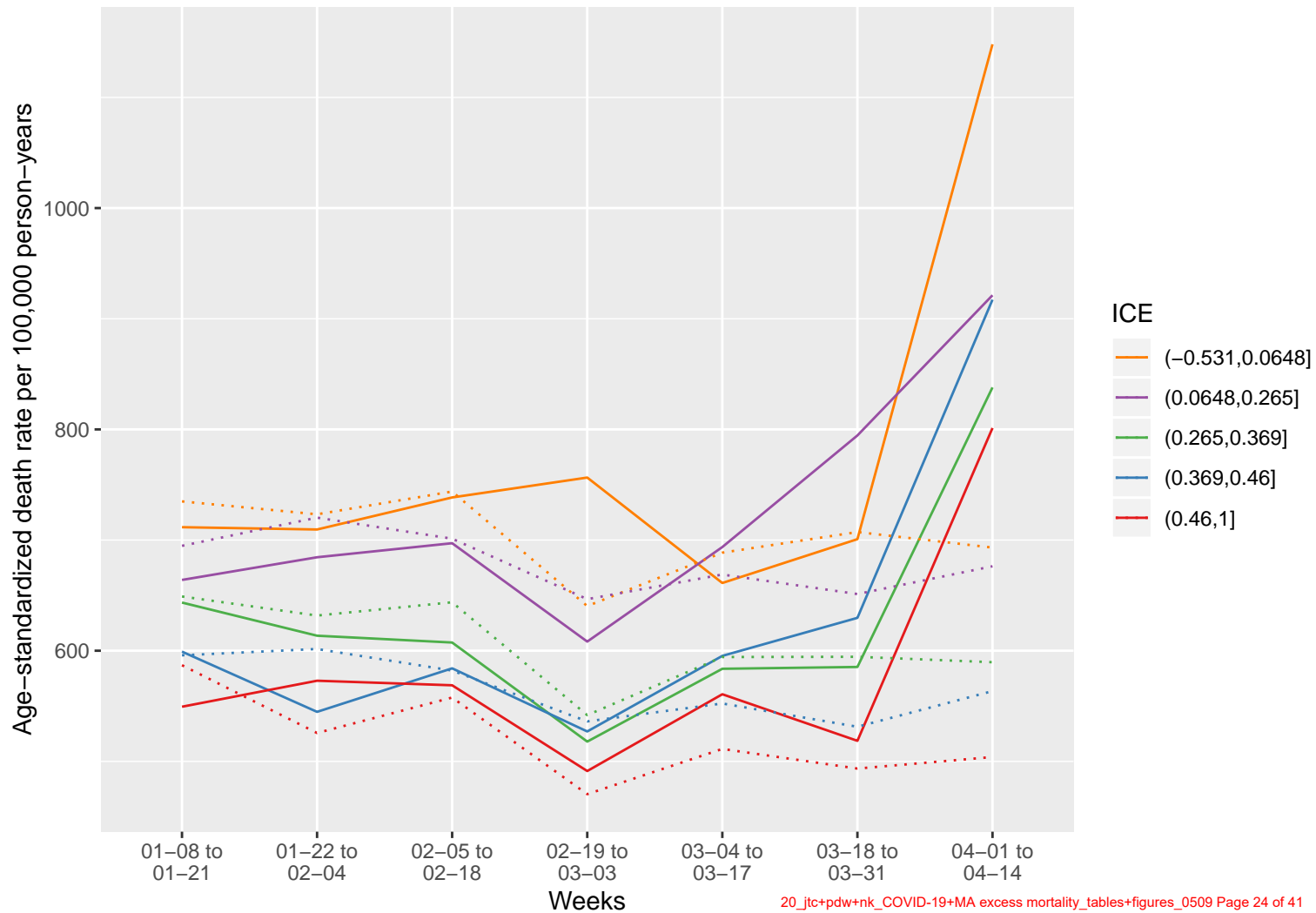


Figure 2d: Massachusetts age-standardized death rates by two week period and ZCTA % black population, 2020 (solid) and 2015–2019 (dotted), Jan 8–April 14

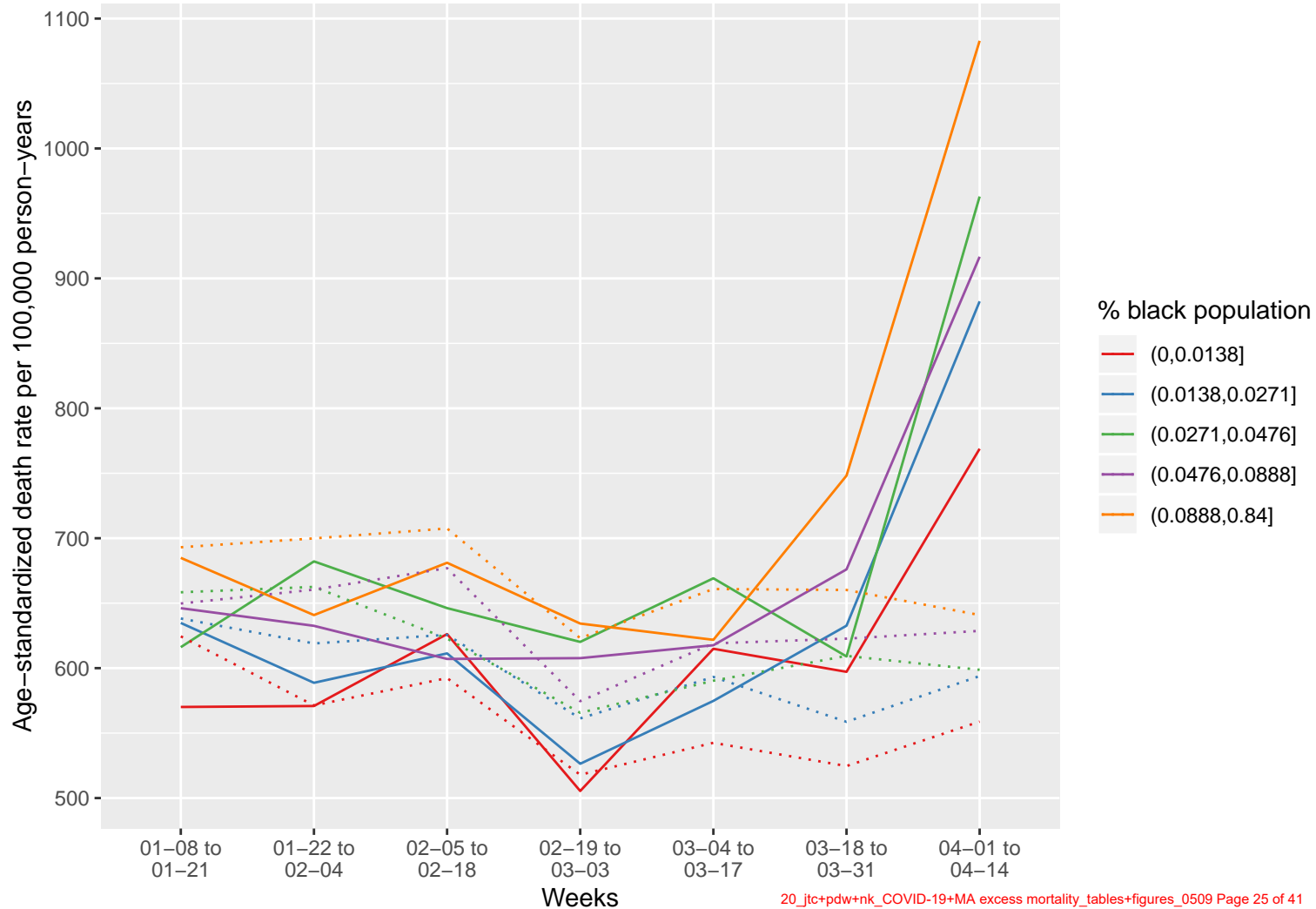


Figure 2e: Massachusetts age-standardized death rates by two week period and ZCTA % population of color, 2020 (solid) and 2015–2019 (dotted), Jan 8–April 14

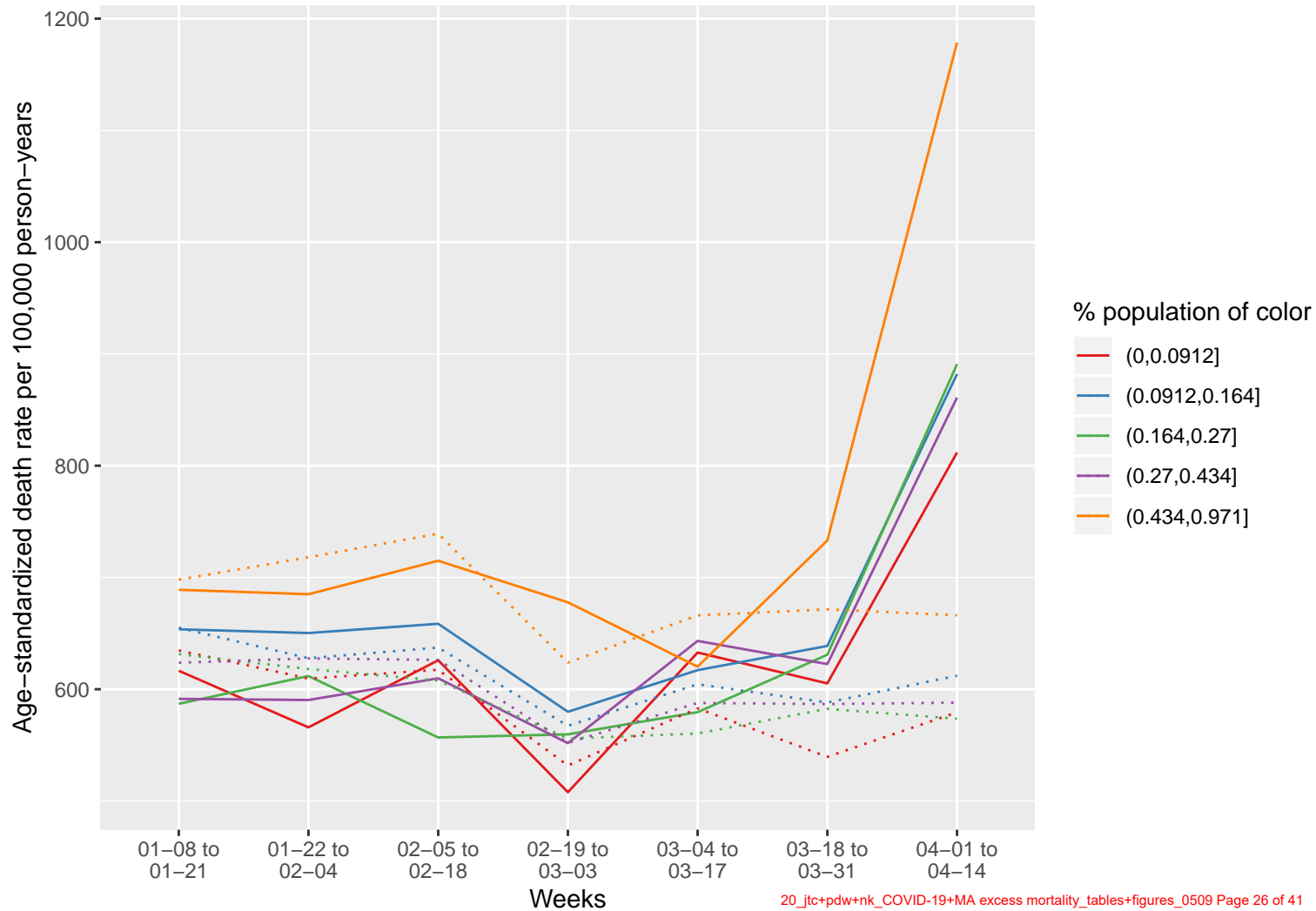


Figure 3a: Massachusetts age-standardized mortality rate differences by two week period and ZCTA % poverty, 2020 vs. 2015–2019, Jan 8–April 14

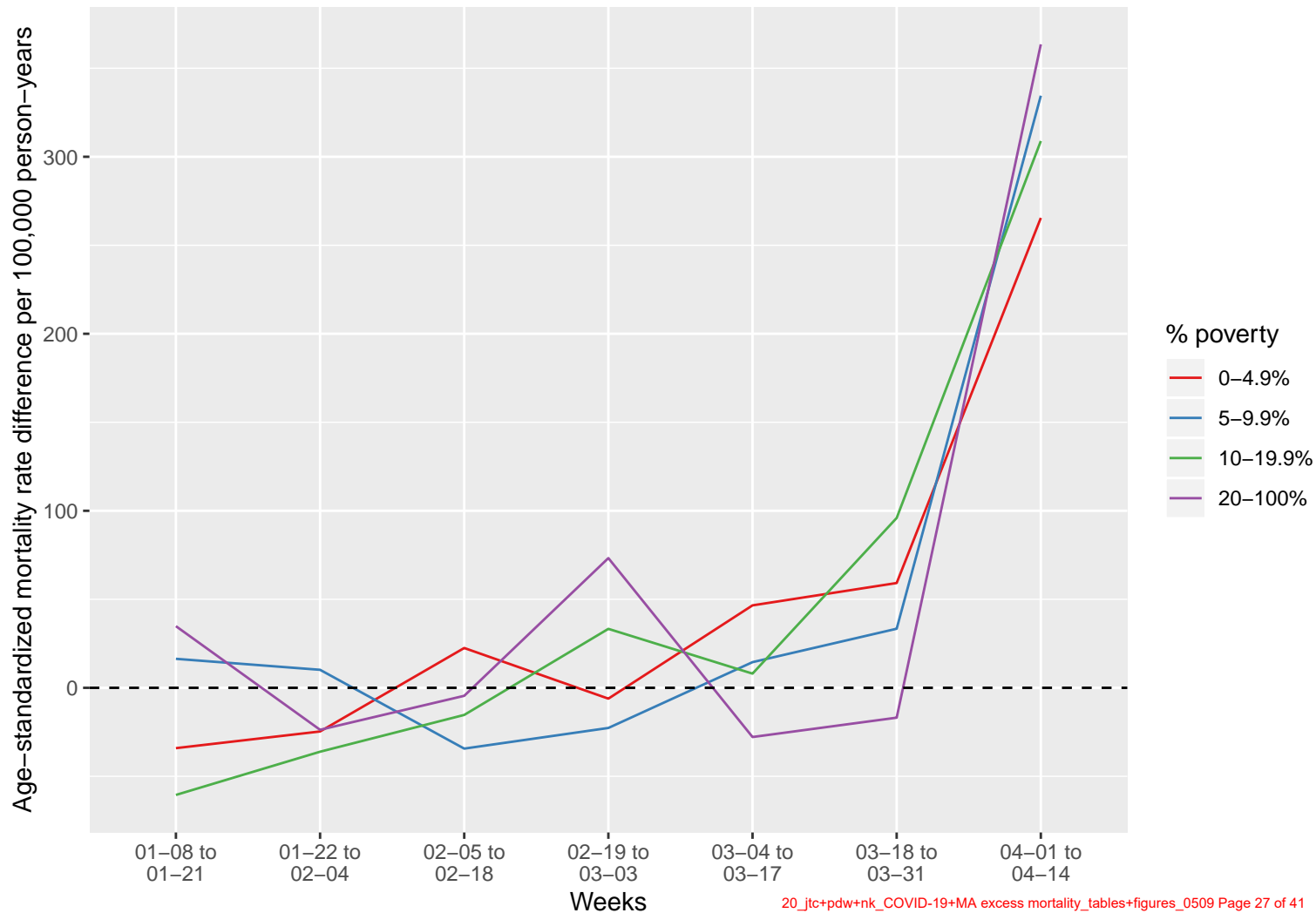


Figure 3b: Massachusetts age-standardized mortality rate differences by two week period and ZCTA % crowding, 2020 vs. 2015–2019, Jan 8–April 14

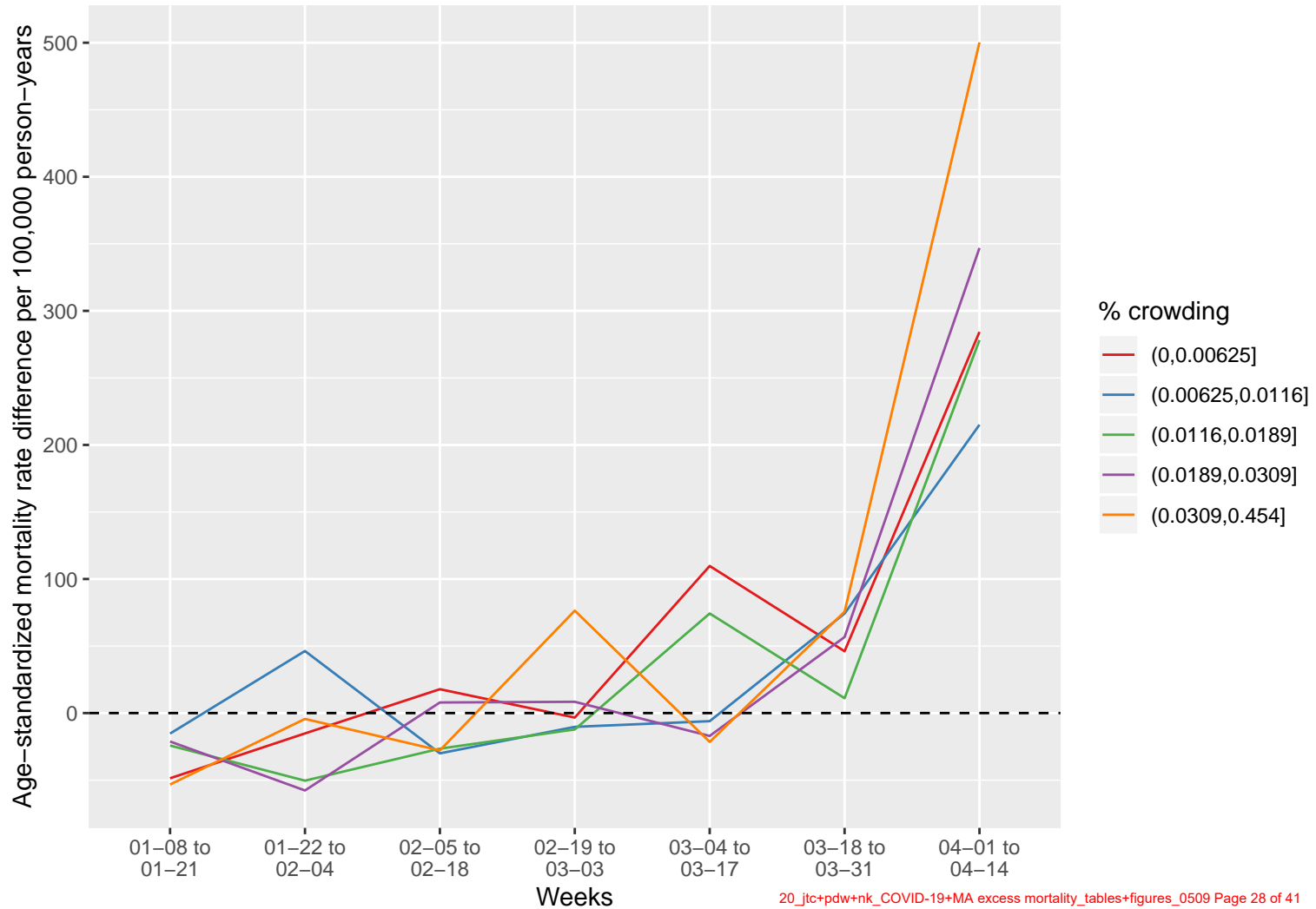




Figure 3c: Massachusetts age-standardized mortality rate differences by two week period and ZCTA ICE, 2020 vs. 2015–2019, Jan 8–April 14

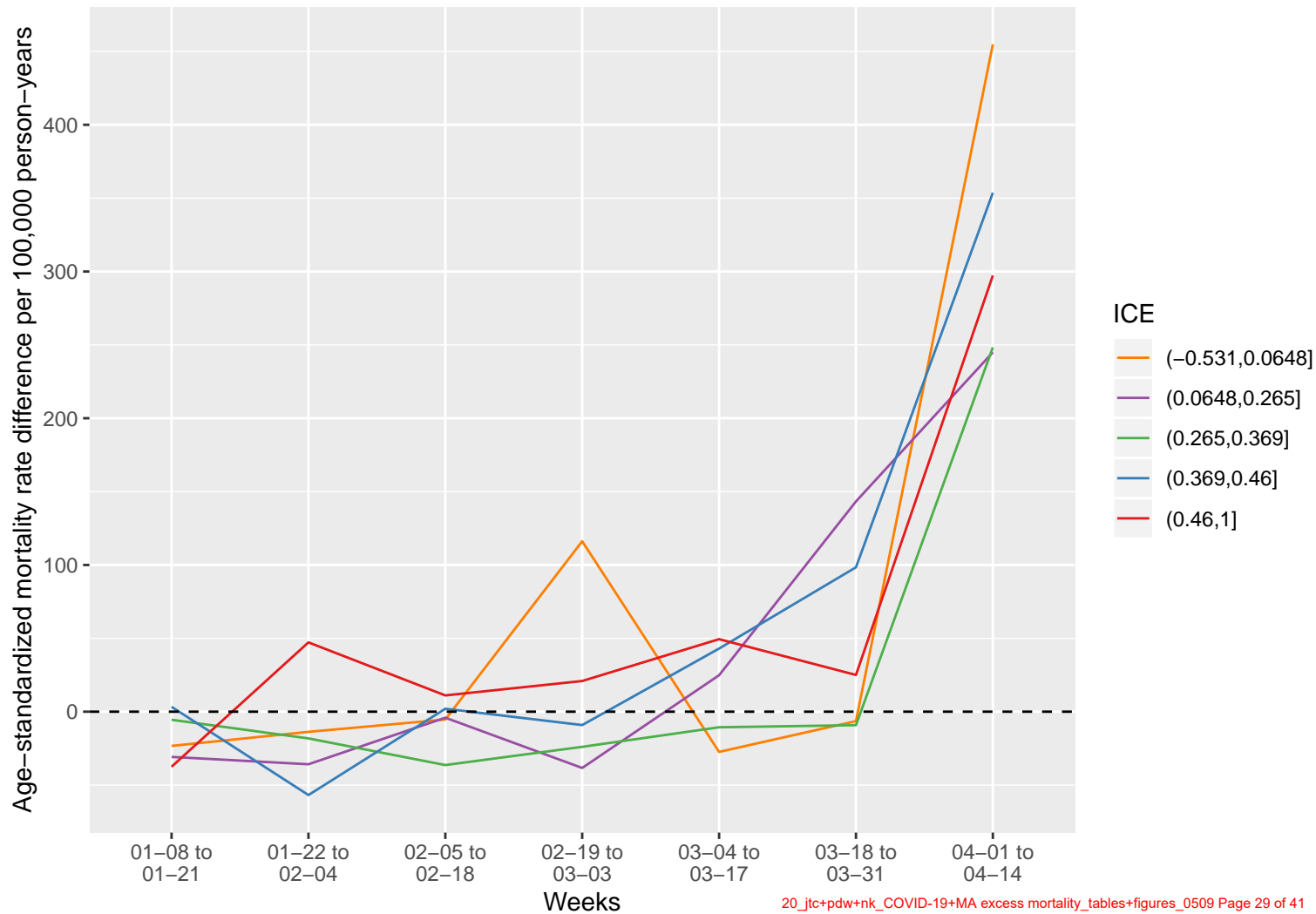


Figure 3d: Massachusetts age-standardized mortality rate differences by two week period and ZCTA % black population, 2020 vs. 2015–2019, Jan 8–April 14

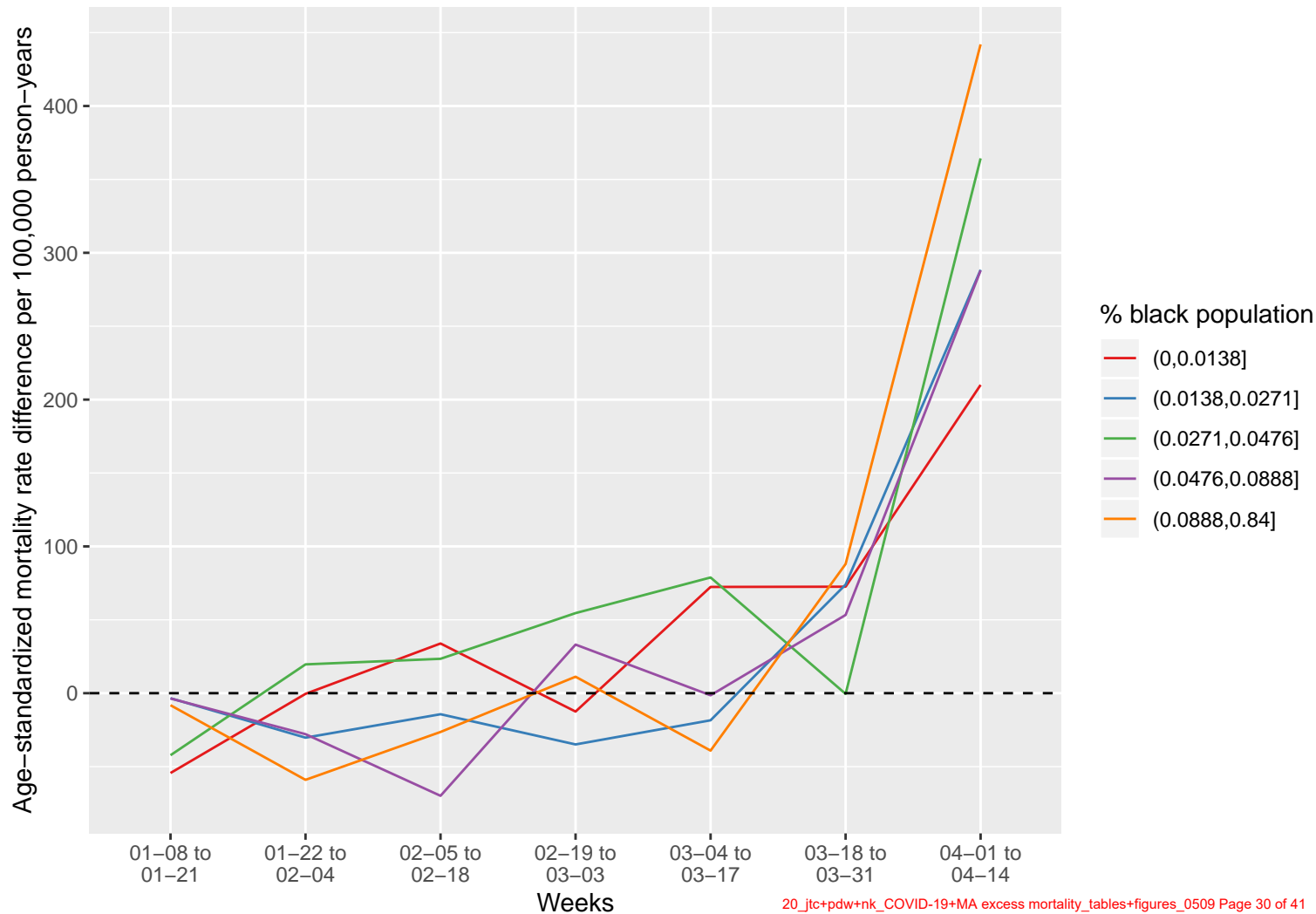


Figure 3e: Massachusetts age-standardized mortality rate differences by two week period and ZCTA % population of color, 2020 vs. 2015–2019, Jan 8–April 14

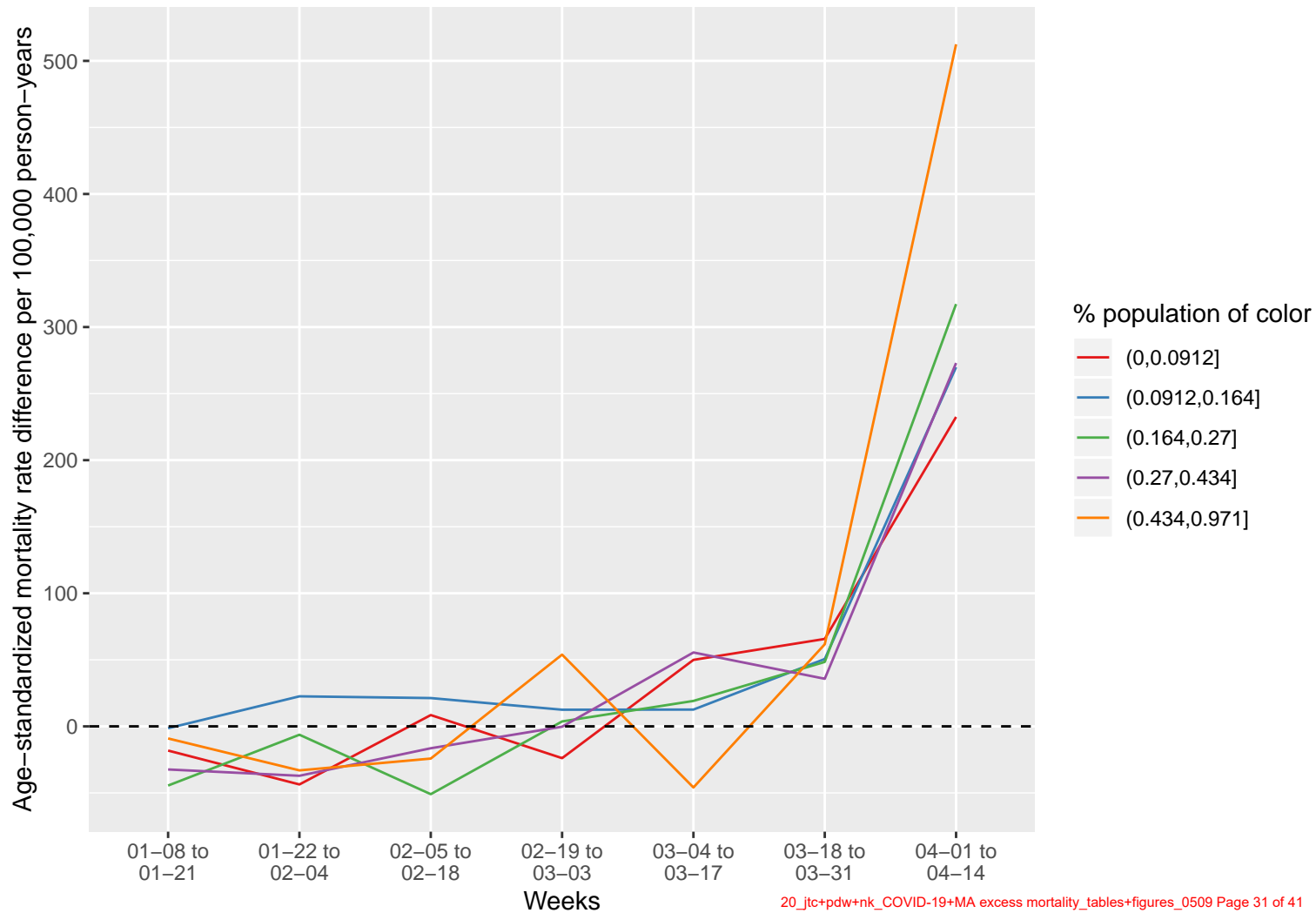


Figure 4a: Massachusetts age-standardized death rates by two-week period and city/town % poverty, 2020 (solid) and 2015–2019 (dotted), Jan 8–April 14

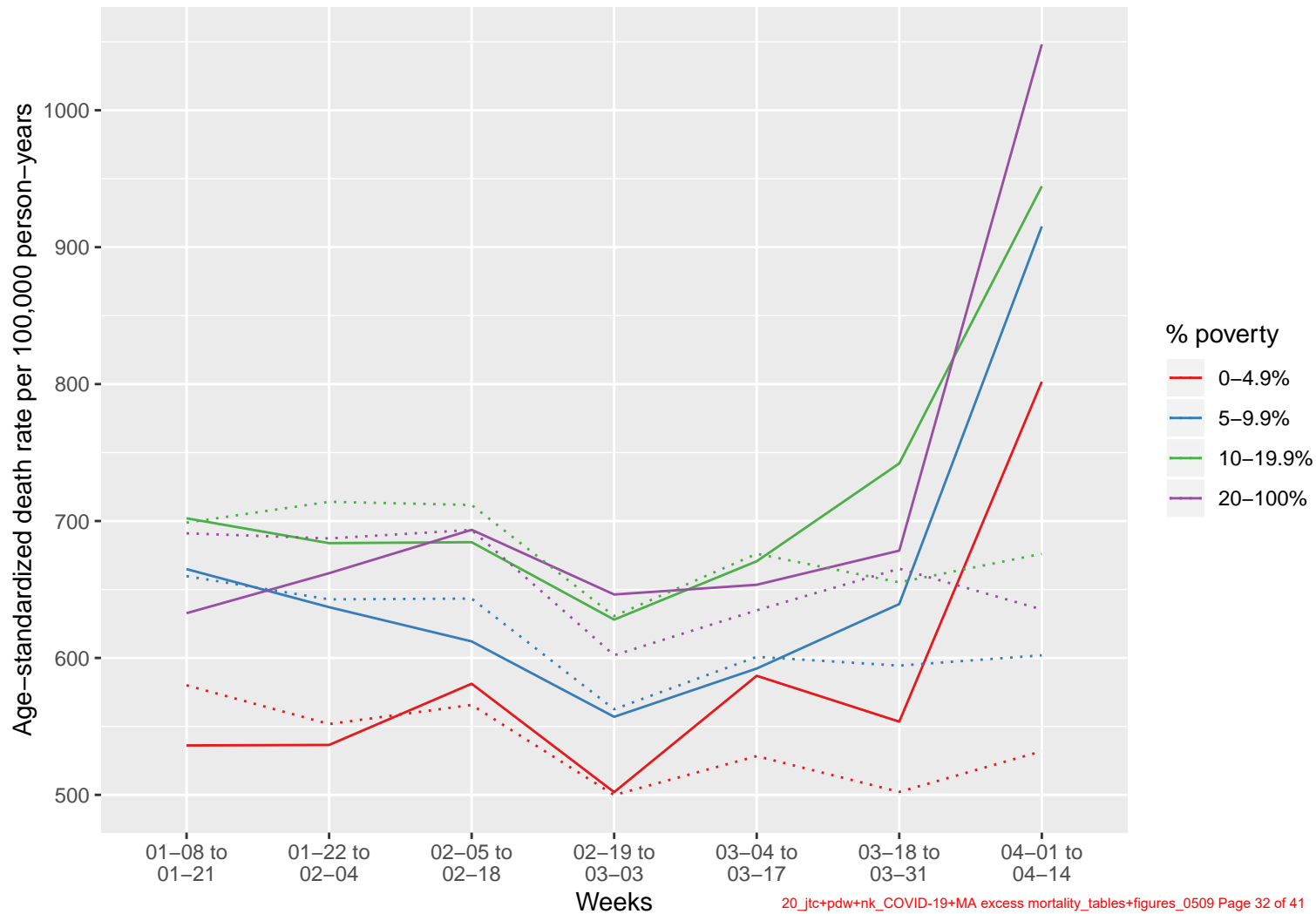


Figure 4b: Massachusetts age-standardized death rates by two-week period and city/town % crowding, 2020 (solid) and 2015–2019 (dotted), Jan 8–April 14

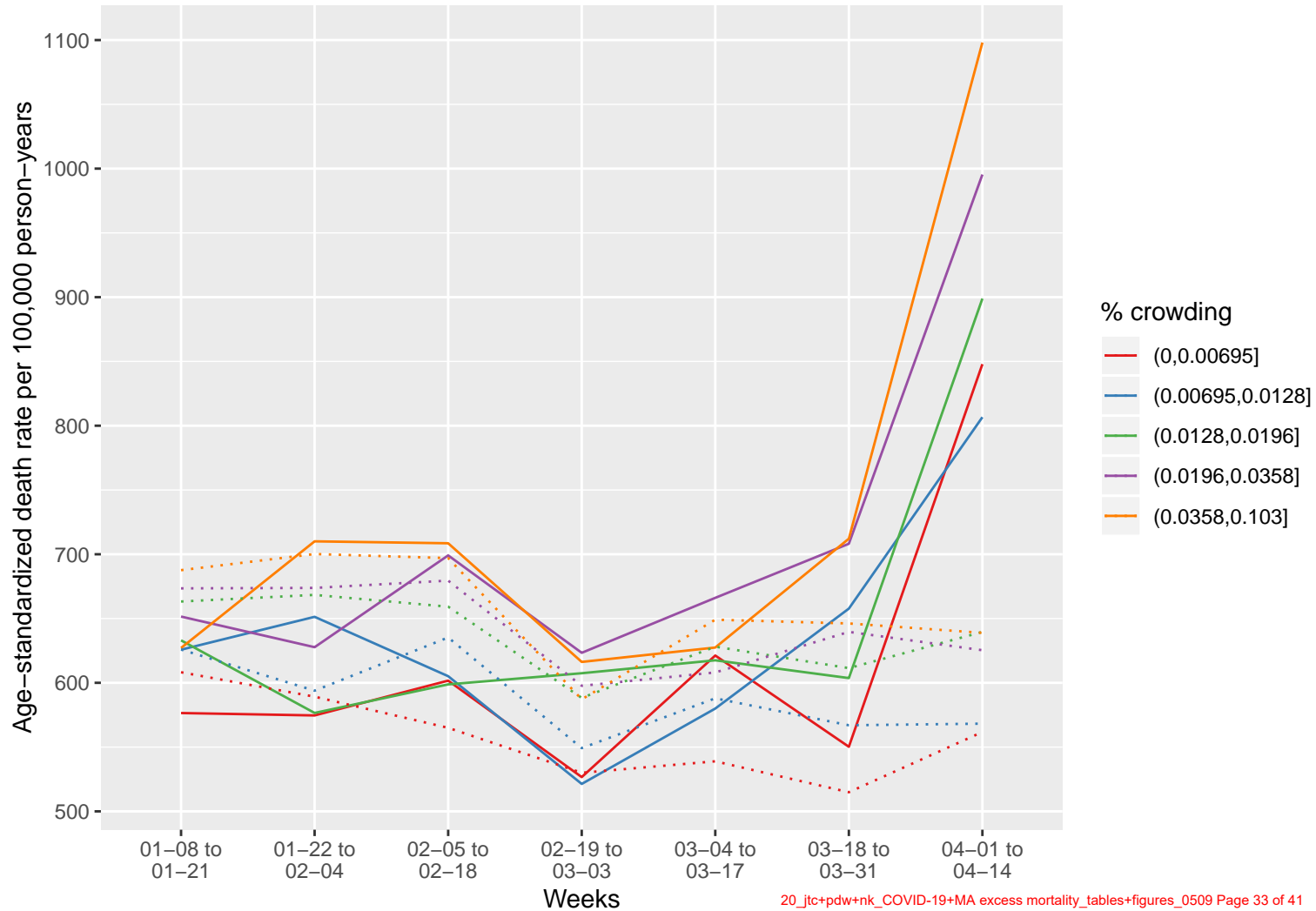


Figure 4c: Massachusetts age-standardized death rates by two-week period and city/town ICE, 2020 (solid) and 2015–2019 (dotted), Jan 8–April 14

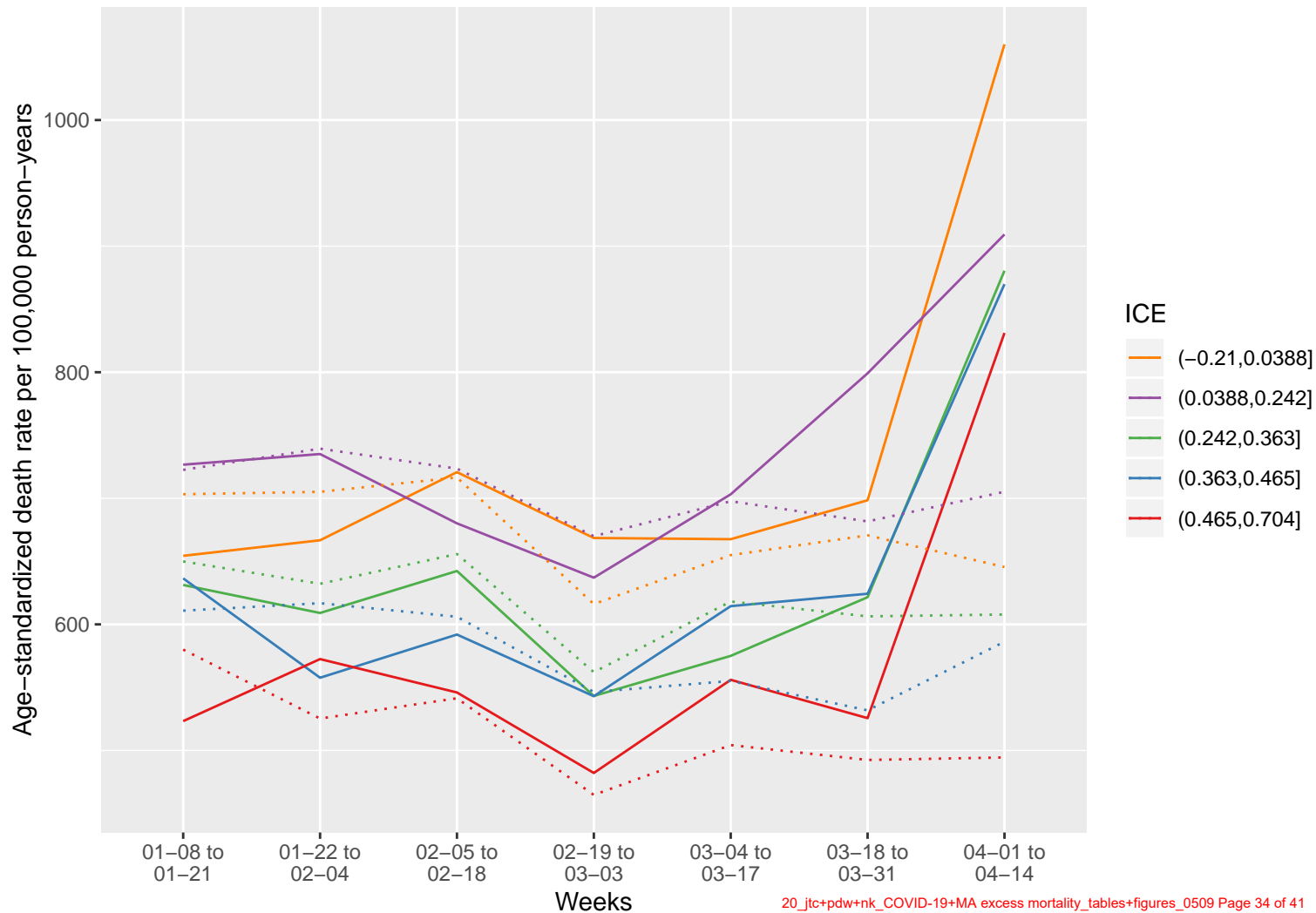


Figure 4d: Massachusetts age-standardized death rates by two-week period and city/town % black population, 2020 (solid) and 2015–2019 (dotted), Jan 8–April 14

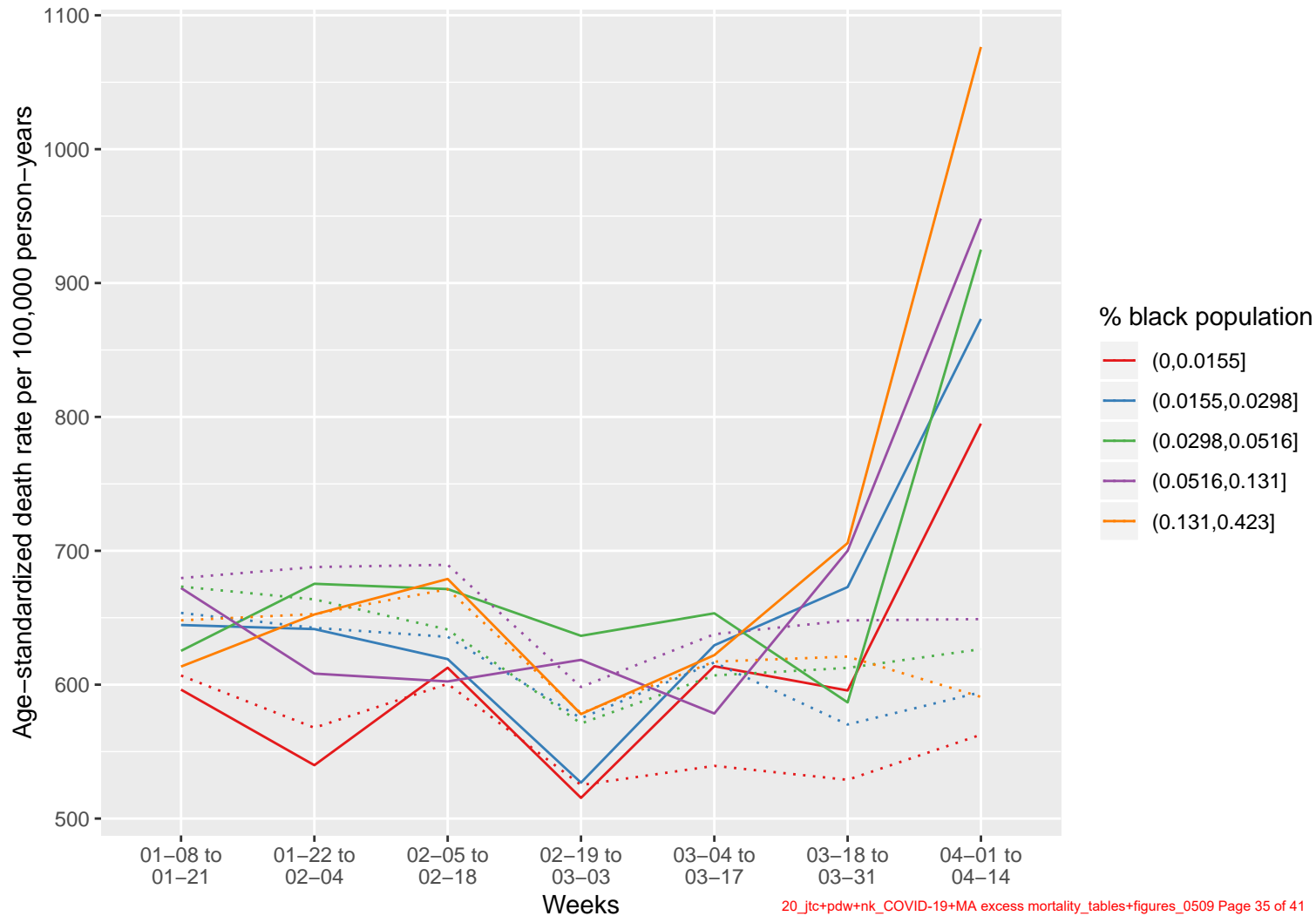


Figure 4e: Massachusetts age-standardized death rates by two-week period and city/town % population of color, 2020 (solid) and 2015–2019 (dotted), Jan 8–April 14

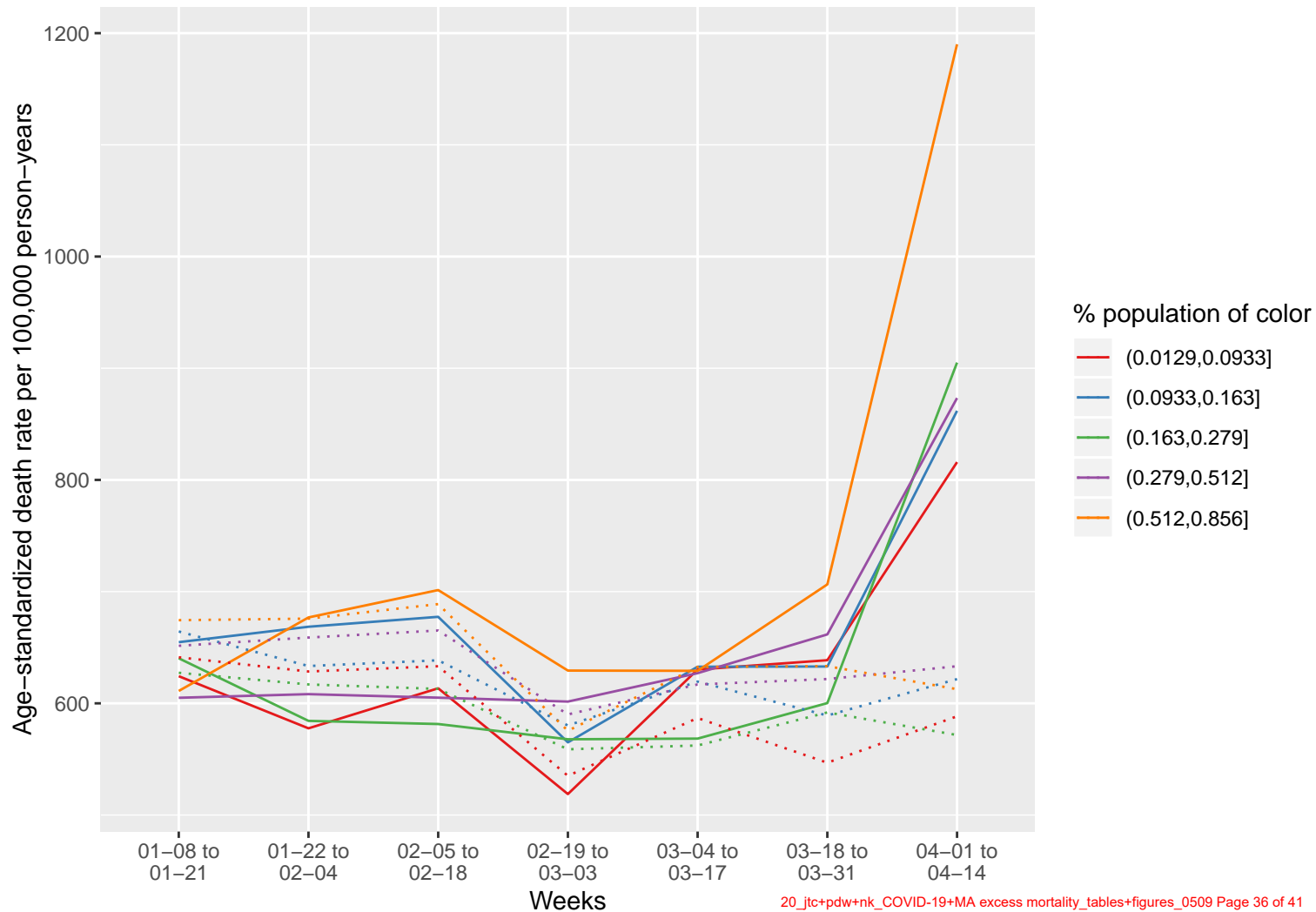




Figure 5a: Massachusetts weekly age-standardized mortality rate differences by two-week period and city/town % poverty, 2020 vs. 2015–2019, Jan 8–April 14

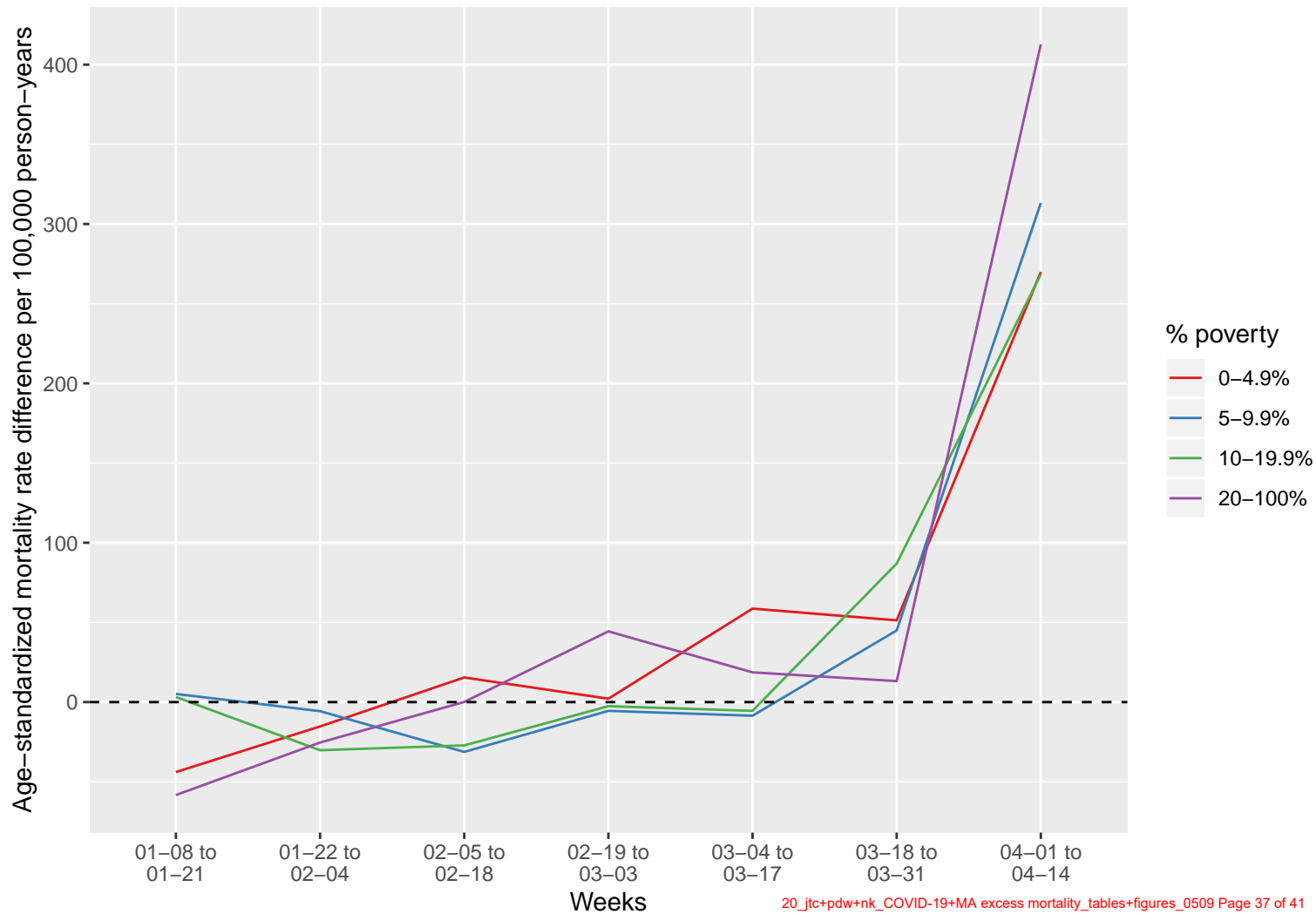


Figure 5b: Massachusetts weekly age-standardized mortality rate differences by two-week period and city/town % crowding, 2020 vs. 2015–2019, Jan 8–April 14

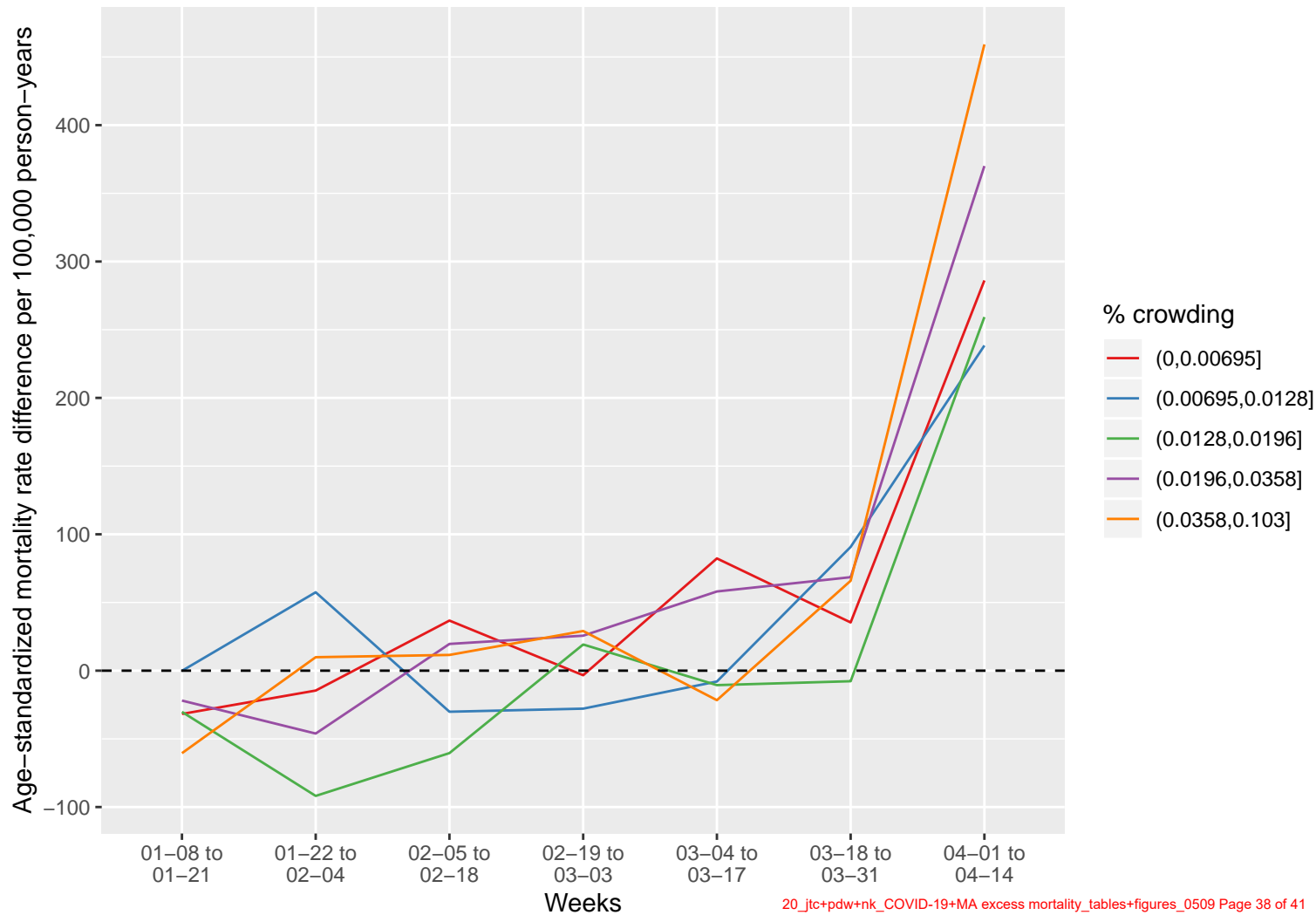


Figure 5c: Massachusetts weekly age-standardized mortality rate differences by two-week period and city/town ICE, 2020 vs. 2015–2019, Jan 8–April 14

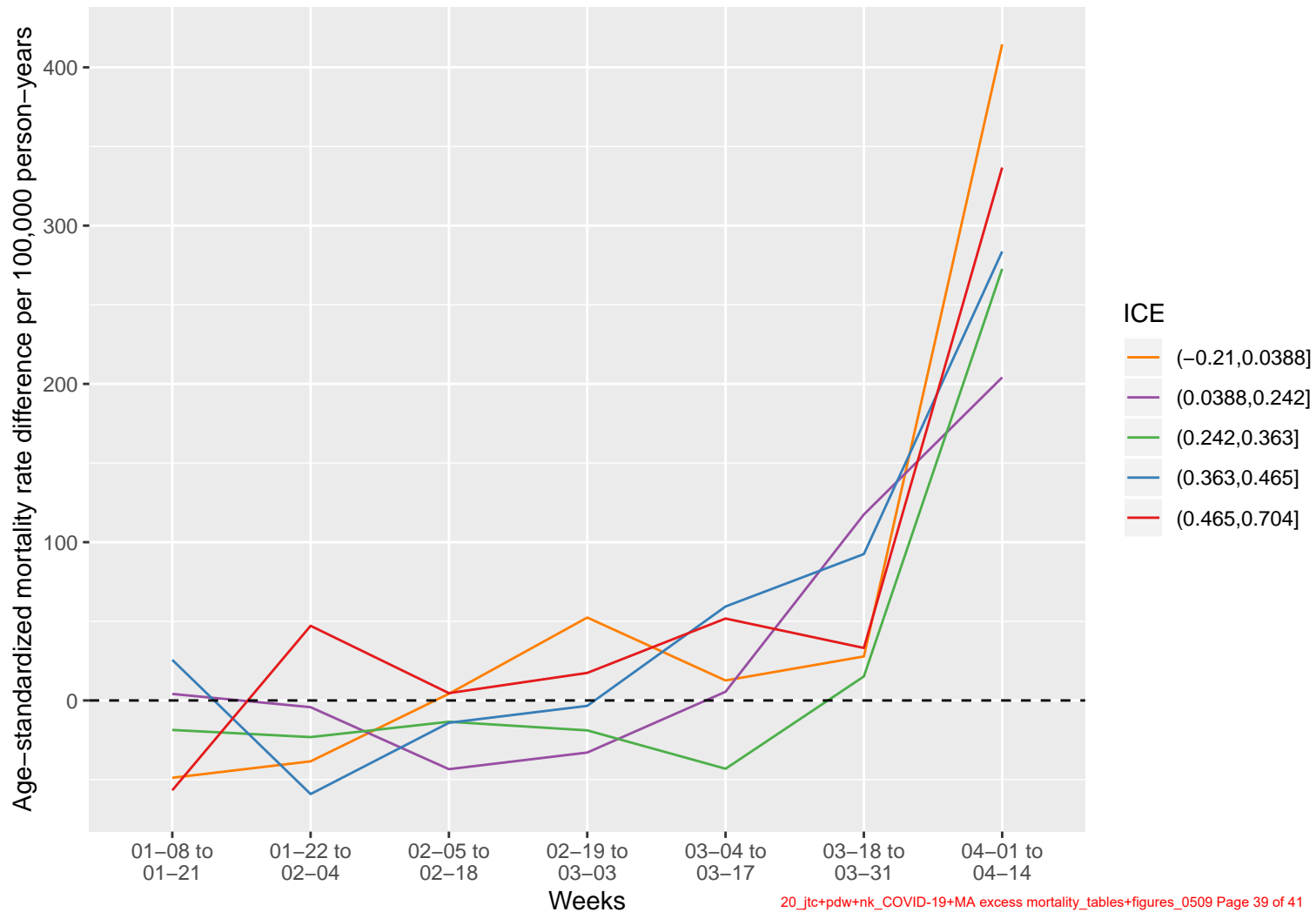


Figure 5d: Massachusetts weekly age-standardized mortality rate differences by two-week period and city/town % black population, 2020 vs. 2015–2019, Jan 8–April 14

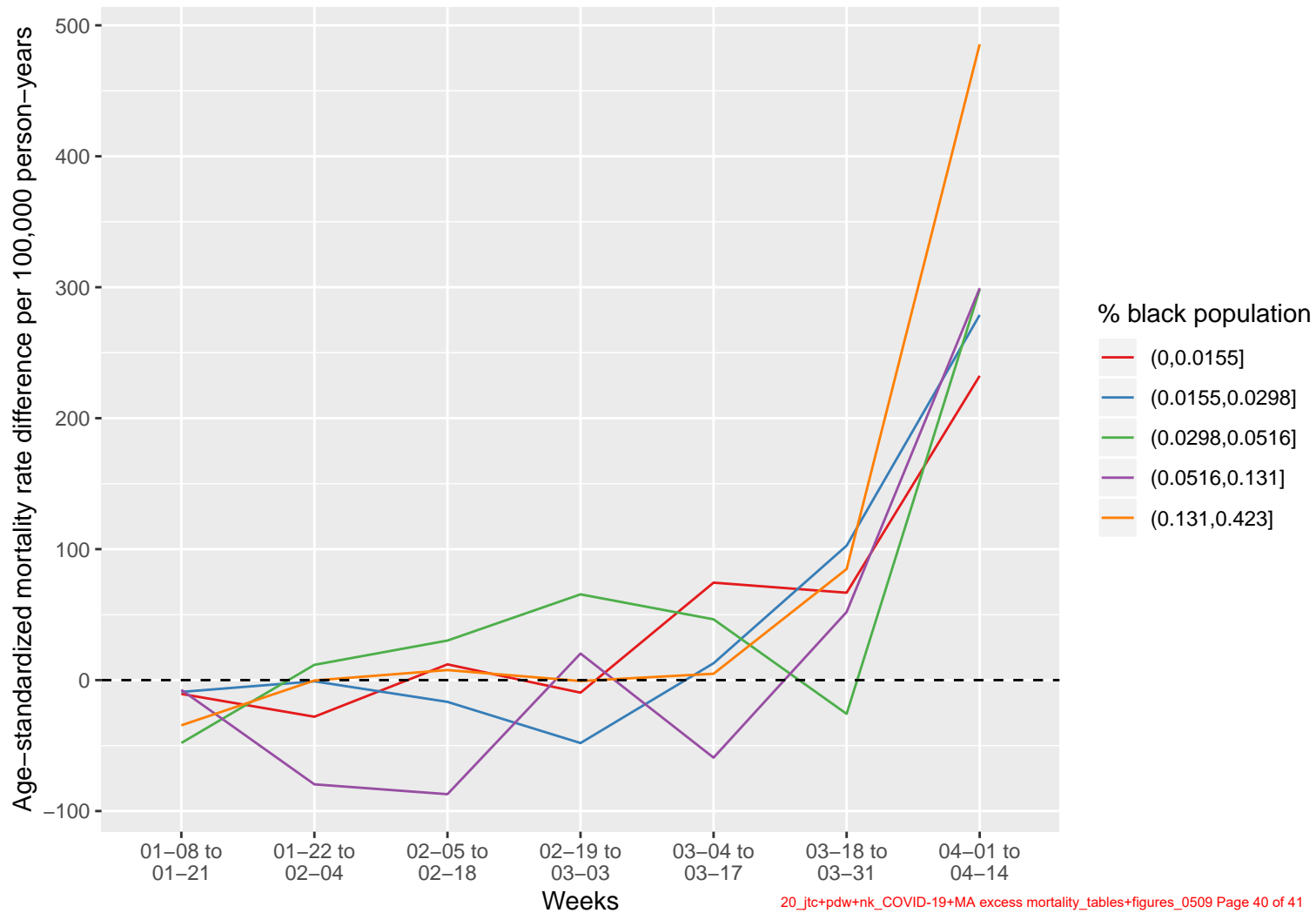


Figure 5e: Massachusetts weekly age-standardized mortality rate differences by two-week period and city/town % population of color, 2020 vs. 2015–2019, Jan 8–April 14

