

**Regional Variations in Italy's COVID-19 death toll:
An Analysis of Excess Mortality and Associated Factors from 2020 to 2021**

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Supplemental Material

Figure S-1. Map of Italy's regions and statistical macro-regions. Notes: Northwestern Italy includes Piedmont, Aosta Valley, Lombardy, and Liguria; Northeastern Italy includes the two autonomous provinces of Trento and Bolzano (Trentino-South Tyrol), Veneto, Friuli-Venezia Giulia, and Emilia-Romagna; Central Italy includes Tuscany, Umbria, Marche, and Lazio; Southern and Insular Italy includes Abruzzo, Molise, Campania, Apulia, Basilicata, Calabria, Sicily, and Sardinia.



Figure S-2. Weekly excess deaths per 100,000 population by Italy's macro-region, 2020–2021.

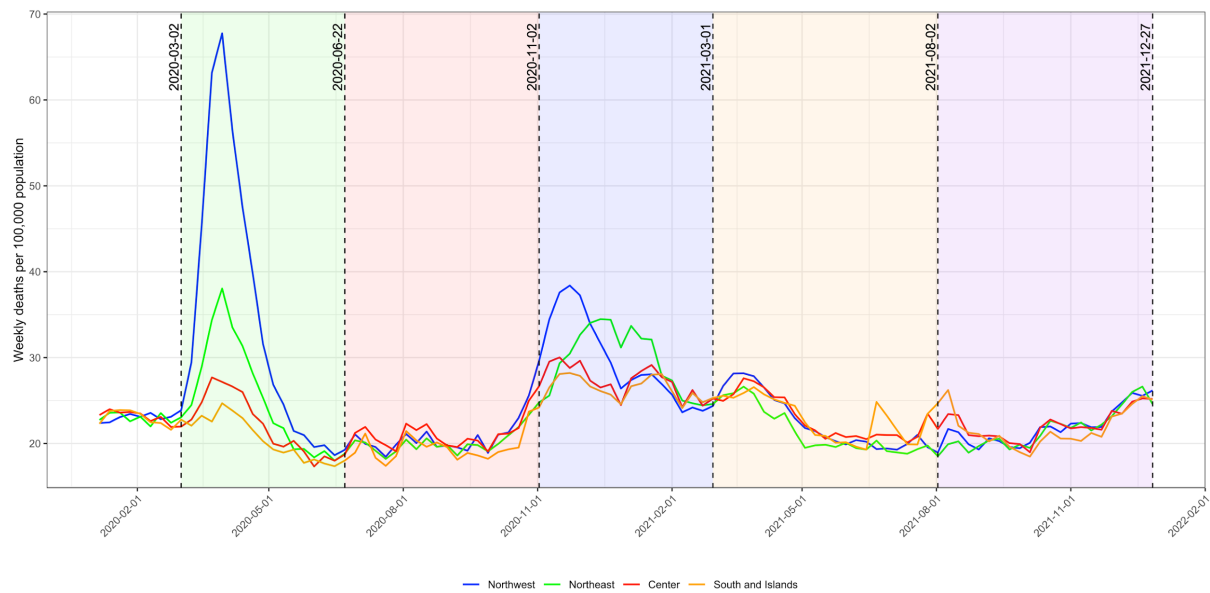


Figure S-3. Weekly excess deaths per 100,000 population by Italy's macro-region, 2020–2021, as compared to the average rates calculated over the period 2015–2019.

Notes: The gray lines represent the annual rates in each of the years from 2015 to 2019 in the corresponding region.

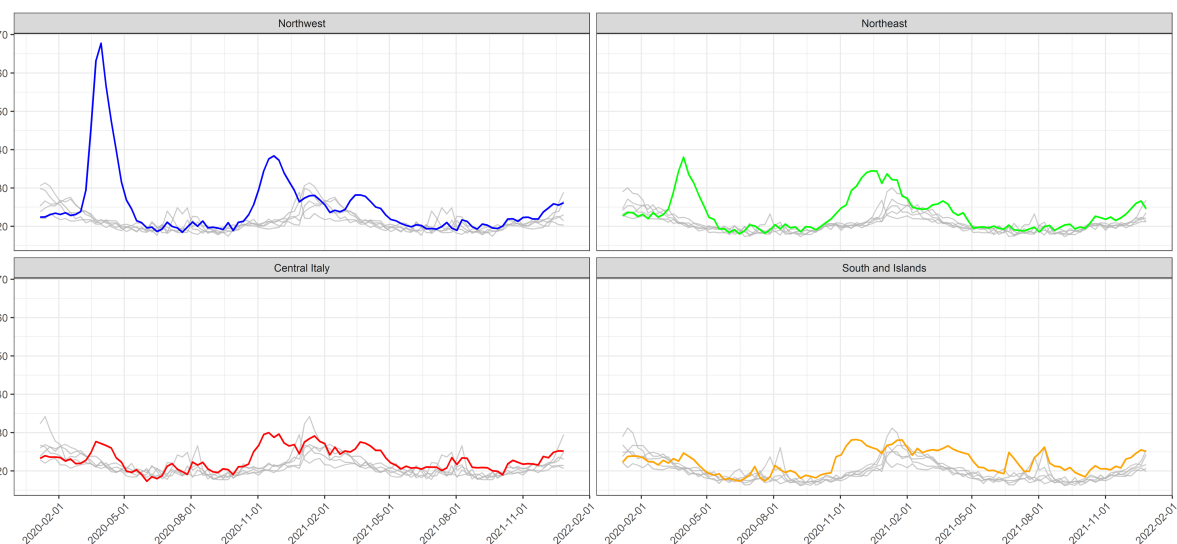


Figure S-4. Cumulative percentage of fully vaccinated individuals by region and age group, Italy, 2020–2021. Panel A: Under age 40. Panel B: Age 40–59. Panel C: Age 60–79. Panel D: Age 80 and older.

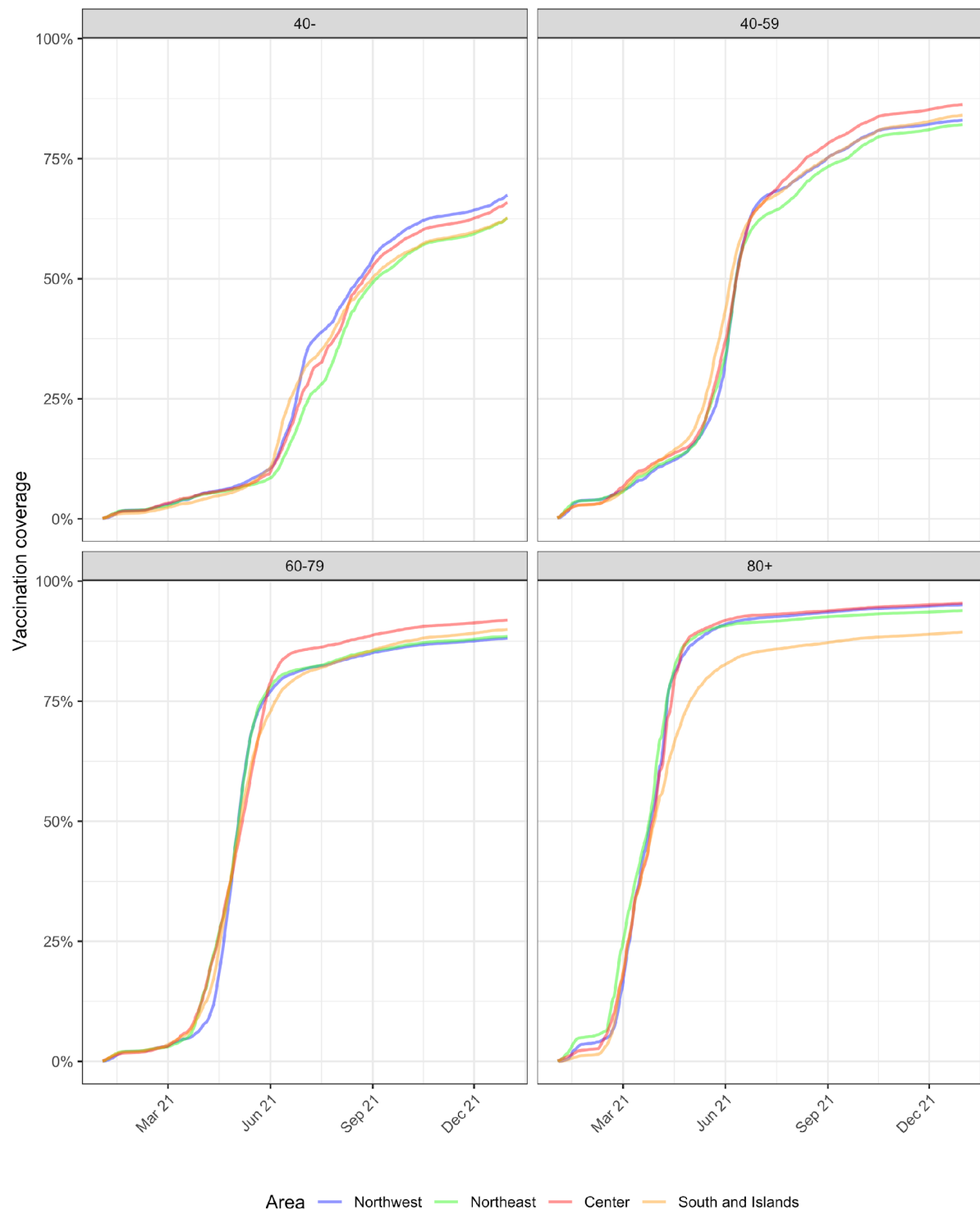


Table S-1. COVID-19 deaths as a percentage of excess mortality by Italy's macro-region, 2020–2021

Area	Period 1: Mar–Jun 2020	Period 2: June–Oct 2020	Period 3: Nov 2020– Feb 2021	Period 4: Mar–Jul 2021	Period 5: Aug–Dec 2021	Entire period
Northwestern Italy	60.9	55.9	88.9	121.0	49.3	74.4
Northeastern Italy	76.3	38.7	102.0	140.0	63.2	92.0
Central Italy	128.0	21.3	98.8	106.0	49.0	87.9
Southern and Insular Italy	74.8	13.5	80.0	73.4	33.0	61.9
<i>Italy</i>	<i>67.6</i>	<i>28.4</i>	<i>91.5</i>	<i>99.5</i>	<i>43.8</i>	<i>76.4</i>