

Supplementary appendix

Covariate preparation

Supplementary Table 1 lists the predictive covariates used to estimate baseline mortality over the study time period, 2015-2020.

Supplementary Table 1: Summary of predictive covariates fitted in the model for baseline mortality

Covariate	Source	Resolution	Years covered
Total fertility rate	Istat ¹	Province, year	2015-2018
First quarter unemployment, age 15 and above	Istat ¹	Province, year, sex	2015-2019
Proportion of eligible households receiving at-home social services	Istat ¹	Province, year	2015-2017
Proportion of households with taxable annual income below 10,000 Euros	Istat ¹	Commune, year	2015-2018
Average driving time to the nearest health facility	Malaria Atlas Project ³	1 km x 1km (gridded)	Synoptic
Average elevation of residence	US Geological Survey ²	15 arc-second (gridded)	Synoptic
Mean daily temperature	Meteostat ^{4,5}	Point location, day	2015-2020

Synoptic and single-year covariates were used across all years, while time-varying covariates not available for the final years of the time series were projected forwards by replicating values from the final observed year of data. Covariates observed at a more detailed spatial resolution than provinces were aggregated to the province level using a population-weighted mean across units within a province.

Supplementary Table 2 lists justifications for each of the seven predictive covariates included in the analysis.

Supplementary Table 2: Justification for covariate inclusion

Covariate	Justification
Total fertility rate	The Global Burden of Disease cross-national systematic analysis identifies the total fertility rate as one of three highly-predictive covariates for all-cause mortality, ⁶ along with educational attainment and income.
First quarter unemployment, age 15 and above	A meta-analysis of 42 studies from primarily high-income countries found that unemployment was associated with increased risk of death among individuals aged 65 and below. ⁷
Proportion of eligible households receiving at-home social services	Proxy for the uptake of social welfare programs across provinces and years. An analysis of OECD data found that increased social welfare spending per capita was associated with reductions in age-standardized all-cause mortality, after adjusting for country-specific factors, ⁸ although the association between social welfare spending and health outcomes may vary based on the analytical framework used. ⁹
Proportion of households with taxable annual income below 10,000 Euros	Proxy for variation in household income across provinces. A Danish cohort study found that household income was associated with all-cause mortality rates after adjusting for individual risk factors. ¹⁰ The Global Burden of Disease Study identifies income as one of three highly-predictive covariates for all-cause mortality. ⁶
Average driving time to the nearest health facility	An observational study in England found that greater distance to hospitals was associated with increased mortality for patients with medical emergencies. ¹¹
Average elevation of residence	Population-based ecological studies from the United States, Greece, and Switzerland, among other countries, suggest that increased altitude may be associated with lower mortality from cardiovascular disease and stroke, but higher mortality from COPD and lower respiratory infection. ¹²
Mean daily temperature	A meta-analysis of 15 studies, primarily in high-income settings, identified a significant association between extreme temperature intervals and all-cause mortality. ¹³

Weekly temperature covariate

Point estimates of daily temperature were downloaded for the three most populous pixels in each province using the Meteostat API. Because temperature was not recorded for all time periods and locations, the following process was used to fill temperatures across all provinces and weeks in the time series:

1. Find average weekly temperatures across all observed days by year, week, and observed location.
2. Interpolate by week. In cases where 3 consecutive weeks or fewer are missing between observed temperature values in a location, estimate missing temperatures by interpolating between the nearest observed weeks
3. Aggregate by province. For each province, year, and week of the year, average available observation across the three sampled locations.
4. In rare instances where all observations for a province were missing for a given province, year, and week, temperature was filled with recorded observations from neighboring provinces with a similar elevation and level of solar exposure.

Additional covariate preparation information and analytical code can be accessed online at <https://github.com/njhenry/covidemr>.

Model validation

See the Methods section for an overview of the model validation process. We compared predictive validity metrics across six model specifications, denoted A through G. Each model specification was fit under two sets of conditions. For in-sample testing, we fit each model type using the full baseline mortality dataset from January 2015 through February 2020, and then compared estimates of underlying mortality rates with the observed data. However, the resulting in-sample metrics for goodness of fit can mask model overfitting, allowing overly flexible models to follow spurious local trends in the data.

To generate more robust estimates of model predictive validity, we also conducted out-of-sample testing that mimicked the data generation process for all-cause mortality data under a hypothetical baseline where no mortality shock occurred in 2020. Five data holdouts were created, where each holdout was missing observations from March through December in one of the five baseline years 2015-2019. We then fit each model specification based on all remaining observations, and then generated predictive validity metrics by comparing mortality rate estimates and observed data from only the held-out weeks.

As described in the Methods section, when the number of observed outcomes is low, it may be advantageous to aggregate the results across multiple dimensions of interest before generating predictive validity estimates. For this analysis, all predictive validity metrics were generated for individual observations (disaggregated by province, age group, year, and week) as well as grouped mortality rates across each province-year.

Supplementary Tables 3 and 4 report in-sample predictive validity metrics for the six model specifications when compared by province-age-year-week and by province-year groupings, respectively. Supplementary Tables 5 and 6 report out-of-sample predictive validity metrics for the six model specifications when compared by province-age-year-week and by province-year groupings, respectively. For all comparisons, root mean squared error, squared error relative to a simple mean of all observations, and squared error relative to a simpler model that uses the mean observed mortality rate for each age group were generated. We also report empirical coverage of the 50%, 80%, 90%, 95%, and 99% uncertainty intervals of each model type. Because all models are run by sex, sex-specific results as well as averages across male and female models are reported.

Supplementary Table 3: In-sample predictive validity metrics comparing model estimates to individual data observations. RMSE: root mean squared error. RSE: relative squared error.

Model Specification	Number of Fourier terms	Seasonality fit separately by:	Sex	RMSE	RSE	RSE compared to age-specific mean	50% UI	80% UI	90% UI	95% UI	99% UI
A	3	Age, province	Male	9.774E-04	0.1571	0.8612	0.6174	0.8629	0.9351	0.9686	0.9929
A	3	Age, province	Female	5.723E-04	0.0913	0.8667	0.6335	0.8683	0.9372	0.9692	0.9924
A	3	Age, province	(Average)	7.748E-04	0.1242	0.8639	0.6255	0.8656	0.9362	0.9689	0.9927
B	2	Age, province	Male	9.806E-04	0.1581	0.8667	0.6182	0.8642	0.9365	0.9696	0.9932
B	2	Age, province	Female	5.744E-04	0.0920	0.8731	0.6344	0.8699	0.9392	0.9701	0.9928
B	2	Age, province	(Average)	7.775E-04	0.1250	0.8699	0.6263	0.8671	0.9379	0.9699	0.9930
C	1	Age, province	Male	9.908E-04	0.1614	0.8849	0.6080	0.8546	0.9281	0.9639	0.9910
C	1	Age, province	Female	5.866E-04	0.0960	0.9107	0.6223	0.8584	0.9295	0.9635	0.9895
C	1	Age, province	(Average)	7.887E-04	0.1287	0.8978	0.6151	0.8565	0.9288	0.9637	0.9903
D	3	Province	Male	9.942E-04	0.1625	0.8910	0.6085	0.8545	0.9298	0.9652	0.9917
D	3	Province	Female	5.850E-04	0.0954	0.9056	0.6263	0.8639	0.9335	0.9668	0.9916
D	3	Province	(Average)	7.896E-04	0.1290	0.8983	0.6174	0.8592	0.9317	0.9660	0.9917
E	2	Province	Male	9.945E-04	0.1626	0.8915	0.6067	0.8531	0.9283	0.9640	0.9914
E	2	Province	Female	5.820E-04	0.0944	0.8964	0.6300	0.8683	0.9375	0.9694	0.9927
E	2	Province	(Average)	7.882E-04	0.1285	0.8939	0.6184	0.8607	0.9329	0.9667	0.9921
F	1	Province	Male	9.997E-04	0.1643	0.9010	0.6028	0.8498	0.9250	0.9617	0.9906
F	1	Province	Female	5.945E-04	0.0985	0.9353	0.6246	0.8624	0.9327	0.9662	0.9913
F	1	Province	(Average)	7.971E-04	0.1314	0.9181	0.6137	0.8561	0.9288	0.9639	0.9909
G	(No Fourier term)	N/A	Male	1.005E-03	0.1661	0.9105	0.5995	0.8479	0.9242	0.9610	0.9903
G	(No Fourier term)	N/A	Female	6.021E-04	0.1011	0.9596	0.6151	0.8526	0.9264	0.9616	0.9890
G	(No Fourier term)	N/A	(Average)	8.036E-04	0.1336	0.9350	0.6073	0.8502	0.9253	0.9613	0.9897

Supplementary Table 4: In-sample predictive validity metrics comparing model estimates to observed data by province-year grouping. RMSE: root mean squared error. RSE: relative squared error.

Model Specification	Number of Fourier terms	Seasonality fit separately by:	Sex	RMSE	RSE	50% UI	80% UI	90% UI	95% UI	99% UI
A	3	Age, province	Male	2.299E-05	0.2855	0.6426	0.9071	0.9577	0.9788	0.9943
A	3	Age, province	Female	2.547E-05	0.2729	0.6242	0.8929	0.9482	0.9725	0.9897
A	3	Age, province	(Average)	2.423E-05	0.2792	0.6334	0.9000	0.9530	0.9757	0.9920
B	2	Age, province	Male	2.268E-05	0.2778	0.6730	0.9210	0.9654	0.9831	0.9948
B	2	Age, province	Female	2.525E-05	0.2683	0.6532	0.9072	0.9590	0.9768	0.9920
B	2	Age, province	(Average)	2.396E-05	0.2730	0.6631	0.9141	0.9622	0.9800	0.9934
C	1	Age, province	Male	2.453E-05	0.3250	0.6064	0.8722	0.9363	0.9618	0.9848
C	1	Age, province	Female	2.768E-05	0.3225	0.5764	0.8487	0.9222	0.9527	0.9791
C	1	Age, province	(Average)	2.611E-05	0.3237	0.5914	0.8604	0.9292	0.9572	0.9819
D	3	Province	Male	2.332E-05	0.2937	0.6245	0.8980	0.9548	0.9780	0.9943
D	3	Province	Female	2.659E-05	0.2974	0.6203	0.8888	0.9501	0.9735	0.9916
D	3	Province	(Average)	2.495E-05	0.2956	0.6224	0.8934	0.9524	0.9757	0.9930
E	2	Province	Male	2.364E-05	0.3019	0.6117	0.8888	0.9489	0.9743	0.9925
E	2	Province	Female	2.584E-05	0.2809	0.6534	0.9131	0.9642	0.9813	0.9958
E	2	Province	(Average)	2.474E-05	0.2914	0.6325	0.9010	0.9565	0.9778	0.9941
F	1	Province	Male	2.443E-05	0.3223	0.5934	0.8625	0.9308	0.9626	0.9865
F	1	Province	Female	2.765E-05	0.3218	0.6027	0.8805	0.9463	0.9714	0.9884
F	1	Province	(Average)	2.604E-05	0.3220	0.5981	0.8715	0.9386	0.9670	0.9874
G	(No Fourier term)	N/A	Male	2.491E-05	0.3351	0.5690	0.8431	0.9233	0.9589	0.9854
G	(No Fourier term)	N/A	Female	2.862E-05	0.3446	0.5340	0.8234	0.9137	0.9491	0.9808
G	(No Fourier term)	N/A	(Average)	2.676E-05	0.3398	0.5515	0.8332	0.9185	0.9540	0.9831

Supplementary Table 5: Out-of-sample predictive validity metrics comparing model estimates to individual data observations. RMSE: root mean squared error. RSE: relative squared error.

Model Specification	Number of Fourier terms	Seasonality fit separately by:	Sex	RMSE	RSE	RSE compared to age-specific mean	50% UI	80% UI	90% UI	95% UI	99% UI
A	3	Age, province	Male	9.756E-04	0.1727	0.9154	0.6172	0.8643	0.9364	0.9688	0.9931
A	3	Age, province	Female	5.683E-04	0.1004	0.9322	0.6370	0.8733	0.9409	0.9713	0.9937
A	3	Age, province	(Average)	7.720E-04	0.1365	0.9238	0.6271	0.8688	0.9387	0.9700	0.9934
B	2	Age, province	Male	9.710E-04	0.1710	0.9067	0.6257	0.8711	0.9406	0.9715	0.9942
B	2	Age, province	Female	5.660E-04	0.0996	0.9245	0.6441	0.8791	0.9458	0.9741	0.9940
B	2	Age, province	(Average)	7.685E-04	0.1353	0.9156	0.6349	0.8751	0.9432	0.9728	0.9941
C	1	Age, province	Male	9.723E-04	0.1715	0.9092	0.6195	0.8657	0.9370	0.9694	0.9931
C	1	Age, province	Female	5.733E-04	0.1021	0.9484	0.6402	0.8752	0.9416	0.9716	0.9931
C	1	Age, province	(Average)	7.728E-04	0.1368	0.9288	0.6299	0.8705	0.9393	0.9705	0.9931
D	3	Province	Male	9.695E-04	0.1705	0.9040	0.6320	0.8736	0.9413	0.9723	0.9939
D	3	Province	Female	5.824E-04	0.1054	0.9787	0.6521	0.8848	0.9479	0.9755	0.9946
D	3	Province	(Average)	7.759E-04	0.1380	0.9414	0.6420	0.8792	0.9446	0.9739	0.9942
E	2	Province	Male	9.645E-04	0.1688	0.8946	0.6269	0.8708	0.9404	0.9709	0.9936
E	2	Province	Female	5.665E-04	0.0998	0.9262	0.6506	0.8830	0.9467	0.9742	0.9944
E	2	Province	(Average)	7.655E-04	0.1343	0.9104	0.6388	0.8769	0.9436	0.9725	0.9940
F	1	Province	Male	9.745E-04	0.1723	0.9134	0.6266	0.8700	0.9391	0.9705	0.9933
F	1	Province	Female	6.022E-04	0.1127	1.0465	0.6492	0.8815	0.9451	0.9740	0.9939
F	1	Province	(Average)	7.884E-04	0.1425	0.9799	0.6379	0.8758	0.9421	0.9723	0.9936
G	(No Fourier term)	N/A	Male	9.906E-04	0.1780	0.9437	0.6189	0.8652	0.9362	0.9686	0.9930
G	(No Fourier term)	N/A	Female	6.024E-04	0.1128	1.0471	0.6384	0.8727	0.9406	0.9709	0.9932
G	(No Fourier term)	N/A	(Average)	7.965E-04	0.1454	0.9954	0.6286	0.8689	0.9384	0.9697	0.9931

Supplementary Table 6: Out-of-sample predictive validity metrics comparing model estimates to observed data by province-year grouping. RMSE: root mean squared error. RSE: relative squared error.

Model Specification	Number of Fourier terms	Seasonality fit separately by:	Sex	RMSE	RSE	50% UI	80% UI	90% UI	95% UI	99% UI
A	3	Age, province	Male	2.306E-05	0.3643	0.6703	0.9239	0.9725	0.9874	0.9983
A	3	Age, province	Female	2.513E-05	0.3477	0.6656	0.9125	0.9648	0.9856	0.9969
A	3	Age, province	(Average)	2.410E-05	0.3560	0.6680	0.9182	0.9686	0.9865	0.9976
B	2	Age, province	Male	2.205E-05	0.3332	0.7201	0.9455	0.9798	0.9925	0.9990
B	2	Age, province	Female	2.433E-05	0.3259	0.6975	0.9325	0.9766	0.9900	0.9986
B	2	Age, province	(Average)	2.319E-05	0.3296	0.7088	0.9390	0.9782	0.9912	0.9988
C	1	Age, province	Male	2.298E-05	0.3618	0.6647	0.9188	0.9689	0.9835	0.9971
C	1	Age, province	Female	2.589E-05	0.3691	0.6503	0.9030	0.9602	0.9818	0.9947
C	1	Age, province	(Average)	2.444E-05	0.3654	0.6575	0.9109	0.9646	0.9827	0.9959
D	3	Province	Male	2.223E-05	0.3384	0.7303	0.9477	0.9832	0.9946	0.9993
D	3	Province	Female	2.679E-05	0.3953	0.7140	0.9455	0.9837	0.9934	0.9990
D	3	Province	(Average)	2.451E-05	0.3669	0.7222	0.9466	0.9834	0.9940	0.9992
E	2	Province	Male	2.254E-05	0.3479	0.7062	0.9410	0.9786	0.9922	0.9995
E	2	Province	Female	2.517E-05	0.3488	0.7001	0.9409	0.9815	0.9922	0.9992
E	2	Province	(Average)	2.385E-05	0.3484	0.7031	0.9410	0.9800	0.9922	0.9993
F	1	Province	Male	2.320E-05	0.3687	0.6892	0.9283	0.9715	0.9866	0.9971
F	1	Province	Female	2.876E-05	0.4553	0.6754	0.9201	0.9698	0.9873	0.9976
F	1	Province	(Average)	2.598E-05	0.4120	0.6823	0.9242	0.9706	0.9869	0.9974
G	(No Fourier term)	N/A	Male	2.605E-05	0.4647	0.6112	0.8916	0.9545	0.9825	0.9952
G	(No Fourier term)	N/A	Female	3.044E-05	0.5101	0.5934	0.8748	0.9456	0.9755	0.9946
G	(No Fourier term)	N/A	(Average)	2.824E-05	0.4874	0.6023	0.8832	0.9500	0.9790	0.9949

Based on out-of-sample predictive validity metrics by province-year grouping, as summarized in Supplementary Table 6, we selected specification B as the model type that was used in the final analysis. This model specification had the lowest root mean squared error across both male and female runs, with slightly conservative empirical coverage of the 95% and 99% uncertainty intervals. Out-of-sample predictive validity metrics did not strongly differentiate between the model specifications that included any seasonality terms. However, the model specification that included no seasonality term performed worst in terms of both in-sample and out-of-sample predictive validity.

Excess mortality time series estimation

When calculating a time series of excess mortality among small population groups, the cumulative effect of past mortality on the base population must be taken into account. This problem is most clearly illustrated under artificial conditions of a very high mortality rate. Imagine a population of 1,000 individuals that, under normal conditions, experiences a baseline mortality rate of 100 deaths per 1,000 person-weeks and predictably gains 100 new members at the end of each week. Under normal conditions, 100 individuals from the population would die and 100 new individuals would enter the population each week, resulting in a stable population week-to-week. Now, imagine an event that causes the mortality rate to increase to 900 deaths per 1,000 person-weeks. In the first week under these conditions, 900 individuals from the base population of 1,000 would die and 100 would be added, leading to a population of 200 entering the second week. In the second week, 180 of 200 individuals in the population would die. Although the standardized mortality ratio of this event compared to baseline is 9 across both weeks ($900/100$ and $180/20$), an analysis that mistakenly assumed a starting population of 1,000 in the second week would dramatically underestimate this ratio as 1.8 ($180/100$).

This analysis accounted for the effects of excess mortality on subsequent population denominators throughout the study weeks beginning on February 26, 2020. Population denominators listed by Istat for January 1, 2020 were used as the starting denominators for this time series. For each predictive posterior draw and week, calculated excess deaths were subtracted from the base population used as the denominator in the subsequent week. The cumulative effect of this correction is to avoid understating the toll of excess mortality over the study period due to a reduction in the base population.

Effect of mortality reductions on study findings

When considering age-specific excess mortality in Italy from 26 February 2020 through 26 May 2020, we identified 11 provinces where observed mortality for the 0-59 age group fell below the 95% uncertainty interval for baseline mortality, indicating significantly negative excess mortality. Among these provinces, the largest difference between observed and expected baseline deaths in the 0 to 59 age group is 29 fewer deaths (95% UI: 15 to 43 fewer deaths) in Caserta province, Campania. Additionally, five provinces were found to have significantly negative excess mortality for the 60 to 69 age group, and two provinces had significantly negative excess mortality for the 70 to 79 age group. Among the five unique provinces where significantly negative excess mortality was observed in older age groups, none were in the northern regions of Italy where most COVID-19 deaths were concentrated during March through May 2020, and which was the focus of our detailed analysis. These provinces and observed versus expected all-cause mortality totals are listed below in Supplementary Table 7.

Supplementary Table 7: Summary of province-age groupings with significant negative excess deaths during the study period. SMRs: standardized mortality ratios.

Age group	Macroregion	Region	Province	Observed deaths	Expected baseline	Excess deaths	SMRs
0 to 59	Insular	Sicilia	Palermo	223	248 (232 to 266)	-25 (-43 to -9)	0.90 (0.84 to 0.96)
0 to 59	Insular	Sicilia	Trapani	76	88 (80 to 97)	-12 (-21 to -4)	0.86 (0.78 to 0.95)
0 to 59	Northeast	Friuli-Venezia Giulia	Pordenone	46	51 (46 to 57)	-5 (-11 to 0)	0.89 (0.80 to 1.00)
0 to 59	Northeast	Veneto	Belluno	26	36 (32 to 40)	-10 (-14 to -6)	0.73 (0.64 to 0.82)
0 to 59	Northeast	Veneto	Padova	143	155 (145 to 166)	-12 (-23 to -2)	0.92 (0.86 to 0.99)
0 to 59	Northeast	Veneto	Vicenza	133	149 (139 to 160)	-16 (-27 to -6)	0.89 (0.83 to 0.96)
0 to 59	South	Abruzzo	L'Aquila	38	52 (47 to 58)	-14 (-20 to -9)	0.73 (0.65 to 0.81)
0 to 59	South	Calabria	Crotone	32	40 (36 to 46)	-8 (-14 to -4)	0.79 (0.70 to 0.90)
0 to 59	South	Calabria	Vibo Valentia	26	31 (27 to 36)	-5 (-10 to -1)	0.83 (0.72 to 0.97)
0 to 59	South	Campania	Caserta	186	215 (201 to 229)	-29 (-43 to -15)	0.87 (0.81 to 0.92)
0 to 59	South	Molise	Campobasso	30	37 (33 to 42)	-7 (-12 to -3)	0.81 (0.72 to 0.91)
60 to 69	Central	Marche	Fermo	33	43 (35 to 52)	-10 (-19 to -2)	0.77 (0.64 to 0.95)
60 to 69	Central	Umbria	Terni	42	56 (46 to 67)	-14 (-25 to -4)	0.75 (0.62 to 0.92)
60 to 69	Insular	Sardegna	Nuoro	54	79 (64 to 95)	-25 (-41 to -10)	0.68 (0.57 to 0.84)
60 to 69	Insular	Sardegna	Sassari	133	186 (155 to 219)	-53 (-86 to -22)	0.71 (0.61 to 0.86)
60 to 69	Insular	Sicilia	Trapani	83	106 (87 to 125)	-23 (-42 to -4)	0.78 (0.66 to 0.95)
70 to 79	Insular	Sardegna	Nuoro	101	143 (117 to 171)	-42 (-70 to -16)	0.71 (0.59 to 0.86)
70 to 79	Insular	Sardegna	Sassari	255	352 (289 to 416)	-97 (-161 to -34)	0.72 (0.61 to 0.88)

The total difference between observed and expected baseline deaths across these province-age groupings is a reduction of 409 deaths, of which 145 fewer deaths than expected occur in the 0 to 59 age group. These negative excess deaths were included in national estimates of age-specific and overall excess mortality. When these negative deaths are included, 51,647 of 53,245 (97.0%) excess deaths are attributed to the 60+ age groups. If all 18 significantly negative province-age groupings listed above are excluded from the calculation of total excess deaths, then 51,911 of 53,653 (96.8%) excess deaths are attributed to the 60+ age groups.

Excess mortality results by province

Results from the excess mortality analysis from 26 February through 26 May 2020 are summarized by province in Supplementary Table 8.

Supplementary Table 8: Summary of excess mortality results by province. SMRs: standardized mortality ratios.

Macroregion	Region	Province	Observed deaths	Expected baseline	Excess deaths	SMRs
Central	Lazio	Frosinone	1,427	1,382 (1,142 to 1,615)	45 (-188 to 285)	1.03 (0.88 to 1.25)
Central	Lazio	Latina	1,392	1,342 (1,117 to 1,564)	50 (-172 to 275)	1.04 (0.89 to 1.25)
Central	Lazio	Rieti	515	463 (378 to 542)	52 (-27 to 137)	1.11 (0.95 to 1.36)
Central	Lazio	Roma	10,548	10,183 (8,466 to 11,911)	365 (-1,363 to 2,082)	1.04 (0.89 to 1.25)
Central	Lazio	Viterbo	909	942 (781 to 1,095)	-33 (-186 to 128)	0.97 (0.83 to 1.16)
Central	Marche	Ancona	1,601	1,289 (1,058 to 1,510)	312 (91 to 543)	1.24 (1.06 to 1.51)
Central	Marche	Ascoli Piceno	618	593 (488 to 694)	25 (-76 to 130)	1.04 (0.89 to 1.27)
Central	Marche	Fermo	613	507 (419 to 594)	106 (19 to 194)	1.21 (1.03 to 1.46)
Central	Marche	Macerata	1,119	898 (739 to 1,056)	221 (63 to 380)	1.25 (1.06 to 1.51)
Central	Marche	Pesaro e Urbino	1,725	959 (792 to 1,122)	766 (603 to 933)	1.80 (1.54 to 2.18)
Central	Toscana	Arezzo	1,051	983 (812 to 1,151)	68 (-100 to 239)	1.07 (0.91 to 1.29)
Central	Toscana	Firenze	3,242	2,723 (2,247 to 3,189)	519 (53 to 995)	1.19 (1.02 to 1.44)
Central	Toscana	Grosseto	767	696 (575 to 813)	71 (-46 to 192)	1.10 (0.94 to 1.33)
Central	Toscana	Livorno	1,174	1,006 (827 to 1,179)	168 (-5 to 347)	1.17 (1.00 to 1.42)
Central	Toscana	Lucca	1,289	1,165 (967 to 1,358)	124 (-69 to 322)	1.11 (0.95 to 1.33)
Central	Toscana	Massa Carrara	829	642 (529 to 754)	187 (75 to 300)	1.29 (1.10 to 1.57)
Central	Toscana	Pisa	1,325	1,144 (939 to 1,339)	181 (-14 to 386)	1.16 (0.99 to 1.41)
Central	Toscana	Pistoia	915	806 (669 to 946)	109 (-31 to 246)	1.13 (0.97 to 1.37)
Central	Toscana	Prato	652	631 (522 to 740)	21 (-88 to 130)	1.03 (0.88 to 1.25)
Central	Toscana	Siena	825	796 (652 to 936)	29 (-111 to 173)	1.04 (0.88 to 1.27)
Central	Umbria	Perugia	1,903	1,812 (1,503 to 2,122)	91 (-219 to 400)	1.05 (0.90 to 1.27)
Central	Umbria	Terni	777	715 (586 to 835)	62 (-58 to 191)	1.09 (0.93 to 1.33)
Insular	Sardegna	Cagliari	1,013	800 (670 to 929)	213 (84 to 343)	1.27 (1.09 to 1.51)
Insular	Sardegna	Nuoro	598	725 (603 to 849)	-127 (-251 to -5)	0.83 (0.70 to 0.99)
Insular	Sardegna	Oristano	531	483 (397 to 566)	48 (-35 to 134)	1.10 (0.94 to 1.34)
Insular	Sardegna	Sassari	1,343	1,532 (1,270 to 1,784)	-189 (-441 to 73)	0.88 (0.75 to 1.06)
Insular	Sardegna	Sud Sardegna	1,070	954 (793 to 1,118)	116 (-48 to 277)	1.12 (0.96 to 1.35)
Insular	Sicilia	Agrigento	1,274	1,259 (1,043 to 1,473)	15 (-199 to 231)	1.01 (0.87 to 1.22)
Insular	Sicilia	Caltanissetta	769	740 (611 to 866)	29 (-97 to 158)	1.04 (0.89 to 1.26)
Insular	Sicilia	Catania	2,639	2,711 (2,259 to 3,156)	-72 (-517 to 380)	0.97 (0.84 to 1.17)
Insular	Sicilia	Enna	572	523 (428 to 610)	49 (-38 to 144)	1.09 (0.94 to 1.34)
Insular	Sicilia	Messina	1,948	1,828 (1,518 to 2,138)	120 (-190 to 430)	1.07 (0.91 to 1.28)
Insular	Sicilia	Palermo	3,305	3,222 (2,681 to 3,762)	83 (-457 to 624)	1.03 (0.88 to 1.23)
Insular	Sicilia	Ragusa	832	800 (671 to 931)	32 (-99 to 161)	1.04 (0.89 to 1.24)
Insular	Sicilia	Siracusa	1,139	1,021 (857 to 1,193)	118 (-54 to 282)	1.12 (0.95 to 1.33)

Macroregion	Region	Province	Observed deaths	Expected baseline	Excess deaths	SMRs
Insular	Sicilia	Trapani	1,210	1,200 (999 to 1,398)	10 (-188 to 211)	1.01 (0.87 to 1.21)
Northeast	Emilia-Romagna	Bologna	3,670	2,779 (2,300 to 3,252)	891 (418 to 1,370)	1.32 (1.13 to 1.60)
Northeast	Emilia-Romagna	Ferrara	1,324	1,148 (946 to 1,353)	176 (-29 to 378)	1.15 (0.98 to 1.40)
Northeast	Emilia-Romagna	Forli'-Cesena	1,361	1,059 (877 to 1,244)	302 (117 to 484)	1.28 (1.09 to 1.55)
Northeast	Emilia-Romagna	Modena	2,340	1,754 (1,453 to 2,056)	586 (284 to 887)	1.33 (1.14 to 1.61)
Northeast	Emilia-Romagna	Parma	2,700	1,190 (983 to 1,398)	1,510 (1,302 to 1,717)	2.27 (1.93 to 2.75)
Northeast	Emilia-Romagna	Piacenza	2,209	857 (704 to 1,002)	1,352 (1,207 to 1,505)	2.58 (2.20 to 3.14)
Northeast	Emilia-Romagna	Ravenna	1,265	1,118 (925 to 1,308)	147 (-43 to 340)	1.13 (0.97 to 1.37)
Northeast	Emilia-Romagna	Reggio Emilia	2,006	1,324 (1,097 to 1,544)	682 (462 to 909)	1.51 (1.30 to 1.83)
Northeast	Emilia-Romagna	Rimini	1,175	807 (662 to 944)	368 (231 to 513)	1.46 (1.24 to 1.77)
Northeast	Friuli-Venezia Giulia	Gorizia	465	440 (361 to 513)	25 (-48 to 104)	1.06 (0.91 to 1.29)
Northeast	Friuli-Venezia Giulia	Pordenone	908	792 (656 to 926)	116 (-18 to 252)	1.15 (0.98 to 1.38)
Northeast	Friuli-Venezia Giulia	Trieste	994	800 (666 to 931)	194 (63 to 328)	1.24 (1.07 to 1.49)
Northeast	Friuli-Venezia Giulia	Udine	1,675	1,589 (1,315 to 1,852)	86 (-177 to 360)	1.05 (0.90 to 1.27)
Northeast	Trentino-Alto Adige	Bolzano	1,608	1,098 (916 to 1,284)	510 (324 to 692)	1.46 (1.25 to 1.76)
Northeast	Trentino-Alto Adige	Trento	1,973	1,265 (1,048 to 1,485)	708 (488 to 925)	1.56 (1.33 to 1.88)
Northeast	Veneto	Belluno	726	627 (517 to 732)	99 (-6 to 209)	1.16 (0.99 to 1.40)
Northeast	Veneto	Padova	2,516	2,247 (1,858 to 2,619)	269 (-103 to 658)	1.12 (0.96 to 1.35)
Northeast	Veneto	Rovigo	871	743 (615 to 868)	128 (3 to 256)	1.17 (1.00 to 1.42)
Northeast	Veneto	Treviso	2,505	2,060 (1,714 to 2,422)	445 (83 to 791)	1.22 (1.03 to 1.46)
Northeast	Veneto	Venezia	2,712	2,243 (1,860 to 2,628)	469 (84 to 852)	1.21 (1.03 to 1.46)
Northeast	Veneto	Verona	2,893	2,200 (1,821 to 2,569)	693 (324 to 1,072)	1.32 (1.13 to 1.59)
Northeast	Veneto	Vicenza	2,404	2,020 (1,681 to 2,357)	384 (47 to 723)	1.19 (1.02 to 1.43)
Northwest	Liguria	Genova	4,354	2,841 (2,349 to 3,326)	1,513 (1,028 to 2,005)	1.53 (1.31 to 1.85)
Northwest	Liguria	Imperia	1,048	725 (597 to 851)	323 (197 to 451)	1.44 (1.23 to 1.76)
Northwest	Liguria	La Spezia	988	708 (581 to 834)	280 (154 to 407)	1.40 (1.19 to 1.70)
Northwest	Liguria	Savona	1,283	951 (783 to 1,122)	332 (161 to 500)	1.35 (1.14 to 1.64)
Northwest	Lombardia	Bergamo	8,702	2,453 (2,049 to 2,863)	6,249 (5,839 to 6,653)	3.55 (3.04 to 4.25)
Northwest	Lombardia	Brescia	7,474	2,885 (2,390 to 3,376)	4,589 (4,098 to 5,084)	2.59 (2.21 to 3.13)
Northwest	Lombardia	Como	2,340	1,498 (1,252 to 1,757)	842 (583 to 1,088)	1.56 (1.33 to 1.87)
Northwest	Lombardia	Cremona	3,156	988 (819 to 1,161)	2,168 (1,995 to 2,337)	3.19 (2.72 to 3.85)
Northwest	Lombardia	Lecco	1,722	795 (659 to 928)	927 (794 to 1,063)	2.17 (1.86 to 2.61)
Northwest	Lombardia	Lodi	1,538	559 (463 to 654)	979 (884 to 1,075)	2.75 (2.35 to 3.32)
Northwest	Lombardia	Mantova	2,065	1,100 (910 to 1,289)	965 (776 to 1,155)	1.88 (1.60 to 2.27)
Northwest	Lombardia	Milano	13,749	7,557 (6,273 to 8,873)	6,192 (4,876 to 7,476)	1.82 (1.55 to 2.19)
Northwest	Lombardia	Monza e della Brianza	3,331	1,919 (1,589 to 2,243)	1,412 (1,088 to 1,742)	1.74 (1.49 to 2.10)
Northwest	Lombardia	Pavia	3,426	1,636 (1,357 to 1,917)	1,790 (1,509 to 2,069)	2.09 (1.79 to 2.53)
Northwest	Lombardia	Sondrio	834	496 (410 to 578)	338 (256 to 424)	1.68 (1.44 to 2.03)
Northwest	Lombardia	Varese	3,187	2,236 (1,854 to 2,611)	951 (576 to 1,333)	1.43 (1.22 to 1.72)
Northwest	Piemonte	Alessandria	2,511	1,440 (1,186 to 1,689)	1,071 (822 to 1,325)	1.74 (1.49 to 2.12)

Macroregion	Region	Province	Observed deaths	Expected baseline	Excess deaths	SMRs
Northwest	Piemonte	Asti	1,032	692 (569 to 808)	340 (224 to 463)	1.49 (1.28 to 1.81)
Northwest	Piemonte	Biella	987	586 (483 to 688)	401 (299 to 504)	1.69 (1.43 to 2.05)
Northwest	Piemonte	Cuneo	2,212	1,705 (1,407 to 1,996)	507 (216 to 805)	1.30 (1.11 to 1.57)
Northwest	Piemonte	Novara	1,631	1,003 (827 to 1,167)	628 (464 to 804)	1.63 (1.40 to 1.97)
Northwest	Piemonte	Torino	9,285	6,221 (5,162 to 7,300)	3,064 (1,985 to 4,123)	1.49 (1.27 to 1.80)
Northwest	Piemonte	Verbano-Cusio-Ossola	690	499 (413 to 584)	191 (106 to 277)	1.38 (1.18 to 1.67)
Northwest	Piemonte	Vercelli	949	581 (478 to 684)	368 (265 to 471)	1.63 (1.39 to 1.98)
Northwest	Valle d'Aosta	Aosta	519	363 (300 to 427)	156 (92 to 219)	1.43 (1.21 to 1.73)
South	Abruzzo	Chieti	1,285	1,142 (945 to 1,336)	143 (-51 to 340)	1.13 (0.96 to 1.36)
South	Abruzzo	L'Aquila	869	856 (704 to 998)	13 (-129 to 165)	1.01 (0.87 to 1.24)
South	Abruzzo	Pescara	1,079	837 (697 to 985)	242 (94 to 382)	1.29 (1.10 to 1.55)
South	Abruzzo	Teramo	962	826 (684 to 966)	136 (-4 to 278)	1.16 (1.00 to 1.41)
South	Basilicata	Matera	545	507 (420 to 589)	38 (-44 to 125)	1.08 (0.93 to 1.30)
South	Basilicata	Potenza	1,148	1,077 (891 to 1,257)	71 (-109 to 257)	1.07 (0.91 to 1.29)
South	Calabria	Catanzaro	940	909 (754 to 1,062)	31 (-122 to 186)	1.03 (0.89 to 1.25)
South	Calabria	Cosenza	2,019	1,859 (1,544 to 2,170)	160 (-151 to 475)	1.09 (0.93 to 1.31)
South	Calabria	Crotone	462	411 (341 to 475)	51 (-13 to 121)	1.12 (0.97 to 1.36)
South	Calabria	Reggio di Calabria	1,555	1,405 (1,169 to 1,640)	150 (-85 to 386)	1.11 (0.95 to 1.33)
South	Calabria	Vibo Valentia	415	401 (333 to 468)	14 (-53 to 82)	1.04 (0.89 to 1.25)
South	Campania	Avellino	1,319	1,171 (973 to 1,368)	148 (-49 to 346)	1.13 (0.96 to 1.36)
South	Campania	Benevento	798	787 (651 to 926)	11 (-128 to 147)	1.01 (0.86 to 1.23)
South	Campania	Caserta	1,972	1,995 (1,677 to 2,318)	-23 (-346 to 295)	0.99 (0.85 to 1.18)
South	Campania	Napoli	6,870	6,732 (5,659 to 7,807)	138 (-937 to 1,211)	1.02 (0.88 to 1.21)
South	Campania	Salerno	2,767	2,813 (2,346 to 3,279)	-46 (-512 to 421)	0.98 (0.84 to 1.18)
South	Molise	Campobasso	703	658 (542 to 769)	45 (-66 to 161)	1.07 (0.91 to 1.30)
South	Molise	Isernia	286	279 (230 to 326)	7 (-40 to 56)	1.02 (0.88 to 1.24)
South	Puglia	Bari	3,186	2,819 (2,352 to 3,309)	367 (-123 to 834)	1.13 (0.96 to 1.35)
South	Puglia	Barletta-Andria-Trani	948	832 (700 to 963)	116 (-15 to 248)	1.14 (0.98 to 1.35)
South	Puglia	Brindisi	1,179	1,007 (834 to 1,179)	172 (0 to 345)	1.17 (1.00 to 1.41)
South	Puglia	Foggia	1,803	1,516 (1,266 to 1,761)	287 (42 to 537)	1.19 (1.02 to 1.42)
South	Puglia	Lecce	2,275	2,108 (1,750 to 2,461)	167 (-186 to 525)	1.08 (0.92 to 1.30)
South	Puglia	Taranto	1,499	1,399 (1,169 to 1,634)	100 (-135 to 330)	1.07 (0.92 to 1.28)

Excess mortality results by province and age group

Results from the excess mortality analysis from 26 February through 26 May 2020 are summarized by province and age group in Supplementary Table 9.

Supplementary Table 9: Summary of excess mortality results by province and age group. SMRs: standardized mortality ratios.

Macroregion	Region	Province	Age group	Observed deaths	Expected baseline	Excess deaths	SMRs
Central	Lazio	Frosinone	0 to 59	102	94 (87 to 103)	8 (-1 to 15)	1.08 (0.99 to 1.17)
Central	Lazio	Frosinone	60 to 69	148	136 (113 to 161)	12 (-13 to 35)	1.09 (0.92 to 1.31)
Central	Lazio	Frosinone	70 to 79	248	268 (221 to 316)	-20 (-68 to 27)	0.93 (0.78 to 1.12)
Central	Lazio	Frosinone	80 to 89	538	543 (426 to 649)	-5 (-111 to 112)	0.99 (0.83 to 1.26)
Central	Lazio	Frosinone	90+	391	341 (270 to 411)	50 (-20 to 121)	1.15 (0.95 to 1.45)
Central	Lazio	Latina	0 to 59	110	107 (99 to 117)	3 (-7 to 11)	1.02 (0.94 to 1.11)
Central	Lazio	Latina	60 to 69	132	132 (110 to 157)	0 (-25 to 22)	1.00 (0.84 to 1.20)
Central	Lazio	Latina	70 to 79	286	286 (235 to 340)	0 (-54 to 51)	1.00 (0.84 to 1.22)
Central	Lazio	Latina	80 to 89	535	528 (420 to 638)	7 (-103 to 115)	1.01 (0.84 to 1.27)
Central	Lazio	Latina	90+	329	289 (229 to 345)	40 (-16 to 100)	1.14 (0.95 to 1.44)
Central	Lazio	Rieti	0 to 59	48	25 (22 to 29)	23 (19 to 26)	1.91 (1.68 to 2.19)
Central	Lazio	Rieti	60 to 69	44	42 (34 to 50)	2 (-6 to 10)	1.05 (0.88 to 1.29)
Central	Lazio	Rieti	70 to 79	87	85 (70 to 102)	2 (-15 to 17)	1.02 (0.85 to 1.24)
Central	Lazio	Rieti	80 to 89	191	184 (144 to 223)	7 (-32 to 47)	1.04 (0.86 to 1.32)
Central	Lazio	Rieti	90+	145	126 (100 to 153)	19 (-8 to 45)	1.15 (0.95 to 1.45)
Central	Lazio	Roma	0 to 59	779	775 (743 to 807)	4 (-28 to 36)	1.01 (0.97 to 1.05)
Central	Lazio	Roma	60 to 69	1,007	986 (833 to 1,154)	21 (-147 to 174)	1.02 (0.87 to 1.21)
Central	Lazio	Roma	70 to 79	2,212	2,021 (1,679 to 2,379)	191 (-167 to 533)	1.09 (0.93 to 1.32)
Central	Lazio	Roma	80 to 89	4,063	4,029 (3,184 to 4,847)	34 (-784 to 879)	1.01 (0.84 to 1.28)
Central	Lazio	Roma	90+	2,487	2,373 (1,894 to 2,851)	114 (-364 to 593)	1.05 (0.87 to 1.31)
Central	Lazio	Viterbo	0 to 59	57	62 (56 to 69)	-5 (-12 to 1)	0.92 (0.83 to 1.02)
Central	Lazio	Viterbo	60 to 69	93	85 (71 to 101)	8 (-8 to 22)	1.09 (0.92 to 1.31)
Central	Lazio	Viterbo	70 to 79	176	182 (149 to 216)	-6 (-40 to 27)	0.97 (0.82 to 1.18)
Central	Lazio	Viterbo	80 to 89	335	386 (307 to 464)	-51 (-129 to 28)	0.87 (0.72 to 1.09)
Central	Lazio	Viterbo	90+	248	226 (180 to 271)	22 (-23 to 68)	1.10 (0.91 to 1.38)
Central	Marche	Ancona	0 to 59	91	74 (66 to 81)	17 (10 to 25)	1.24 (1.12 to 1.37)
Central	Marche	Ancona	60 to 69	108	106 (88 to 126)	2 (-18 to 20)	1.02 (0.85 to 1.23)
Central	Marche	Ancona	70 to 79	265	210 (174 to 250)	55 (15 to 91)	1.26 (1.06 to 1.53)
Central	Marche	Ancona	80 to 89	655	519 (407 to 622)	136 (33 to 248)	1.26 (1.05 to 1.61)
Central	Marche	Ancona	90+	482	380 (302 to 458)	102 (24 to 180)	1.27 (1.05 to 1.60)
Central	Marche	Ascoli Piceno	0 to 59	35	33 (29 to 38)	2 (-3 to 6)	1.05 (0.93 to 1.19)
Central	Marche	Ascoli Piceno	60 to 69	45	45 (36 to 53)	0 (-8 to 9)	1.01 (0.84 to 1.24)
Central	Marche	Ascoli Piceno	70 to 79	101	97 (80 to 116)	4 (-15 to 21)	1.04 (0.87 to 1.26)
Central	Marche	Ascoli Piceno	80 to 89	243	250 (198 to 300)	-7 (-57 to 45)	0.97 (0.81 to 1.22)
Central	Marche	Ascoli Piceno	90+	194	169 (134 to 204)	25 (-10 to 60)	1.15 (0.95 to 1.45)
Central	Marche	Fermo	0 to 59	32	28 (24 to 32)	4 (0 to 8)	1.14 (1.00 to 1.31)

Macroregion	Region	Province	Age group	Observed deaths	Expected baseline	Excess deaths	SMRs
Central	Marche	Fermo	60 to 69	33	43 (35 to 52)	-10 (-19 to -2)	0.77 (0.64 to 0.95)
Central	Marche	Fermo	70 to 79	104	82 (68 to 99)	22 (5 to 36)	1.26 (1.05 to 1.53)
Central	Marche	Fermo	80 to 89	261	220 (173 to 265)	41 (-4 to 88)	1.19 (0.99 to 1.51)
Central	Marche	Fermo	90+	183	133 (106 to 163)	50 (20 to 77)	1.37 (1.12 to 1.72)
Central	Marche	Macerata	0 to 59	66	48 (43 to 53)	18 (13 to 23)	1.37 (1.23 to 1.53)
Central	Marche	Macerata	60 to 69	71	65 (53 to 76)	6 (-5 to 18)	1.10 (0.93 to 1.33)
Central	Marche	Macerata	70 to 79	203	145 (120 to 173)	58 (30 to 83)	1.40 (1.17 to 1.70)
Central	Marche	Macerata	80 to 89	434	379 (299 to 460)	55 (-26 to 135)	1.15 (0.94 to 1.45)
Central	Marche	Macerata	90+	345	261 (208 to 315)	84 (30 to 137)	1.32 (1.09 to 1.66)
Central	Marche	Pesaro e Urbino	0 to 59	85	53 (47 to 59)	32 (26 to 38)	1.61 (1.44 to 1.80)
Central	Marche	Pesaro e Urbino	60 to 69	133	69 (57 to 82)	64 (51 to 76)	1.92 (1.61 to 2.31)
Central	Marche	Pesaro e Urbino	70 to 79	315	160 (131 to 189)	155 (126 to 184)	1.97 (1.67 to 2.40)
Central	Marche	Pesaro e Urbino	80 to 89	686	386 (305 to 463)	300 (223 to 381)	1.78 (1.48 to 2.25)
Central	Marche	Pesaro e Urbino	90+	506	291 (232 to 352)	215 (154 to 274)	1.74 (1.44 to 2.18)
Central	Toscana	Arezzo	0 to 59	64	57 (51 to 63)	7 (1 to 13)	1.12 (1.02 to 1.25)
Central	Toscana	Arezzo	60 to 69	92	75 (62 to 89)	17 (3 to 30)	1.22 (1.03 to 1.47)
Central	Toscana	Arezzo	70 to 79	157	177 (144 to 211)	-20 (-54 to 13)	0.89 (0.74 to 1.09)
Central	Toscana	Arezzo	80 to 89	399	395 (312 to 476)	4 (-77 to 87)	1.01 (0.84 to 1.28)
Central	Toscana	Arezzo	90+	339	279 (221 to 335)	60 (4 to 118)	1.22 (1.01 to 1.53)
Central	Toscana	Firenze	0 to 59	166	145 (136 to 155)	21 (11 to 30)	1.14 (1.07 to 1.22)
Central	Toscana	Firenze	60 to 69	227	196 (164 to 230)	31 (-3 to 63)	1.16 (0.99 to 1.38)
Central	Toscana	Firenze	70 to 79	546	467 (383 to 547)	79 (-1 to 163)	1.17 (1.00 to 1.43)
Central	Toscana	Firenze	80 to 89	1,309	1,102 (866 to 1,327)	207 (-18 to 443)	1.19 (0.99 to 1.51)
Central	Toscana	Firenze	90+	994	812 (645 to 973)	182 (21 to 349)	1.22 (1.02 to 1.54)
Central	Toscana	Grosseto	0 to 59	46	36 (31 to 40)	10 (6 to 15)	1.29 (1.14 to 1.46)
Central	Toscana	Grosseto	60 to 69	51	54 (45 to 66)	-3 (-15 to 6)	0.94 (0.78 to 1.14)
Central	Toscana	Grosseto	70 to 79	144	130 (107 to 155)	14 (-11 to 37)	1.11 (0.93 to 1.35)
Central	Toscana	Grosseto	80 to 89	294	285 (225 to 345)	9 (-51 to 69)	1.03 (0.85 to 1.30)
Central	Toscana	Grosseto	90+	232	191 (150 to 232)	41 (0 to 82)	1.22 (1.00 to 1.55)
Central	Toscana	Livorno	0 to 59	72	59 (53 to 65)	13 (7 to 19)	1.22 (1.10 to 1.37)
Central	Toscana	Livorno	60 to 69	93	78 (65 to 94)	15 (-1 to 28)	1.19 (0.99 to 1.44)
Central	Toscana	Livorno	70 to 79	235	205 (170 to 242)	30 (-7 to 65)	1.15 (0.97 to 1.38)
Central	Toscana	Livorno	80 to 89	436	404 (320 to 485)	32 (-49 to 116)	1.08 (0.90 to 1.36)
Central	Toscana	Livorno	90+	338	260 (204 to 314)	78 (24 to 134)	1.30 (1.08 to 1.66)
Central	Toscana	Lucca	0 to 59	62	67 (61 to 74)	-5 (-12 to 1)	0.93 (0.84 to 1.02)
Central	Toscana	Lucca	60 to 69	98	94 (78 to 113)	4 (-15 to 20)	1.04 (0.87 to 1.25)
Central	Toscana	Lucca	70 to 79	271	218 (180 to 260)	53 (11 to 91)	1.24 (1.04 to 1.51)
Central	Toscana	Lucca	80 to 89	523	470 (371 to 563)	53 (-40 to 152)	1.11 (0.93 to 1.41)
Central	Toscana	Lucca	90+	335	315 (249 to 382)	20 (-47 to 86)	1.06 (0.88 to 1.34)
Central	Toscana	Massa Carrara	0 to 59	46	36 (32 to 41)	10 (5 to 14)	1.27 (1.13 to 1.45)
Central	Toscana	Massa Carrara	60 to 69	73	51 (42 to 62)	22 (11 to 31)	1.42 (1.18 to 1.72)
Central	Toscana	Massa Carrara	70 to 79	144	121 (98 to 144)	23 (0 to 46)	1.19 (1.00 to 1.47)
Central	Toscana	Massa Carrara	80 to 89	341	251 (198 to 304)	90 (37 to 143)	1.36 (1.12 to 1.72)
Central	Toscana	Massa Carrara	90+	225	182 (145 to 220)	43 (5 to 80)	1.23 (1.02 to 1.55)

Macroregion	Region	Province	Age group	Observed deaths	Expected baseline	Excess deaths	SMRs
Central	Toscana	Pisa	0 to 59	80	71 (64 to 78)	9 (2 to 16)	1.13 (1.03 to 1.25)
Central	Toscana	Pisa	60 to 69	85	93 (78 to 111)	-8 (-26 to 7)	0.91 (0.77 to 1.09)
Central	Toscana	Pisa	70 to 79	265	210 (172 to 249)	55 (16 to 93)	1.26 (1.06 to 1.54)
Central	Toscana	Pisa	80 to 89	531	457 (361 to 549)	74 (-18 to 170)	1.16 (0.97 to 1.47)
Central	Toscana	Pisa	90+	364	313 (247 to 377)	51 (-13 to 117)	1.16 (0.97 to 1.47)
Central	Toscana	Pistoia	0 to 59	62	49 (44 to 54)	13 (8 to 18)	1.28 (1.15 to 1.42)
Central	Toscana	Pistoia	60 to 69	82	65 (54 to 76)	17 (6 to 28)	1.27 (1.07 to 1.53)
Central	Toscana	Pistoia	70 to 79	174	145 (119 to 173)	29 (1 to 55)	1.20 (1.01 to 1.46)
Central	Toscana	Pistoia	80 to 89	356	329 (262 to 395)	27 (-39 to 94)	1.08 (0.90 to 1.36)
Central	Toscana	Pistoia	90+	241	218 (173 to 264)	23 (-23 to 68)	1.10 (0.91 to 1.39)
Central	Toscana	Prato	0 to 59	39	41 (36 to 46)	-2 (-7 to 3)	0.96 (0.85 to 1.09)
Central	Toscana	Prato	60 to 69	59	48 (40 to 58)	11 (1 to 19)	1.22 (1.01 to 1.49)
Central	Toscana	Prato	70 to 79	112	113 (92 to 134)	-1 (-22 to 20)	0.99 (0.83 to 1.21)
Central	Toscana	Prato	80 to 89	265	251 (197 to 303)	14 (-38 to 68)	1.06 (0.87 to 1.35)
Central	Toscana	Prato	90+	177	179 (142 to 216)	-2 (-39 to 35)	0.99 (0.82 to 1.25)
Central	Toscana	Siena	0 to 59	40	39 (35 to 44)	1 (-4 to 5)	1.01 (0.90 to 1.14)
Central	Toscana	Siena	60 to 69	66	54 (44 to 64)	12 (2 to 22)	1.22 (1.03 to 1.49)
Central	Toscana	Siena	70 to 79	141	135 (111 to 160)	6 (-19 to 30)	1.04 (0.88 to 1.27)
Central	Toscana	Siena	80 to 89	324	316 (251 to 385)	8 (-61 to 73)	1.02 (0.84 to 1.29)
Central	Toscana	Siena	90+	254	251 (199 to 303)	3 (-49 to 55)	1.01 (0.84 to 1.28)
Central	Umbria	Perugia	0 to 59	109	105 (97 to 113)	4 (-4 to 12)	1.04 (0.96 to 1.13)
Central	Umbria	Perugia	60 to 69	132	133 (112 to 157)	-1 (-25 to 20)	0.99 (0.84 to 1.18)
Central	Umbria	Perugia	70 to 79	305	315 (260 to 374)	-10 (-69 to 45)	0.97 (0.82 to 1.17)
Central	Umbria	Perugia	80 to 89	711	737 (589 to 887)	-26 (-176 to 122)	0.96 (0.80 to 1.21)
Central	Umbria	Perugia	90+	646	522 (415 to 628)	124 (18 to 231)	1.24 (1.03 to 1.56)
Central	Umbria	Terni	0 to 59	48	40 (36 to 45)	8 (3 to 12)	1.21 (1.07 to 1.35)
Central	Umbria	Terni	60 to 69	42	56 (46 to 67)	-14 (-25 to -4)	0.75 (0.62 to 0.92)
Central	Umbria	Terni	70 to 79	149	129 (106 to 153)	20 (-4 to 43)	1.15 (0.97 to 1.41)
Central	Umbria	Terni	80 to 89	271	294 (233 to 354)	-23 (-83 to 38)	0.92 (0.76 to 1.16)
Central	Umbria	Terni	90+	267	196 (155 to 235)	71 (32 to 112)	1.36 (1.13 to 1.72)
Insular	Sardegna	Cagliari	0 to 59	94	80 (72 to 88)	14 (6 to 22)	1.18 (1.07 to 1.31)
Insular	Sardegna	Cagliari	60 to 69	116	85 (71 to 101)	31 (15 to 45)	1.37 (1.15 to 1.64)
Insular	Sardegna	Cagliari	70 to 79	206	152 (125 to 181)	54 (25 to 81)	1.35 (1.14 to 1.65)
Insular	Sardegna	Cagliari	80 to 89	336	274 (216 to 333)	62 (3 to 120)	1.23 (1.01 to 1.55)
Insular	Sardegna	Cagliari	90+	261	209 (165 to 254)	52 (7 to 96)	1.25 (1.03 to 1.58)
Insular	Sardegna	Nuoro	0 to 59	48	51 (45 to 58)	-3 (-10 to 3)	0.94 (0.83 to 1.08)
Insular	Sardegna	Nuoro	60 to 69	54	79 (64 to 95)	-25 (-41 to -10)	0.68 (0.57 to 0.84)
Insular	Sardegna	Nuoro	70 to 79	101	143 (117 to 171)	-42 (-70 to -16)	0.71 (0.59 to 0.86)
Insular	Sardegna	Nuoro	80 to 89	235	283 (222 to 344)	-48 (-109 to 13)	0.83 (0.68 to 1.06)
Insular	Sardegna	Nuoro	90+	160	169 (134 to 203)	-9 (-43 to 26)	0.95 (0.79 to 1.19)
Insular	Sardegna	Oristano	0 to 59	40	30 (26 to 34)	10 (6 to 14)	1.34 (1.17 to 1.55)
Insular	Sardegna	Oristano	60 to 69	47	50 (41 to 61)	-3 (-14 to 6)	0.93 (0.77 to 1.14)
Insular	Sardegna	Oristano	70 to 79	106	92 (76 to 111)	14 (-5 to 30)	1.15 (0.95 to 1.40)
Insular	Sardegna	Oristano	80 to 89	204	191 (149 to 230)	13 (-26 to 55)	1.07 (0.89 to 1.37)

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Insular	Sardegna	Oristano	90+	134	120 (95 to 145)	14 (-11 to 39)	1.12 (0.93 to 1.42)
Insular	Sardegna	Sassari	0 to 59	101	108 (97 to 119)	-7 (-18 to 4)	0.94 (0.85 to 1.04)
Insular	Sardegna	Sassari	60 to 69	133	186 (155 to 219)	-53 (-86 to -22)	0.71 (0.61 to 0.86)
Insular	Sardegna	Sassari	70 to 79	255	352 (289 to 416)	-97 (-161 to -34)	0.72 (0.61 to 0.88)
Insular	Sardegna	Sassari	80 to 89	537	599 (477 to 725)	-62 (-188 to 60)	0.90 (0.74 to 1.13)
Insular	Sardegna	Sassari	90+	317	287 (226 to 346)	30 (-29 to 91)	1.10 (0.92 to 1.40)
Insular	Sardegna	Sud Sardegna	0 to 59	89	75 (67 to 83)	14 (6 to 22)	1.19 (1.07 to 1.33)
Insular	Sardegna	Sud Sardegna	60 to 69	104	104 (85 to 122)	0 (-18 to 19)	1.00 (0.85 to 1.22)
Insular	Sardegna	Sud Sardegna	70 to 79	218	182 (151 to 216)	36 (2 to 67)	1.20 (1.01 to 1.44)
Insular	Sardegna	Sud Sardegna	80 to 89	376	352 (277 to 422)	24 (-46 to 99)	1.07 (0.89 to 1.36)
Insular	Sardegna	Sud Sardegna	90+	283	243 (193 to 295)	40 (-12 to 90)	1.17 (0.96 to 1.47)
Insular	Sicilia	Agrigento	0 to 59	100	86 (78 to 95)	14 (5 to 22)	1.16 (1.06 to 1.28)
Insular	Sicilia	Agrigento	60 to 69	98	112 (93 to 133)	-14 (-35 to 5)	0.88 (0.74 to 1.05)
Insular	Sicilia	Agrigento	70 to 79	262	247 (202 to 291)	15 (-29 to 60)	1.06 (0.90 to 1.30)
Insular	Sicilia	Agrigento	80 to 89	522	531 (420 to 637)	-9 (-115 to 102)	0.98 (0.82 to 1.24)
Insular	Sicilia	Agrigento	90+	292	284 (227 to 341)	8 (-49 to 65)	1.03 (0.86 to 1.29)
Insular	Sicilia	Caltanissetta	0 to 59	52	57 (51 to 64)	-5 (-12 to 1)	0.91 (0.82 to 1.01)
Insular	Sicilia	Caltanissetta	60 to 69	85	67 (56 to 81)	18 (4 to 29)	1.26 (1.05 to 1.52)
Insular	Sicilia	Caltanissetta	70 to 79	164	155 (129 to 185)	9 (-21 to 35)	1.06 (0.89 to 1.27)
Insular	Sicilia	Caltanissetta	80 to 89	304	312 (246 to 376)	-8 (-72 to 58)	0.98 (0.81 to 1.24)
Insular	Sicilia	Caltanissetta	90+	164	148 (117 to 180)	16 (-16 to 47)	1.10 (0.91 to 1.40)
Insular	Sicilia	Catania	0 to 59	205	214 (199 to 231)	-9 (-26 to 6)	0.96 (0.89 to 1.03)
Insular	Sicilia	Catania	60 to 69	260	282 (236 to 332)	-22 (-72 to 24)	0.92 (0.78 to 1.10)
Insular	Sicilia	Catania	70 to 79	537	560 (462 to 660)	-23 (-123 to 75)	0.96 (0.81 to 1.16)
Insular	Sicilia	Catania	80 to 89	1,054	1,082 (854 to 1,302)	-28 (-248 to 200)	0.97 (0.81 to 1.23)
Insular	Sicilia	Catania	90+	583	572 (453 to 691)	11 (-108 to 130)	1.02 (0.84 to 1.29)
Insular	Sicilia	Enna	0 to 59	43	34 (30 to 39)	9 (4 to 13)	1.25 (1.09 to 1.42)
Insular	Sicilia	Enna	60 to 69	53	46 (37 to 56)	7 (-3 to 16)	1.15 (0.95 to 1.42)
Insular	Sicilia	Enna	70 to 79	111	96 (78 to 114)	15 (-3 to 33)	1.16 (0.97 to 1.42)
Insular	Sicilia	Enna	80 to 89	237	223 (176 to 269)	14 (-32 to 61)	1.06 (0.88 to 1.35)
Insular	Sicilia	Enna	90+	128	124 (98 to 150)	4 (-22 to 30)	1.03 (0.85 to 1.31)
Insular	Sicilia	Messina	0 to 59	157	115 (105 to 126)	42 (31 to 52)	1.37 (1.25 to 1.49)
Insular	Sicilia	Messina	60 to 69	191	180 (150 to 211)	11 (-20 to 41)	1.06 (0.91 to 1.27)
Insular	Sicilia	Messina	70 to 79	382	363 (301 to 430)	19 (-48 to 81)	1.05 (0.89 to 1.27)
Insular	Sicilia	Messina	80 to 89	729	731 (581 to 883)	-2 (-154 to 148)	1.00 (0.83 to 1.25)
Insular	Sicilia	Messina	90+	489	438 (348 to 525)	51 (-36 to 141)	1.12 (0.93 to 1.41)
Insular	Sicilia	Palermo	0 to 59	223	248 (232 to 266)	-25 (-43 to -9)	0.90 (0.84 to 0.96)
Insular	Sicilia	Palermo	60 to 69	336	324 (272 to 381)	12 (-45 to 64)	1.04 (0.88 to 1.24)
Insular	Sicilia	Palermo	70 to 79	714	671 (552 to 793)	43 (-79 to 162)	1.06 (0.90 to 1.29)
Insular	Sicilia	Palermo	80 to 89	1,284	1,268 (1,003 to 1,520)	16 (-236 to 281)	1.01 (0.84 to 1.28)
Insular	Sicilia	Palermo	90+	748	711 (568 to 854)	37 (-106 to 180)	1.05 (0.88 to 1.32)
Insular	Sicilia	Ragusa	0 to 59	57	60 (54 to 68)	-3 (-11 to 3)	0.95 (0.84 to 1.05)
Insular	Sicilia	Ragusa	60 to 69	72	67 (55 to 81)	5 (-9 to 17)	1.07 (0.89 to 1.30)
Insular	Sicilia	Ragusa	70 to 79	154	153 (126 to 181)	1 (-27 to 28)	1.01 (0.85 to 1.22)

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Insular	Sicilia	Ragusa	80 to 89	343	329 (259 to 397)	14 (-54 to 84)	1.04 (0.86 to 1.32)
Insular	Sicilia	Ragusa	90+	206	190 (152 to 231)	16 (-25 to 54)	1.08 (0.89 to 1.35)
Insular	Sicilia	Siracusa	0 to 59	75	77 (69 to 85)	-2 (-10 to 6)	0.98 (0.88 to 1.09)
Insular	Sicilia	Siracusa	60 to 69	113	100 (83 to 117)	13 (-4 to 30)	1.13 (0.96 to 1.36)
Insular	Sicilia	Siracusa	70 to 79	269	229 (189 to 272)	40 (-3 to 80)	1.17 (0.99 to 1.43)
Insular	Sicilia	Siracusa	80 to 89	444	419 (331 to 502)	25 (-58 to 113)	1.06 (0.88 to 1.34)
Insular	Sicilia	Siracusa	90+	238	196 (157 to 237)	42 (1 to 81)	1.21 (1.00 to 1.52)
Insular	Sicilia	Trapani	0 to 59	76	88 (80 to 97)	-12 (-21 to -4)	0.86 (0.78 to 0.95)
Insular	Sicilia	Trapani	60 to 69	83	106 (87 to 125)	-23 (-42 to -4)	0.78 (0.66 to 0.95)
Insular	Sicilia	Trapani	70 to 79	257	228 (189 to 271)	29 (-14 to 68)	1.13 (0.95 to 1.36)
Insular	Sicilia	Trapani	80 to 89	481	493 (392 to 595)	-12 (-114 to 89)	0.98 (0.81 to 1.23)
Insular	Sicilia	Trapani	90+	313	285 (225 to 342)	28 (-29 to 88)	1.10 (0.91 to 1.39)
Northeast	Emilia-Romagna	Bologna	0 to 59	191	161 (151 to 173)	30 (18 to 40)	1.19 (1.10 to 1.26)
Northeast	Emilia-Romagna	Bologna	60 to 69	254	213 (179 to 250)	41 (4 to 75)	1.19 (1.02 to 1.42)
Northeast	Emilia-Romagna	Bologna	70 to 79	657	480 (393 to 563)	177 (94 to 264)	1.37 (1.17 to 1.67)
Northeast	Emilia-Romagna	Bologna	80 to 89	1,433	1,100 (871 to 1,324)	333 (109 to 562)	1.30 (1.08 to 1.65)
Northeast	Emilia-Romagna	Bologna	90+	1,135	824 (660 to 987)	311 (148 to 475)	1.38 (1.15 to 1.72)
Northeast	Emilia-Romagna	Ferrara	0 to 59	81	65 (60 to 71)	16 (10 to 21)	1.24 (1.14 to 1.36)
Northeast	Emilia-Romagna	Ferrara	60 to 69	99	97 (80 to 115)	2 (-16 to 19)	1.02 (0.86 to 1.23)
Northeast	Emilia-Romagna	Ferrara	70 to 79	245	210 (172 to 249)	35 (-4 to 73)	1.17 (0.98 to 1.42)
Northeast	Emilia-Romagna	Ferrara	80 to 89	549	478 (379 to 576)	71 (-27 to 170)	1.15 (0.95 to 1.45)
Northeast	Emilia-Romagna	Ferrara	90+	350	297 (236 to 357)	53 (-7 to 114)	1.18 (0.98 to 1.48)
Northeast	Emilia-Romagna	Forlì-Cesena	0 to 59	62	65 (59 to 72)	-3 (-10 to 3)	0.96 (0.87 to 1.06)
Northeast	Emilia-Romagna	Forlì-Cesena	60 to 69	113	81 (67 to 96)	32 (17 to 46)	1.39 (1.17 to 1.68)
Northeast	Emilia-Romagna	Forlì-Cesena	70 to 79	247	179 (147 to 213)	68 (34 to 100)	1.38 (1.16 to 1.68)
Northeast	Emilia-Romagna	Forlì-Cesena	80 to 89	550	422 (332 to 510)	128 (40 to 218)	1.30 (1.08 to 1.65)
Northeast	Emilia-Romagna	Forlì-Cesena	90+	389	313 (250 to 376)	76 (13 to 139)	1.24 (1.03 to 1.55)
Northeast	Emilia-Romagna	Modena	0 to 59	136	115 (106 to 124)	21 (12 to 30)	1.18 (1.09 to 1.28)
Northeast	Emilia-Romagna	Modena	60 to 69	173	143 (119 to 168)	30 (5 to 54)	1.21 (1.03 to 1.45)
Northeast	Emilia-Romagna	Modena	70 to 79	437	318 (261 to 374)	119 (63 to 176)	1.38 (1.17 to 1.67)
Northeast	Emilia-Romagna	Modena	80 to 89	922	683 (535 to 825)	239 (97 to 387)	1.35 (1.12 to 1.72)
Northeast	Emilia-Romagna	Modena	90+	672	496 (396 to 597)	176 (75 to 276)	1.36 (1.13 to 1.70)
Northeast	Emilia-Romagna	Parma	0 to 59	115	77 (70 to 85)	38 (30 to 45)	1.49 (1.36 to 1.63)
Northeast	Emilia-Romagna	Parma	60 to 69	227	92 (75 to 109)	135 (118 to 152)	2.47 (2.09 to 3.01)
Northeast	Emilia-Romagna	Parma	70 to 79	595	208 (171 to 250)	387 (345 to 424)	2.86 (2.38 to 3.49)
Northeast	Emilia-Romagna	Parma	80 to 89	1,071	470 (369 to 568)	601 (503 to 702)	2.28 (1.89 to 2.90)
Northeast	Emilia-Romagna	Parma	90+	692	343 (270 to 412)	349 (280 to 422)	2.02 (1.68 to 2.56)
Northeast	Emilia-Romagna	Piacenza	0 to 59	83	49 (44 to 54)	34 (29 to 39)	1.71 (1.53 to 1.91)
Northeast	Emilia-Romagna	Piacenza	60 to 69	185	67 (55 to 80)	118 (105 to 130)	2.77 (2.31 to 3.38)
Northeast	Emilia-Romagna	Piacenza	70 to 79	504	154 (126 to 184)	350 (320 to 378)	3.28 (2.74 to 4.00)
Northeast	Emilia-Romagna	Piacenza	80 to 89	880	347 (274 to 417)	533 (463 to 606)	2.54 (2.11 to 3.22)
Northeast	Emilia-Romagna	Piacenza	90+	557	241 (192 to 289)	316 (268 to 365)	2.31 (1.93 to 2.91)
Northeast	Emilia-Romagna	Ravenna	0 to 59	61	67 (60 to 73)	-6 (-12 to 1)	0.91 (0.83 to 1.01)
Northeast	Emilia-Romagna	Ravenna	60 to 69	83	83 (69 to 100)	0 (-17 to 14)	1.00 (0.83 to 1.20)

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Northeast	Emilia-Romagna	Ravenna	70 to 79	207	183 (150 to 215)	24 (-8 to 57)	1.13 (0.96 to 1.38)
Northeast	Emilia-Romagna	Ravenna	80 to 89	502	442 (350 to 532)	60 (-30 to 152)	1.14 (0.94 to 1.43)
Northeast	Emilia-Romagna	Ravenna	90+	412	344 (275 to 412)	68 (0 to 137)	1.20 (1.00 to 1.50)
Northeast	Emilia-Romagna	Reggio nell'Emilia	0 to 59	95	96 (88 to 104)	-1 (-9 to 7)	0.99 (0.91 to 1.08)
Northeast	Emilia-Romagna	Reggio nell'Emilia	60 to 69	156	110 (91 to 130)	46 (26 to 65)	1.42 (1.20 to 1.71)
Northeast	Emilia-Romagna	Reggio nell'Emilia	70 to 79	380	238 (197 to 281)	142 (99 to 183)	1.60 (1.35 to 1.93)
Northeast	Emilia-Romagna	Reggio nell'Emilia	80 to 89	788	512 (406 to 614)	276 (174 to 382)	1.54 (1.28 to 1.94)
Northeast	Emilia-Romagna	Reggio nell'Emilia	90+	587	369 (293 to 444)	218 (143 to 294)	1.59 (1.32 to 2.00)
Northeast	Emilia-Romagna	Rimini	0 to 59	72	54 (48 to 61)	18 (11 to 24)	1.33 (1.19 to 1.49)
Northeast	Emilia-Romagna	Rimini	60 to 69	90	63 (52 to 75)	27 (15 to 38)	1.42 (1.20 to 1.74)
Northeast	Emilia-Romagna	Rimini	70 to 79	212	140 (114 to 166)	72 (46 to 98)	1.52 (1.27 to 1.87)
Northeast	Emilia-Romagna	Rimini	80 to 89	464	320 (253 to 383)	144 (81 to 211)	1.45 (1.21 to 1.83)
Northeast	Emilia-Romagna	Rimini	90+	337	230 (182 to 279)	107 (58 to 155)	1.47 (1.21 to 1.85)
Northeast	Friuli-Venezia Giulia	Gorizia	0 to 59	27	28 (24 to 32)	-1 (-5 to 3)	0.97 (0.83 to 1.13)
Northeast	Friuli-Venezia Giulia	Gorizia	60 to 69	32	38 (31 to 46)	-6 (-14 to 1)	0.84 (0.70 to 1.04)
Northeast	Friuli-Venezia Giulia	Gorizia	70 to 79	89	88 (71 to 106)	1 (-17 to 18)	1.01 (0.84 to 1.25)
Northeast	Friuli-Venezia Giulia	Gorizia	80 to 89	190	167 (129 to 203)	23 (-13 to 61)	1.14 (0.94 to 1.47)
Northeast	Friuli-Venezia Giulia	Gorizia	90+	127	118 (93 to 143)	9 (-16 to 34)	1.07 (0.89 to 1.36)
Northeast	Friuli-Venezia Giulia	Pordenone	0 to 59	46	51 (46 to 57)	-5 (-11 to 0)	0.89 (0.80 to 1.00)
Northeast	Friuli-Venezia Giulia	Pordenone	60 to 69	82	65 (54 to 78)	17 (4 to 28)	1.27 (1.06 to 1.53)
Northeast	Friuli-Venezia Giulia	Pordenone	70 to 79	180	155 (129 to 184)	25 (-4 to 51)	1.16 (0.98 to 1.40)
Northeast	Friuli-Venezia Giulia	Pordenone	80 to 89	310	294 (231 to 356)	16 (-46 to 79)	1.05 (0.87 to 1.34)
Northeast	Friuli-Venezia Giulia	Pordenone	90+	290	226 (180 to 272)	64 (18 to 110)	1.28 (1.07 to 1.61)
Northeast	Friuli-Venezia Giulia	Trieste	0 to 59	51	46 (40 to 52)	5 (-1 to 11)	1.11 (0.98 to 1.29)
Northeast	Friuli-Venezia Giulia	Trieste	60 to 69	65	60 (49 to 72)	5 (-7 to 16)	1.08 (0.90 to 1.31)
Northeast	Friuli-Venezia Giulia	Trieste	70 to 79	184	163 (134 to 195)	21 (-11 to 50)	1.13 (0.94 to 1.37)
Northeast	Friuli-Venezia Giulia	Trieste	80 to 89	393	302 (237 to 363)	91 (30 to 156)	1.30 (1.08 to 1.66)
Northeast	Friuli-Venezia Giulia	Trieste	90+	301	229 (184 to 274)	72 (27 to 117)	1.32 (1.10 to 1.64)
Northeast	Friuli-Venezia Giulia	Udine	0 to 59	87	92 (83 to 100)	-5 (-13 to 4)	0.95 (0.87 to 1.04)
Northeast	Friuli-Venezia Giulia	Udine	60 to 69	149	142 (119 to 168)	7 (-19 to 30)	1.05 (0.88 to 1.25)
Northeast	Friuli-Venezia Giulia	Udine	70 to 79	361	321 (265 to 379)	40 (-18 to 96)	1.12 (0.95 to 1.36)
Northeast	Friuli-Venezia Giulia	Udine	80 to 89	618	603 (475 to 727)	15 (-109 to 143)	1.02 (0.85 to 1.30)
Northeast	Friuli-Venezia Giulia	Udine	90+	460	432 (344 to 518)	28 (-58 to 116)	1.07 (0.89 to 1.34)
Northeast	Trentino-Alto Adige	Bolzano	0 to 59	100	86 (79 to 95)	14 (5 to 21)	1.16 (1.06 to 1.27)

Macroregion	Region	Province	Age group	Observed deaths	Expected baseline	Excess deaths	SMRs
Northeast	Trentino-Alto Adige	Bolzano	60 to 69	143	95 (79 to 113)	48 (30 to 64)	1.50 (1.26 to 1.80)
Northeast	Trentino-Alto Adige	Bolzano	70 to 79	304	205 (169 to 242)	99 (62 to 135)	1.48 (1.25 to 1.79)
Northeast	Trentino-Alto Adige	Bolzano	80 to 89	616	411 (326 to 495)	205 (121 to 290)	1.50 (1.24 to 1.89)
Northeast	Trentino-Alto Adige	Bolzano	90+	445	300 (240 to 363)	145 (82 to 205)	1.48 (1.23 to 1.86)
Northeast	Trentino-Alto Adige	Trento	0 to 59	100	87 (79 to 94)	13 (6 to 21)	1.15 (1.06 to 1.26)
Northeast	Trentino-Alto Adige	Trento	60 to 69	116	110 (93 to 130)	6 (-14 to 23)	1.05 (0.89 to 1.25)
Northeast	Trentino-Alto Adige	Trento	70 to 79	352	231 (189 to 271)	121 (81 to 163)	1.53 (1.30 to 1.86)
Northeast	Trentino-Alto Adige	Trento	80 to 89	768	473 (375 to 569)	295 (199 to 393)	1.63 (1.35 to 2.05)
Northeast	Trentino-Alto Adige	Trento	90+	637	364 (290 to 442)	273 (195 to 347)	1.75 (1.44 to 2.20)
Northeast	Veneto	Belluno	0 to 59	26	36 (32 to 40)	-10 (-14 to -6)	0.73 (0.64 to 0.82)
Northeast	Veneto	Belluno	60 to 69	58	58 (48 to 70)	0 (-12 to 10)	1.00 (0.83 to 1.21)
Northeast	Veneto	Belluno	70 to 79	145	123 (100 to 146)	22 (-1 to 45)	1.18 (0.99 to 1.45)
Northeast	Veneto	Belluno	80 to 89	277	236 (186 to 284)	41 (-7 to 91)	1.18 (0.97 to 1.49)
Northeast	Veneto	Belluno	90+	220	175 (138 to 211)	45 (9 to 82)	1.26 (1.04 to 1.59)
Northeast	Veneto	Padova	0 to 59	143	155 (145 to 166)	-12 (-23 to -2)	0.92 (0.86 to 0.99)
Northeast	Veneto	Padova	60 to 69	188	194 (161 to 230)	-6 (-42 to 27)	0.97 (0.82 to 1.16)
Northeast	Veneto	Padova	70 to 79	465	414 (344 to 488)	51 (-23 to 121)	1.12 (0.95 to 1.35)
Northeast	Veneto	Padova	80 to 89	970	876 (693 to 1,056)	94 (-86 to 277)	1.11 (0.92 to 1.40)
Northeast	Veneto	Padova	90+	750	607 (485 to 731)	143 (19 to 265)	1.24 (1.03 to 1.55)
Northeast	Veneto	Rovigo	0 to 59	61	42 (38 to 48)	19 (13 to 23)	1.44 (1.28 to 1.61)
Northeast	Veneto	Rovigo	60 to 69	78	66 (54 to 78)	12 (0 to 24)	1.19 (1.00 to 1.43)
Northeast	Veneto	Rovigo	70 to 79	142	141 (116 to 168)	1 (-26 to 26)	1.00 (0.84 to 1.22)
Northeast	Veneto	Rovigo	80 to 89	340	298 (234 to 359)	42 (-19 to 106)	1.14 (0.95 to 1.46)
Northeast	Veneto	Rovigo	90+	250	196 (154 to 237)	54 (13 to 96)	1.28 (1.06 to 1.62)
Northeast	Veneto	Treviso	0 to 59	133	139 (129 to 150)	-6 (-17 to 4)	0.96 (0.89 to 1.03)
Northeast	Veneto	Treviso	60 to 69	185	182 (151 to 213)	3 (-28 to 34)	1.02 (0.87 to 1.23)
Northeast	Veneto	Treviso	70 to 79	440	377 (311 to 446)	63 (-6 to 129)	1.17 (0.99 to 1.42)
Northeast	Veneto	Treviso	80 to 89	961	776 (611 to 937)	185 (24 to 350)	1.24 (1.03 to 1.57)
Northeast	Veneto	Treviso	90+	786	586 (468 to 705)	200 (81 to 318)	1.34 (1.11 to 1.68)
Northeast	Veneto	Venezia	0 to 59	158	135 (125 to 145)	23 (13 to 33)	1.17 (1.09 to 1.26)
Northeast	Veneto	Venezia	60 to 69	203	199 (168 to 233)	4 (-30 to 35)	1.02 (0.87 to 1.21)
Northeast	Veneto	Venezia	70 to 79	555	451 (373 to 533)	104 (22 to 182)	1.23 (1.04 to 1.49)
Northeast	Veneto	Venezia	80 to 89	1,050	891 (698 to 1,077)	159 (-27 to 352)	1.18 (0.98 to 1.50)
Northeast	Veneto	Venezia	90+	746	566 (449 to 680)	180 (66 to 297)	1.32 (1.10 to 1.66)
Northeast	Veneto	Verona	0 to 59	174	147 (137 to 158)	27 (16 to 37)	1.18 (1.10 to 1.27)
Northeast	Veneto	Verona	60 to 69	199	185 (155 to 217)	14 (-18 to 44)	1.08 (0.92 to 1.29)
Northeast	Veneto	Verona	70 to 79	517	418 (347 to 494)	99 (23 to 170)	1.24 (1.05 to 1.49)
Northeast	Veneto	Verona	80 to 89	1,151	849 (670 to 1,023)	302 (128 to 481)	1.35 (1.13 to 1.72)
Northeast	Veneto	Verona	90+	852	600 (478 to 718)	252 (134 to 374)	1.42 (1.19 to 1.78)
Northeast	Veneto	Vicenza	0 to 59	133	149 (139 to 160)	-16 (-27 to -6)	0.89 (0.83 to 0.96)

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Northeast	Veneto	Vicenza	60 to 69	185	180 (151 to 213)	5 (-28 to 34)	1.03 (0.87 to 1.22)
Northeast	Veneto	Vicenza	70 to 79	459	392 (325 to 465)	67 (-6 to 134)	1.17 (0.99 to 1.41)
Northeast	Veneto	Vicenza	80 to 89	956	782 (620 to 942)	174 (14 to 336)	1.22 (1.01 to 1.54)
Northeast	Veneto	Vicenza	90+	671	517 (411 to 621)	154 (50 to 260)	1.30 (1.08 to 1.63)
Northwest	Liguria	Genova	0 to 59	195	143 (133 to 154)	52 (41 to 62)	1.36 (1.27 to 1.46)
Northwest	Liguria	Genova	60 to 69	302	216 (181 to 253)	86 (49 to 121)	1.40 (1.19 to 1.67)
Northwest	Liguria	Genova	70 to 79	804	512 (420 to 605)	292 (199 to 384)	1.57 (1.33 to 1.91)
Northwest	Liguria	Genova	80 to 89	1,756	1,139 (900 to 1,370)	617 (386 to 856)	1.54 (1.28 to 1.95)
Northwest	Liguria	Genova	90+	1,297	830 (658 to 994)	467 (303 to 639)	1.56 (1.30 to 1.97)
Northwest	Liguria	Imperia	0 to 59	42	39 (34 to 45)	3 (-3 to 8)	1.06 (0.94 to 1.22)
Northwest	Liguria	Imperia	60 to 69	70	57 (47 to 68)	13 (2 to 23)	1.22 (1.02 to 1.49)
Northwest	Liguria	Imperia	70 to 79	217	135 (111 to 160)	82 (57 to 106)	1.61 (1.36 to 1.96)
Northwest	Liguria	Imperia	80 to 89	447	298 (234 to 360)	149 (87 to 213)	1.50 (1.24 to 1.91)
Northwest	Liguria	Imperia	90+	272	195 (155 to 236)	77 (36 to 117)	1.39 (1.15 to 1.75)
Northwest	Liguria	La Spezia	0 to 59	49	40 (35 to 45)	9 (4 to 14)	1.22 (1.09 to 1.38)
Northwest	Liguria	La Spezia	60 to 69	77	51 (42 to 61)	26 (16 to 35)	1.51 (1.26 to 1.84)
Northwest	Liguria	La Spezia	70 to 79	206	127 (104 to 150)	79 (56 to 102)	1.63 (1.37 to 1.99)
Northwest	Liguria	La Spezia	80 to 89	389	279 (220 to 337)	110 (52 to 169)	1.39 (1.15 to 1.77)
Northwest	Liguria	La Spezia	90+	267	211 (167 to 256)	56 (11 to 100)	1.27 (1.04 to 1.60)
Northwest	Liguria	Savona	0 to 59	54	45 (40 to 51)	9 (3 to 14)	1.19 (1.06 to 1.34)
Northwest	Liguria	Savona	60 to 69	92	69 (57 to 83)	23 (9 to 35)	1.33 (1.11 to 1.61)
Northwest	Liguria	Savona	70 to 79	241	175 (145 to 208)	66 (33 to 96)	1.38 (1.16 to 1.67)
Northwest	Liguria	Savona	80 to 89	521	396 (314 to 477)	125 (44 to 207)	1.32 (1.09 to 1.66)
Northwest	Liguria	Savona	90+	375	266 (213 to 319)	109 (56 to 162)	1.41 (1.17 to 1.76)
Northwest	Lombardia	Bergamo	0 to 59	410	183 (172 to 196)	227 (214 to 238)	2.24 (2.10 to 2.39)
Northwest	Lombardia	Bergamo	60 to 69	841	247 (206 to 290)	594 (551 to 635)	3.40 (2.90 to 4.08)
Northwest	Lombardia	Bergamo	70 to 79	2,154	521 (431 to 612)	1,633 (1,542 to 1,723)	4.13 (3.52 to 4.99)
Northwest	Lombardia	Bergamo	80 to 89	3,505	952 (756 to 1,149)	2,553 (2,356 to 2,749)	3.68 (3.05 to 4.64)
Northwest	Lombardia	Bergamo	90+	1,792	549 (436 to 661)	1,243 (1,131 to 1,356)	3.26 (2.71 to 4.11)
Northwest	Lombardia	Brescia	0 to 59	336	196 (184 to 209)	140 (127 to 152)	1.71 (1.61 to 1.83)
Northwest	Lombardia	Brescia	60 to 69	627	261 (220 to 306)	366 (321 to 407)	2.40 (2.05 to 2.85)
Northwest	Lombardia	Brescia	70 to 79	1,719	563 (465 to 661)	1,156 (1,058 to 1,254)	3.06 (2.60 to 3.70)
Northwest	Lombardia	Brescia	80 to 89	2,957	1,116 (879 to 1,345)	1,841 (1,612 to 2,078)	2.65 (2.20 to 3.37)
Northwest	Lombardia	Brescia	90+	1,835	749 (597 to 892)	1,086 (943 to 1,238)	2.45 (2.06 to 3.07)
Northwest	Lombardia	Como	0 to 59	144	97 (88 to 105)	47 (39 to 56)	1.48 (1.37 to 1.63)
Northwest	Lombardia	Como	60 to 69	180	137 (116 to 162)	43 (18 to 64)	1.31 (1.11 to 1.56)
Northwest	Lombardia	Como	70 to 79	469	294 (243 to 349)	175 (120 to 226)	1.59 (1.34 to 1.93)
Northwest	Lombardia	Como	80 to 89	951	587 (468 to 707)	364 (244 to 483)	1.62 (1.35 to 2.03)
Northwest	Lombardia	Como	90+	596	383 (304 to 461)	213 (135 to 292)	1.56 (1.29 to 1.96)
Northwest	Lombardia	Cremona	0 to 59	132	59 (53 to 64)	73 (68 to 79)	2.25 (2.05 to 2.48)
Northwest	Lombardia	Cremona	60 to 69	226	82 (68 to 98)	144 (128 to 158)	2.75 (2.31 to 3.30)
Northwest	Lombardia	Cremona	70 to 79	713	196 (161 to 230)	517 (483 to 552)	3.64 (3.10 to 4.43)
Northwest	Lombardia	Cremona	80 to 89	1,265	402 (320 to 488)	863 (777 to 945)	3.14 (2.59 to 3.95)
Northwest	Lombardia	Cremona	90+	820	249 (197 to 299)	571 (521 to 623)	3.30 (2.74 to 4.15)

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Northwest	Lombardia	Lecco	0 to 59	78	50 (45 to 56)	28 (22 to 33)	1.55 (1.39 to 1.74)
Northwest	Lombardia	Lecco	60 to 69	114	69 (57 to 81)	45 (33 to 57)	1.66 (1.40 to 2.01)
Northwest	Lombardia	Lecco	70 to 79	369	149 (122 to 177)	220 (192 to 247)	2.48 (2.09 to 3.02)
Northwest	Lombardia	Lecco	80 to 89	708	327 (260 to 395)	381 (313 to 448)	2.16 (1.79 to 2.73)
Northwest	Lombardia	Lecco	90+	453	200 (159 to 240)	253 (213 to 294)	2.26 (1.88 to 2.85)
Northwest	Lombardia	Lodi	0 to 59	77	40 (36 to 46)	37 (31 to 41)	1.90 (1.69 to 2.15)
Northwest	Lombardia	Lodi	60 to 69	149	52 (43 to 63)	97 (86 to 106)	2.84 (2.38 to 3.46)
Northwest	Lombardia	Lodi	70 to 79	417	118 (98 to 140)	299 (277 to 319)	3.52 (2.98 to 4.27)
Northwest	Lombardia	Lodi	80 to 89	578	221 (175 to 266)	357 (312 to 403)	2.62 (2.17 to 3.30)
Northwest	Lombardia	Lodi	90+	317	127 (100 to 154)	190 (163 to 217)	2.50 (2.05 to 3.18)
Northwest	Lombardia	Mantova	0 to 59	96	74 (67 to 81)	22 (15 to 29)	1.29 (1.19 to 1.42)
Northwest	Lombardia	Mantova	60 to 69	138	87 (72 to 103)	51 (35 to 66)	1.59 (1.34 to 1.91)
Northwest	Lombardia	Mantova	70 to 79	384	197 (162 to 231)	187 (153 to 222)	1.95 (1.66 to 2.37)
Northwest	Lombardia	Mantova	80 to 89	878	428 (339 to 514)	450 (364 to 539)	2.05 (1.71 to 2.59)
Northwest	Lombardia	Mantova	90+	569	314 (248 to 377)	255 (192 to 321)	1.81 (1.51 to 2.30)
Northwest	Lombardia	Milano	0 to 59	654	531 (506 to 556)	123 (98 to 148)	1.23 (1.18 to 1.29)
Northwest	Lombardia	Milano	60 to 69	982	637 (539 to 742)	345 (240 to 443)	1.54 (1.32 to 1.82)
Northwest	Lombardia	Milano	70 to 79	2,684	1,491 (1,230 to 1,754)	1,193 (930 to 1,454)	1.80 (1.53 to 2.18)
Northwest	Lombardia	Milano	80 to 89	5,684	3,034 (2,399 to 3,640)	2,650 (2,044 to 3,285)	1.87 (1.56 to 2.37)
Northwest	Lombardia	Milano	90+	3,745	1,864 (1,488 to 2,230)	1,881 (1,515 to 2,257)	2.01 (1.68 to 2.52)
Northwest	Lombardia	Monza e della Brianza	0 to 59	176	129 (120 to 139)	47 (37 to 56)	1.37 (1.27 to 1.47)
Northwest	Lombardia	Monza e della Brianza	60 to 69	267	173 (145 to 203)	94 (64 to 122)	1.54 (1.31 to 1.84)
Northwest	Lombardia	Monza e della Brianza	70 to 79	680	379 (314 to 449)	301 (231 to 366)	1.79 (1.51 to 2.17)
Northwest	Lombardia	Monza e della Brianza	80 to 89	1,401	789 (624 to 950)	612 (451 to 777)	1.78 (1.47 to 2.24)
Northwest	Lombardia	Monza e della Brianza	90+	807	449 (359 to 541)	358 (266 to 448)	1.80 (1.49 to 2.25)
Northwest	Lombardia	Pavia	0 to 59	155	107 (99 to 116)	48 (39 to 56)	1.44 (1.34 to 1.56)
Northwest	Lombardia	Pavia	60 to 69	319	143 (121 to 168)	176 (151 to 198)	2.23 (1.90 to 2.64)
Northwest	Lombardia	Pavia	70 to 79	695	304 (251 to 359)	391 (336 to 444)	2.28 (1.93 to 2.77)
Northwest	Lombardia	Pavia	80 to 89	1,391	652 (512 to 783)	739 (608 to 879)	2.13 (1.78 to 2.71)
Northwest	Lombardia	Pavia	90+	866	429 (340 to 513)	437 (353 to 526)	2.02 (1.69 to 2.54)
Northwest	Lombardia	Sondrio	0 to 59	56	32 (28 to 36)	24 (20 to 28)	1.77 (1.57 to 2.01)
Northwest	Lombardia	Sondrio	60 to 69	81	45 (37 to 55)	36 (26 to 44)	1.80 (1.48 to 2.18)
Northwest	Lombardia	Sondrio	70 to 79	166	97 (80 to 117)	69 (49 to 86)	1.70 (1.41 to 2.09)
Northwest	Lombardia	Sondrio	80 to 89	342	191 (150 to 232)	151 (110 to 192)	1.79 (1.48 to 2.27)
Northwest	Lombardia	Sondrio	90+	189	131 (102 to 159)	58 (30 to 87)	1.45 (1.19 to 1.86)
Northwest	Lombardia	Varese	0 to 59	168	145 (135 to 156)	23 (12 to 33)	1.16 (1.07 to 1.25)
Northwest	Lombardia	Varese	60 to 69	259	196 (163 to 228)	63 (31 to 96)	1.32 (1.13 to 1.58)
Northwest	Lombardia	Varese	70 to 79	609	413 (339 to 486)	196 (123 to 270)	1.47 (1.25 to 1.79)
Northwest	Lombardia	Varese	80 to 89	1,266	913 (718 to 1,099)	353 (167 to 548)	1.39 (1.15 to 1.76)
Northwest	Lombardia	Varese	90+	885	569 (454 to 678)	316 (207 to 431)	1.55 (1.31 to 1.95)
Northwest	Piemonte	Alessandria	0 to 59	108	78 (71 to 85)	30 (23 to 37)	1.39 (1.27 to 1.52)

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Northwest	Piemonte	Alessandria	60 to 69	205	125 (105 to 148)	80 (57 to 100)	1.64 (1.38 to 1.96)
Northwest	Piemonte	Alessandria	70 to 79	505	265 (218 to 313)	240 (192 to 287)	1.91 (1.62 to 2.32)
Northwest	Piemonte	Alessandria	80 to 89	1,015	576 (457 to 692)	439 (323 to 558)	1.76 (1.47 to 2.22)
Northwest	Piemonte	Alessandria	90+	678	396 (314 to 475)	282 (203 to 364)	1.71 (1.43 to 2.16)
Northwest	Piemonte	Asti	0 to 59	43	39 (34 to 44)	4 (-1 to 9)	1.11 (0.99 to 1.25)
Northwest	Piemonte	Asti	60 to 69	77	55 (46 to 66)	22 (11 to 31)	1.39 (1.17 to 1.69)
Northwest	Piemonte	Asti	70 to 79	191	123 (101 to 146)	68 (45 to 90)	1.56 (1.31 to 1.89)
Northwest	Piemonte	Asti	80 to 89	387	271 (213 to 326)	116 (61 to 174)	1.43 (1.19 to 1.82)
Northwest	Piemonte	Asti	90+	334	204 (162 to 246)	130 (88 to 172)	1.64 (1.36 to 2.06)
Northwest	Piemonte	Biella	0 to 59	32	30 (26 to 35)	2 (-3 to 6)	1.05 (0.92 to 1.21)
Northwest	Piemonte	Biella	60 to 69	55	56 (46 to 67)	-1 (-12 to 9)	0.98 (0.82 to 1.19)
Northwest	Piemonte	Biella	70 to 79	179	110 (91 to 131)	69 (48 to 88)	1.62 (1.37 to 1.97)
Northwest	Piemonte	Biella	80 to 89	423	226 (178 to 275)	197 (148 to 245)	1.87 (1.54 to 2.37)
Northwest	Piemonte	Biella	90+	298	163 (129 to 198)	135 (100 to 169)	1.83 (1.51 to 2.31)
Northwest	Piemonte	Cuneo	0 to 59	116	104 (95 to 113)	12 (3 to 21)	1.11 (1.03 to 1.22)
Northwest	Piemonte	Cuneo	60 to 69	166	135 (112 to 161)	31 (5 to 54)	1.23 (1.03 to 1.48)
Northwest	Piemonte	Cuneo	70 to 79	397	315 (261 to 369)	82 (28 to 136)	1.26 (1.08 to 1.52)
Northwest	Piemonte	Cuneo	80 to 89	904	708 (559 to 855)	196 (49 to 345)	1.28 (1.06 to 1.62)
Northwest	Piemonte	Cuneo	90+	629	442 (353 to 529)	187 (100 to 276)	1.42 (1.19 to 1.78)
Northwest	Piemonte	Novara	0 to 59	92	64 (58 to 70)	28 (22 to 34)	1.44 (1.31 to 1.60)
Northwest	Piemonte	Novara	60 to 69	126	93 (77 to 111)	33 (15 to 49)	1.35 (1.14 to 1.63)
Northwest	Piemonte	Novara	70 to 79	288	181 (149 to 214)	107 (74 to 139)	1.59 (1.34 to 1.94)
Northwest	Piemonte	Novara	80 to 89	671	406 (319 to 490)	265 (181 to 352)	1.65 (1.37 to 2.10)
Northwest	Piemonte	Novara	90+	454	259 (206 to 313)	195 (141 to 248)	1.75 (1.45 to 2.20)
Northwest	Piemonte	Torino	0 to 59	458	382 (362 to 402)	76 (56 to 96)	1.20 (1.14 to 1.26)
Northwest	Piemonte	Torino	60 to 69	716	525 (444 to 615)	191 (101 to 272)	1.36 (1.17 to 1.61)
Northwest	Piemonte	Torino	70 to 79	1,844	1,214 (1,001 to 1,437)	630 (407 to 843)	1.52 (1.28 to 1.84)
Northwest	Piemonte	Torino	80 to 89	3,922	2,593 (2,047 to 3,128)	1,329 (794 to 1,875)	1.51 (1.25 to 1.92)
Northwest	Piemonte	Torino	90+	2,345	1,507 (1,203 to 1,802)	838 (543 to 1,142)	1.56 (1.30 to 1.95)
Northwest	Piemonte	Verbano-Cusio-Ossola	0 to 59	37	29 (25 to 33)	8 (4 to 12)	1.29 (1.12 to 1.47)
Northwest	Piemonte	Verbano-Cusio-Ossola	60 to 69	49	45 (37 to 54)	4 (-5 to 12)	1.10 (0.91 to 1.34)
Northwest	Piemonte	Verbano-Cusio-Ossola	70 to 79	141	99 (80 to 117)	42 (24 to 61)	1.43 (1.20 to 1.77)
Northwest	Piemonte	Verbano-Cusio-Ossola	80 to 89	296	196 (153 to 236)	100 (60 to 143)	1.51 (1.26 to 1.93)
Northwest	Piemonte	Verbano-Cusio-Ossola	90+	167	131 (104 to 160)	36 (7 to 63)	1.27 (1.04 to 1.61)
Northwest	Piemonte	Vercelli	0 to 59	35	34 (31 to 39)	1 (-4 to 4)	1.02 (0.91 to 1.14)
Northwest	Piemonte	Vercelli	60 to 69	84	54 (44 to 64)	30 (20 to 40)	1.56 (1.30 to 1.89)
Northwest	Piemonte	Vercelli	70 to 79	183	104 (85 to 123)	79 (60 to 98)	1.76 (1.49 to 2.14)
Northwest	Piemonte	Vercelli	80 to 89	397	232 (181 to 281)	165 (116 to 216)	1.71 (1.41 to 2.19)
Northwest	Piemonte	Vercelli	90+	250	158 (124 to 190)	92 (60 to 126)	1.59 (1.31 to 2.02)
Northwest	Valle d'Aosta	Aosta	0 to 59	20	22 (19 to 26)	-2 (-6 to 1)	0.90 (0.78 to 1.04)
Northwest	Valle d'Aosta	Aosta	60 to 69	50	34 (28 to 41)	16 (9 to 22)	1.47 (1.21 to 1.79)

Macroregion	Region	Province	Age group	Observed deaths	Expected baseline	Excess deaths	SMRs
Northwest	Valle d'Aosta	Aosta	70 to 79	104	73 (60 to 88)	31 (16 to 44)	1.42 (1.18 to 1.73)
Northwest	Valle d'Aosta	Aosta	80 to 89	200	137 (108 to 167)	63 (33 to 92)	1.46 (1.20 to 1.86)
Northwest	Valle d'Aosta	Aosta	90+	145	97 (76 to 118)	48 (27 to 69)	1.50 (1.23 to 1.92)
South	Abruzzo	Chieti	0 to 59	84	69 (63 to 76)	15 (8 to 21)	1.21 (1.10 to 1.34)
South	Abruzzo	Chieti	60 to 69	113	96 (80 to 113)	17 (0 to 33)	1.18 (1.00 to 1.42)
South	Abruzzo	Chieti	70 to 79	208	207 (171 to 247)	1 (-39 to 37)	1.00 (0.84 to 1.21)
South	Abruzzo	Chieti	80 to 89	539	471 (371 to 568)	68 (-29 to 168)	1.14 (0.95 to 1.45)
South	Abruzzo	Chieti	90+	341	299 (238 to 359)	42 (-18 to 103)	1.14 (0.95 to 1.44)
South	Abruzzo	L'Aquila	0 to 59	38	52 (47 to 58)	-14 (-20 to -9)	0.73 (0.65 to 0.81)
South	Abruzzo	L'Aquila	60 to 69	72	76 (62 to 90)	-4 (-18 to 10)	0.95 (0.80 to 1.15)
South	Abruzzo	L'Aquila	70 to 79	157	153 (126 to 181)	4 (-24 to 31)	1.03 (0.87 to 1.25)
South	Abruzzo	L'Aquila	80 to 89	340	333 (262 to 403)	7 (-63 to 78)	1.02 (0.84 to 1.30)
South	Abruzzo	L'Aquila	90+	262	243 (191 to 293)	19 (-31 to 71)	1.08 (0.90 to 1.37)
South	Abruzzo	Pescara	0 to 59	64	56 (51 to 62)	8 (2 to 13)	1.15 (1.03 to 1.27)
South	Abruzzo	Pescara	60 to 69	97	65 (54 to 78)	32 (19 to 43)	1.48 (1.25 to 1.81)
South	Abruzzo	Pescara	70 to 79	209	153 (126 to 184)	56 (25 to 83)	1.37 (1.14 to 1.66)
South	Abruzzo	Pescara	80 to 89	434	343 (272 to 415)	91 (19 to 162)	1.26 (1.05 to 1.59)
South	Abruzzo	Pescara	90+	275	220 (173 to 265)	55 (10 to 102)	1.25 (1.04 to 1.59)
South	Abruzzo	Teramo	0 to 59	59	55 (50 to 61)	4 (-2 to 9)	1.07 (0.97 to 1.19)
South	Abruzzo	Teramo	60 to 69	87	73 (60 to 88)	14 (-1 to 27)	1.19 (0.99 to 1.46)
South	Abruzzo	Teramo	70 to 79	174	155 (127 to 185)	19 (-11 to 47)	1.12 (0.94 to 1.37)
South	Abruzzo	Teramo	80 to 89	396	345 (272 to 417)	51 (-21 to 124)	1.15 (0.95 to 1.45)
South	Abruzzo	Teramo	90+	246	198 (157 to 241)	48 (5 to 89)	1.24 (1.02 to 1.57)
South	Basilicata	Matera	0 to 59	41	40 (35 to 45)	1 (-4 to 6)	1.02 (0.91 to 1.16)
South	Basilicata	Matera	60 to 69	47	48 (40 to 58)	-1 (-11 to 7)	0.98 (0.81 to 1.19)
South	Basilicata	Matera	70 to 79	82	97 (80 to 116)	-15 (-34 to 2)	0.85 (0.71 to 1.03)
South	Basilicata	Matera	80 to 89	243	208 (164 to 250)	35 (-7 to 79)	1.17 (0.97 to 1.48)
South	Basilicata	Matera	90+	132	114 (89 to 137)	18 (-5 to 43)	1.16 (0.96 to 1.48)
South	Basilicata	Potenza	0 to 59	66	72 (66 to 80)	-6 (-14 to 0)	0.91 (0.83 to 1.01)
South	Basilicata	Potenza	60 to 69	103	94 (78 to 111)	9 (-8 to 25)	1.10 (0.92 to 1.32)
South	Basilicata	Potenza	70 to 79	177	178 (146 to 210)	-1 (-33 to 31)	1.00 (0.84 to 1.21)
South	Basilicata	Potenza	80 to 89	473	453 (356 to 544)	20 (-71 to 117)	1.05 (0.87 to 1.33)
South	Basilicata	Potenza	90+	329	280 (224 to 334)	49 (-5 to 105)	1.17 (0.98 to 1.47)
South	Calabria	Catanzaro	0 to 59	69	64 (58 to 71)	5 (-2 to 11)	1.07 (0.97 to 1.19)
South	Calabria	Catanzaro	60 to 69	104	93 (78 to 111)	11 (-7 to 26)	1.11 (0.94 to 1.34)
South	Calabria	Catanzaro	70 to 79	172	179 (148 to 212)	-7 (-40 to 24)	0.96 (0.81 to 1.16)
South	Calabria	Catanzaro	80 to 89	368	352 (279 to 425)	16 (-57 to 89)	1.05 (0.87 to 1.32)
South	Calabria	Catanzaro	90+	227	221 (175 to 265)	6 (-38 to 52)	1.03 (0.86 to 1.30)
South	Calabria	Cosenza	0 to 59	147	145 (134 to 158)	2 (-11 to 13)	1.01 (0.93 to 1.10)
South	Calabria	Cosenza	60 to 69	194	187 (157 to 221)	7 (-27 to 37)	1.04 (0.88 to 1.24)
South	Calabria	Cosenza	70 to 79	386	350 (288 to 411)	36 (-25 to 98)	1.10 (0.94 to 1.34)
South	Calabria	Cosenza	80 to 89	832	759 (598 to 921)	73 (-89 to 234)	1.10 (0.90 to 1.39)
South	Calabria	Cosenza	90+	460	418 (335 to 499)	42 (-39 to 125)	1.10 (0.92 to 1.38)
South	Calabria	Crotone	0 to 59	32	40 (36 to 46)	-8 (-14 to -4)	0.79 (0.70 to 0.90)

Macroregion	Region	Province	Age group	Observed deaths	Expected baseline	Excess deaths	SMRs
South	Calabria	Crotone	60 to 69	43	45 (37 to 55)	-2 (-12 to 6)	0.95 (0.78 to 1.18)
South	Calabria	Crotone	70 to 79	114	84 (69 to 101)	30 (13 to 45)	1.36 (1.13 to 1.66)
South	Calabria	Crotone	80 to 89	178	167 (130 to 201)	11 (-23 to 48)	1.07 (0.89 to 1.37)
South	Calabria	Crotone	90+	95	75 (59 to 90)	20 (5 to 36)	1.27 (1.05 to 1.61)
South	Calabria	Reggio di Calabria	0 to 59	100	102 (93 to 111)	-2 (-11 to 7)	0.99 (0.90 to 1.08)
South	Calabria	Reggio di Calabria	60 to 69	160	131 (110 to 155)	29 (5 to 50)	1.22 (1.03 to 1.45)
South	Calabria	Reggio di Calabria	70 to 79	300	268 (221 to 317)	32 (-17 to 79)	1.12 (0.95 to 1.35)
South	Calabria	Reggio di Calabria	80 to 89	598	549 (432 to 659)	49 (-61 to 166)	1.09 (0.91 to 1.38)
South	Calabria	Reggio di Calabria	90+	397	355 (284 to 430)	42 (-33 to 113)	1.12 (0.92 to 1.40)
South	Calabria	Vibo Valentia	0 to 59	26	31 (27 to 36)	-5 (-10 to -1)	0.83 (0.72 to 0.97)
South	Calabria	Vibo Valentia	60 to 69	49	39 (31 to 48)	10 (1 to 18)	1.25 (1.03 to 1.56)
South	Calabria	Vibo Valentia	70 to 79	69	81 (66 to 98)	-12 (-29 to 3)	0.85 (0.71 to 1.04)
South	Calabria	Vibo Valentia	80 to 89	160	155 (122 to 188)	5 (-28 to 38)	1.03 (0.85 to 1.31)
South	Calabria	Vibo Valentia	90+	111	93 (74 to 114)	18 (-3 to 37)	1.19 (0.98 to 1.50)
South	Campania	Avellino	0 to 59	109	82 (75 to 90)	27 (19 to 34)	1.32 (1.21 to 1.45)
South	Campania	Avellino	60 to 69	147	108 (89 to 129)	39 (18 to 58)	1.37 (1.14 to 1.65)
South	Campania	Avellino	70 to 79	217	218 (178 to 258)	-1 (-41 to 39)	1.00 (0.84 to 1.22)
South	Campania	Avellino	80 to 89	507	456 (360 to 545)	51 (-38 to 147)	1.11 (0.93 to 1.41)
South	Campania	Avellino	90+	339	307 (245 to 367)	32 (-28 to 94)	1.10 (0.92 to 1.38)
South	Campania	Benevento	0 to 59	54	56 (50 to 62)	-2 (-8 to 4)	0.97 (0.88 to 1.07)
South	Campania	Benevento	60 to 69	76	73 (61 to 88)	3 (-12 to 15)	1.03 (0.86 to 1.25)
South	Campania	Benevento	70 to 79	138	145 (119 to 172)	-7 (-34 to 19)	0.95 (0.80 to 1.16)
South	Campania	Benevento	80 to 89	304	316 (249 to 381)	-12 (-77 to 55)	0.96 (0.80 to 1.22)
South	Campania	Benevento	90+	226	197 (157 to 237)	29 (-11 to 69)	1.15 (0.95 to 1.44)
South	Campania	Caserta	0 to 59	186	215 (201 to 229)	-29 (-43 to -15)	0.87 (0.81 to 0.92)
South	Campania	Caserta	60 to 69	231	243 (202 to 285)	-12 (-54 to 29)	0.95 (0.81 to 1.14)
South	Campania	Caserta	70 to 79	493	461 (383 to 543)	32 (-50 to 110)	1.07 (0.91 to 1.29)
South	Campania	Caserta	80 to 89	707	735 (581 to 887)	-28 (-180 to 126)	0.96 (0.80 to 1.22)
South	Campania	Caserta	90+	355	342 (272 to 408)	13 (-53 to 83)	1.04 (0.87 to 1.31)
South	Campania	Napoli	0 to 59	747	704 (671 to 737)	43 (10 to 76)	1.06 (1.01 to 1.11)
South	Campania	Napoli	60 to 69	874	846 (711 to 988)	28 (-114 to 163)	1.03 (0.88 to 1.23)
South	Campania	Napoli	70 to 79	1,703	1,605 (1,333 to 1,887)	98 (-184 to 370)	1.06 (0.90 to 1.28)
South	Campania	Napoli	80 to 89	2,367	2,457 (1,944 to 2,948)	-90 (-581 to 423)	0.96 (0.80 to 1.22)
South	Campania	Napoli	90+	1,179	1,120 (893 to 1,345)	59 (-166 to 286)	1.05 (0.88 to 1.32)
South	Campania	Salerno	0 to 59	241	235 (219 to 250)	6 (-9 to 22)	1.03 (0.96 to 1.10)
South	Campania	Salerno	60 to 69	280	289 (241 to 343)	-9 (-63 to 39)	0.97 (0.82 to 1.16)
South	Campania	Salerno	70 to 79	578	543 (447 to 643)	35 (-65 to 131)	1.06 (0.90 to 1.29)
South	Campania	Salerno	80 to 89	1,060	1,104 (876 to 1,330)	-44 (-270 to 184)	0.96 (0.80 to 1.21)
South	Campania	Salerno	90+	608	643 (513 to 776)	-35 (-168 to 95)	0.95 (0.78 to 1.19)
South	Molise	Campobasso	0 to 59	30	37 (33 to 42)	-7 (-12 to -3)	0.81 (0.72 to 0.91)
South	Molise	Campobasso	60 to 69	68	58 (47 to 70)	10 (-2 to 21)	1.18 (0.97 to 1.43)
South	Molise	Campobasso	70 to 79	121	122 (102 to 147)	-1 (-26 to 19)	0.99 (0.83 to 1.19)
South	Molise	Campobasso	80 to 89	293	263 (207 to 319)	30 (-26 to 86)	1.11 (0.92 to 1.41)
South	Molise	Campobasso	90+	191	177 (140 to 214)	14 (-23 to 51)	1.08 (0.89 to 1.37)

Macroregion	Region	Province	Age group	Observed deaths	Expected baseline	Excess deaths	SMRs
South	Molise	Isernia	0 to 59	15	15 (13 to 18)	0 (-3 to 2)	0.97 (0.82 to 1.16)
South	Molise	Isernia	60 to 69	22	25 (20 to 31)	-3 (-9 to 2)	0.89 (0.71 to 1.11)
South	Molise	Isernia	70 to 79	46	47 (38 to 57)	-1 (-11 to 8)	0.98 (0.80 to 1.21)
South	Molise	Isernia	80 to 89	118	112 (88 to 136)	6 (-18 to 30)	1.06 (0.87 to 1.34)
South	Molise	Isernia	90+	85	80 (63 to 98)	5 (-13 to 22)	1.06 (0.87 to 1.36)
South	Puglia	Bari	0 to 59	224	210 (196 to 225)	14 (-1 to 28)	1.07 (0.99 to 1.14)
South	Puglia	Bari	60 to 69	304	267 (224 to 316)	37 (-12 to 80)	1.14 (0.96 to 1.36)
South	Puglia	Bari	70 to 79	639	555 (458 to 651)	84 (-12 to 181)	1.15 (0.98 to 1.39)
South	Puglia	Bari	80 to 89	1,204	1,110 (880 to 1,338)	94 (-134 to 324)	1.08 (0.90 to 1.37)
South	Puglia	Bari	90+	815	678 (542 to 813)	137 (2 to 273)	1.20 (1.00 to 1.50)
South	Puglia	Barletta-Andria-Trani	0 to 59	79	75 (68 to 82)	4 (-3 to 11)	1.05 (0.96 to 1.16)
South	Puglia	Barletta-Andria-Trani	60 to 69	83	83 (69 to 98)	0 (-15 to 14)	1.00 (0.85 to 1.20)
South	Puglia	Barletta-Andria-Trani	70 to 79	197	177 (145 to 208)	20 (-11 to 52)	1.11 (0.95 to 1.35)
South	Puglia	Barletta-Andria-Trani	80 to 89	378	330 (260 to 396)	48 (-18 to 118)	1.15 (0.95 to 1.45)
South	Puglia	Barletta-Andria-Trani	90+	211	168 (134 to 202)	43 (9 to 77)	1.26 (1.05 to 1.58)
South	Puglia	Brindisi	0 to 59	75	72 (65 to 80)	3 (-5 to 10)	1.04 (0.94 to 1.15)
South	Puglia	Brindisi	60 to 69	96	92 (77 to 110)	4 (-14 to 19)	1.04 (0.87 to 1.25)
South	Puglia	Brindisi	70 to 79	251	206 (170 to 244)	45 (7 to 81)	1.22 (1.03 to 1.48)
South	Puglia	Brindisi	80 to 89	481	407 (319 to 494)	74 (-13 to 162)	1.18 (0.97 to 1.51)
South	Puglia	Brindisi	90+	276	229 (180 to 277)	47 (-1 to 96)	1.20 (1.00 to 1.53)
South	Puglia	Foggia	0 to 59	134	126 (116 to 135)	8 (-1 to 18)	1.07 (0.99 to 1.15)
South	Puglia	Foggia	60 to 69	159	143 (119 to 168)	16 (-9 to 40)	1.11 (0.95 to 1.33)
South	Puglia	Foggia	70 to 79	341	295 (245 to 349)	46 (-8 to 96)	1.15 (0.98 to 1.39)
South	Puglia	Foggia	80 to 89	717	592 (470 to 709)	125 (8 to 247)	1.21 (1.01 to 1.52)
South	Puglia	Foggia	90+	452	360 (287 to 430)	92 (22 to 165)	1.25 (1.05 to 1.58)
South	Puglia	Lecce	0 to 59	166	132 (122 to 143)	34 (23 to 44)	1.26 (1.16 to 1.37)
South	Puglia	Lecce	60 to 69	189	187 (157 to 222)	2 (-33 to 32)	1.01 (0.85 to 1.21)
South	Puglia	Lecce	70 to 79	453	418 (346 to 490)	35 (-37 to 107)	1.08 (0.92 to 1.31)
South	Puglia	Lecce	80 to 89	904	851 (672 to 1,023)	53 (-119 to 232)	1.06 (0.88 to 1.35)
South	Puglia	Lecce	90+	563	520 (413 to 624)	43 (-61 to 150)	1.08 (0.90 to 1.36)
South	Puglia	Taranto	0 to 59	102	100 (91 to 109)	2 (-7 to 11)	1.02 (0.93 to 1.12)
South	Puglia	Taranto	60 to 69	132	130 (109 to 154)	2 (-22 to 23)	1.02 (0.86 to 1.21)
South	Puglia	Taranto	70 to 79	317	295 (241 to 348)	22 (-31 to 76)	1.08 (0.91 to 1.31)
South	Puglia	Taranto	80 to 89	584	560 (445 to 674)	24 (-90 to 139)	1.04 (0.87 to 1.31)
South	Puglia	Taranto	90+	364	314 (251 to 375)	50 (-11 to 113)	1.16 (0.97 to 1.45)

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