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Corrigendum

COVID-19 VACCINATION, ALL-CAUSE MORTALITY, AND HOSPITALIZATION FOR CANCER: 30-MONTH COHORT STUDY IN AN ITALIAN PROVINCE

Cecilia Acuti Martellucci[1], Marco De Benedictis[2], Maria Elena Flacco[3], Lamberto Manzoli[1,3]*

[1] Department of Medical and Surgical Sciences, University of Bologna, 40100 Bologna, Italy
[2] Local Health Unit of Pescara, 65124 Pescara, Italy
[3] Department of Environmental and Prevention Sciences, University of Ferrara, 44121 Ferrara, Italy

* **Corresponding author:** Prof. Lamberto Manzoli, Department of Medical and Surgical Sciences, University of Bologna, 40100 Bologna, Italy. Tel.: +39 3474727282, E-mail: lmanzoli@post.harvard.edu

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After publication of the above article, several researchers independently re-ran the analyses using our shared dataset. While all analyses were confirmed to be correct, one researcher—whom we sincerely thank—noted that the number of deaths in our database matched official Italian Census data for 2021 and 2022 but appeared lower for 2023.

Following this observation, we requested all original datasets again from the Local Health Unit and repeated the verification. The datasets on hospital admissions, vaccinations, co-payment exemptions, and demographics for 2021–2022 were accurate. However, the demographic dataset for 2023 differed from the one initially analyzed and was found to have been based on a non-final version.

After obtaining the updated 2023 dataset, we identified **1,043 additional deaths** that had occurred in 2023. These deaths were incorporated into the dataset, increasing the total number of recorded deaths from **6,512 to 7,555**, and all mortality analyses were re-run. Notably, some individuals who died in 2023 were not present in the original 2020 master demographic file and therefore could not be retrospectively linked. Consequently, although the updated data now include the 1,043 additional deaths, the total number of deaths for 2023 in our database still does not perfectly match the official Italian Census (unlike 2021 and 2022).

Re-analysis confirmed that the main findings remained unchanged. Compared with the unvaccinated group, the adjusted hazard ratio (HR) for death among individuals with **≥1 vaccine**

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dose remained **0.42**, while the HR for those with **≥3 doses** changed slightly from **0.65 to 0.70**, remaining highly significant. Nevertheless, it is possible that a small proportion (<10%) of deaths occurring during follow-up were not captured. Although this is unlikely to substantially alter the results, the updated mortality analyses should be regarded as **ad interim**.

We therefore provide below the corrected numbers of deaths and hazard ratios, as well as the revised paragraphs and updated tables from the article.

REVISED PARAGRAPHS

Section: "All-cause mortality"

Overall, 7,555 subjects died during the follow-up (2.55% of the sample; Table 2). Mortality among the unvaccinated (3.85%) was markedly higher than among those who received at least one vaccine dose (2.29%; $p<0.001$, chi-squared test) or at least three doses (1.73% vs. 2.36% in the unvaccinated; $p<0.001$). Multivariate analyses confirmed the univariate results, showing a significantly lower risk of death for the groups "≥1 dose" (HR: 0.42; 95% CI: 0.40–0.45) and "≥3 doses" (HR: 0.70; 95% CI: 0.67–0.73; Table 3) compared with the unvaccinated. Similar findings were observed in all stratified (Tables S1–S2) and sensitivity analyses (Tables S3–S4).

Section: "Strengths and limitations"

Second, through data sharing with external researchers, we realized that the demographic dataset for 2023 initially used was not the final version. Analyses were therefore re-run using the final, official 2023 dataset, yielding no substantial changes. However, it remains possible that a small fraction (<10%) of deaths occurring during follow-up were not captured, as the 2023 demographic database may still be incomplete. While these omissions are unlikely to substantially affect the findings, the present mortality analyses should be regarded as ad interim.

Table 2 (update): Main outcomes, overall and by COVID-19 vaccine status [1]

	Overall	Unvaccinated	≥1 Dose	Unvaccinated	≥3 Doses
All-cause death, N % (n)	296,015 2.55 (7555)	49,265 3.85 (1897)	246,750 * 2.29 (5658)	48,512 2.36 (1144)	183,999 1.73 (3178) *

[1] For details and definitions please see the text.

Table 3 (update): Adjusted hazards ratios (95 % confidence interval – CI) [A] of all-cause death, all cancers, and selected cancers. The unvaccinated group is the reference category for all analyses. [1]

	≥1 Dose [B] HR (95 % CI)	p*	≥3 Doses [C] HR (95 % CI)	p*
All-cause death	0.42 (0.40-0.45)	<0.001	0.70 (0.67-0.73)	<0.001

[1] For details and definitions please see the text.

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Table S1 (update): Adjusted hazards ratios (95 % confidence interval – CI) A of all-cause death, all cancers, and selected cancers, stratified by gender and infection status. The unvaccinated group is the reference category for all analyses. [1]

	Male		**Female**		**No previous SARS-CoV-2 infection**		**Previous SARS-CoV-2 infection**	
	≥1 Dose HR (95 % CI)	**≥3 Doses HR (95 % CI)**	**≥1 Dose HR (95 % CI)**	**≥3 Doses HR (95 % CI)**	**≥1 Dose HR (95 % CI)**	**≥3 Doses HR (95 % CI)**	**≥1 Dose HR (95 % CI)**	**≥3 Doses HR (95 % CI)**
All-cause death	0.48 (0.45-0.53)	0.75 (0.71-0.79)	0.39 (0.36-0.42)	0.67 (0.64-0.71)	0.43 (0.40-0.46)	0.70 (0.67-0.74)	0.40 (0.35-0.44)	0.68 (0.64-0.73)

[1] For details and definitions please see the text