

Where do COVID-19 patients die?

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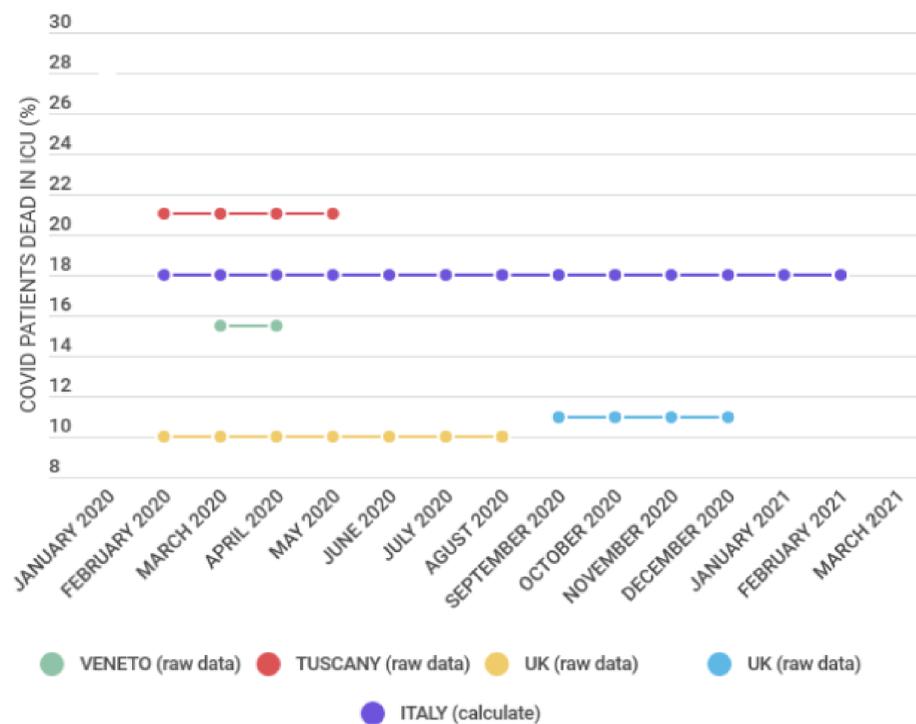
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Background

Where COVID-19 patients die, and which percentage of the overall COVID-19 deaths occur in the intensive care unit (ICU) is unknown. We recently estimated this number to be 18% in Italy from February 21, 2020 to February 21, 2021. Aim of this study is to confirm our thesis using raw numbers from other areas in Italy, and to identify differences with data from other countries.

Methods

We searched data from Pubmed, Google, government health and medical websites, traditional media and social media to obtain the total number of COVID-19 deaths and the raw number of COVID-19 patients who died in the ICU in the most hit regions. We then divided the number of COVID-19 deaths in the ICU by the total number of COVID-19 deaths in the same areas.



Results

We found data for Tuscany, Veneto and the United Kingdom (UK). In Tuscany, 216 COVID-19 ICU patients died (February 24 to May 31, 2020), and 1,041 COVID-19 deaths were registered overall in the region in the same period. In Veneto, 218 COVID-19 patients died in the ICU (February 28 to April 28, 2020) out of 1,408 COVID-19 deaths in Veneto in the same period. Therefore, the percentage of patients dying of COVID-19 in the ICU was 21% and 15% for Tuscany and Veneto, respectively. In UK, 10% (4,308/41,554) of the patients dying of COVID-19 from February 1 to August 31, 2020 died in the ICU. This percentage was 11% (9,224/84,891) between September 1, 2020 and March 25, 2021.

Table 1. Percentage of the overall COVID-19 deaths occurring in regions and countries that takes place in the intensive care unit.

	COVID-19 deaths in ICU (n)	COVID-19 deaths overall in the region or country (n)		Study period (mm/dd/yy)
Italy	17,664	95,992	18%	from 02/21/20 to 02/21/21
Tuscany (raw data)	216	1,041	21%	from 02/24/20 to 05/31/20
Veneto (raw data)	218	1,408	15%	from 02/28/20 to 04/28/20
UK (raw data)	4,308	41,554	10%	from 02/01/20 to 08/31/20
	9,224	84,891	11%	from 09/01/20 to 03/25/21

ICU, intensive care unit; UK, United Kingdom.

Conclusions

We found that our counterintuitively low estimation (18% of the overall COVID-19 deaths occurred in the ICU in Italy) was confirmed using raw data from Veneto (15%) and Tuscany (21%). These rates were lower in UK (10% and 11% during the first and the second waves, respectively).

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