

Letter to the Editor Regarding Nogueira et al “Excess Mortality Estimation During the COVID-19 Pandemic: Preliminary Data from Portugal”

Carta ao Editor Sobre Nogueira et al “Excess Mortality Estimation During the COVID-19 Pandemic: Preliminary Data from Portugal”

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Palavras-chave: COVID-19; Infecções por Coronavírus; Mortalidade; Pandemia; Portugal; Surtos de Doenças

Nogueira *et al*¹ showed a counterintuitive consequence of Portugal’s response to the COVID-19 pandemic: the non-COVID-19 excess mortality outnumbered the COVID-19 mortality. As international experts have warned, the fear of becoming infected can cause delays in patients seeking healthcare services, and the reallocation of healthcare resources can decrease the availability/accessibility of timely healthcare for other diseases.² After reading the article, two questions arose to me:

(1) Did the reduced emergency department (ED) attendance/delays in healthcare-seeking *de facto* increase mortality? Was a reduction in life-threatening visits to the ED (STEMI, stroke, sepsis, ...) and a reciprocal increase in out-of-hospital deaths by the same causes observed during the pandemic? Given that a significant amount (sometimes > 50%) of ED visits in Portugal are due to non-urgent medical conditions,³ which are associated with low mortality rates (and were the ones that decreased the most during the State-of-Emergency), and that ED mortality rates decrease when ED occupancy decreases⁴ (because treatment can be offered more timely and accurately, assuming a similar number of healthcare professionals), could the mortality net

result of an ED attendance decrease have been lower than estimated? Did the authors analyze ED mortality rates of the non-COVID-19 ‘orange’ and ‘red’ bracelet patients during the pandemic? Furthermore, did the authors withdraw an estimated number of reduced ED visits caused by a reduction of ‘outside activities’ (e.g. fractures, sports injuries, car accidents) from their calculations? Were any healthcare-seeking delay indicators (e.g. symptom onset to ED admission time), and their effects on mortality, assessed?

(2) Did the re-allocation of healthcare resources contribute to the excess mortality? Even small delays in treating some acute conditions increase mortality (e.g. a 4.4-minute increase in myocardial-infarction or cardiac-arrest patient transport time).⁵ Did the allocation of resources to COVID-19-patients leave the non-COVID-19-patients with lower healthcare-professionals-to-patient ratios, fewer ambulances (higher ambulance waiting times), fewer OR slots or hospital/ICU beds and higher ED waiting times? Did the authors analyze any indicators (e.g. STEMI-door-to-needle-time) regarding this issue? Have the authors assessed data from canceled elective surgeries and appointments in order to predict a possible increase in future mortality from the undertreatment of non-urgent conditions (e.g. cancer)? And was the resource-allocation-related estimated excess mortality greater than the estimated COVID-19-related mortality avoided by Portugal’s pandemic strategy?

Both factors probably contributed to the non-COVID-19 excess mortality. However, as those factors are curbed by different approaches (public service announcements *versus* different resource allocation policies), further research on this issue would be invaluable in order to minimize overall mortality in future pandemics.

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