Mortality Undercounting in times of the COVID-19 Pandemic

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This comment intends to enlighten about the most common causes of deaths under registration during the novel coronavirus pandemic or COVID-19 to create awareness in the general public and researchers can analyze mortality data with caution.

Each national statistical office has its own methods to build their census and vital registration systems, which must gather information for the entire population timely and satisfying statistical confidentiality. To constantly cover the entire territory, governments make enormous financial and technical efforts, unavailable in most developing nations. Also, there is a link of success/failure that begins with birth certificates, for a record system an unborn cannot die. Moreover, mortality definitions are not comparable across countries, for instance differences in the concept of maternal mortality, one of the United Nations' sustainable development goals, led to creating the Maternal Mortality Estimation Inter-Agency Group, which produced a comparable measure only until 2014 [1].

Each country has "hard to reach populations", defined as residents of isolated places, undocumented immigrants, illegal activities' workers, victims of displacement and refugees, those persecuted by social or legal norms, or other complicated situations where people can/do not want to be reached by the statistical system, as they fear persecution or stigmatization; and to account for their mortality is almost impossible.

Moreover, not everyone demands a death certificate, for instance if the deceased leaves no bequest, or if the recipients have no rights to manage or right those assets. This was the rule not so long ago for many women and still is in some places in the world. Thus, it is not surprising that in most Latin American countries females still hold larger undercounting than males [2]. Similarly, protocols require medical personnel to complete death certificates, but medical coverage is not universal and even when available, sometimes, MDs do not fill in all the required information. Perhaps because is a burden for them or simply do not value statistical collection.

These six reasons apply to overall mortality, including COVID-19, and since WHO declared the state of a pandemic on March 11/2020 the problem aggravates. Pandemic conditions generate an unexpected increased demand for medical services at once, therefore the system physically collapses in each country. MDs are too busy saving lives and lack time to fill out forms, while statistical and registry offices collapse too. Additionally, because it is a new disease, the very first cases will be, most likely, accounted as another respiratory disease. It is only until clearly defined that systems start counting deaths as COVID-19.

At that point, official numbers correspond only to the deceased tested positive for COVID-19, and anyone without a test is excluded. Testing was not available because the

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person searches for it at a very advanced stage of the disease, the system overcrowded and could not reach the patient timely, or because the country does not have enough resources to cover massive testing. Besides, the test is new and imperfect and false-negative rates could be at least 15% [3], some patients may fall in this category and die unrecorded as COVID-19.

Many countries include main and underlying cause(s) of death, useful when studying one cause. Currently, most records only account for main cause of death, leaving aside those whose underlying cause was COVID-19. Another source of underreporting are asymptomatic patients who develop a complication related to COVID-19 and die (i.e. diabetes, hypertension, acute respiratory diseases). Asymptomatic patients were never tested but could add up from 18% to 33% of infected cases [4].

Most countries measure deaths at medical facilities and not always cover those at home or compounds as nursing homes. As the largest fraction of deaths is elderly in some countries this will be an additional issue. Finally, there will be an indirect effect on other causes of death. While some may see a release, i.e. homicides and traffic accidents, others could increase due to the overrun of the medical system. Anyone in need of the Emergency Room will probably have a below-average response if the facility is also attending COVID-19 cases.

In summary, death records are imperfect and under pandemic conditions, all typical issues exacerbate leading to worse quality for all causes of death, including COVID-19. The call is to take current data with precaution. Once the state of pandemic passes, demographic techniques will allow us to estimate an appropriate correction, as mortality under-registration is a well-studied subject for over six decades [5]. Hopefully, we will do it soon.

References

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