

# Excess Deaths Associated with the Covid-19 Pandemic in the Philippines

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In collaboration with UNFPA

# Introduction

- The Philippines' Department of Health (DOH) has reported 33,330 COVID-19 deaths in the country from the start of the COVID-19 pandemic in 2020 to August 30 2021.
- This number, however, does not entirely reflect the impact of the pandemic on mortality in the country.
- This study investigates excess deaths in the Philippines from January 2020 using data from the civil registry documents or death certificates issued by the Philippine Statistics Authority (PSA).

# Excess Deaths

- "Mortality above what would be expected based on the non-crisis mortality rate in the population of interest. Excess mortality is thus mortality that is attributable to the crisis conditions" (Checchi and Roberts, 2005).
- Number of deaths *from all causes* during a crisis above and beyond what we would have expected to see under "normal" conditions
- Estimating excess deaths in the Philippines during the pandemic can quantify both the direct and indirect impact of COVID-19 on Mortality.

# Excess Deaths

- Besides the confirmed deaths from COVID-19, situations such as the following are taken into consideration:
  - deaths of suspected COVID-19 patients who are either not tested or tested but with inconclusive results,
  - increase in deaths in other causes due to weakened healthcare systems,
  - deaths of individuals who avoided or were not able to go to hospitals to get treated or who got less funding for treatment, and
  - decrease in deaths in other causes due to mobility restrictions.

# Excess Deaths

- Following Roser, et.al (2020) and using weekly mortality data from the vital registration, the excess deaths during the COVID-19 pandemic in the Philippines is estimated using:

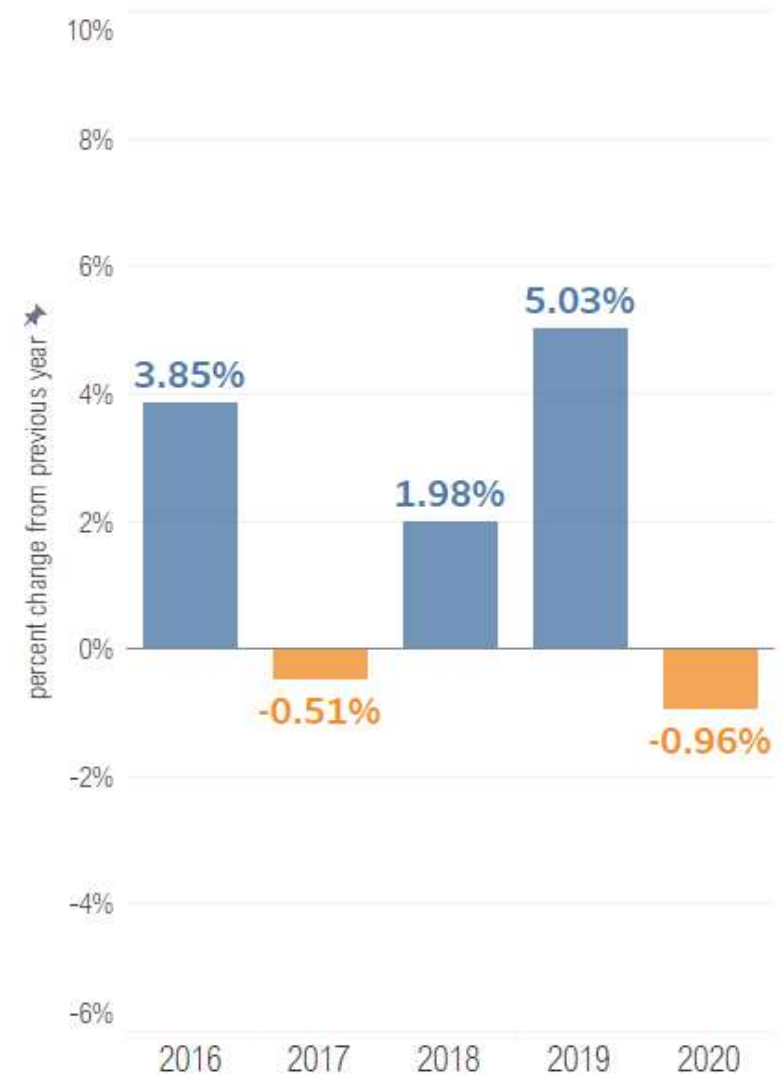
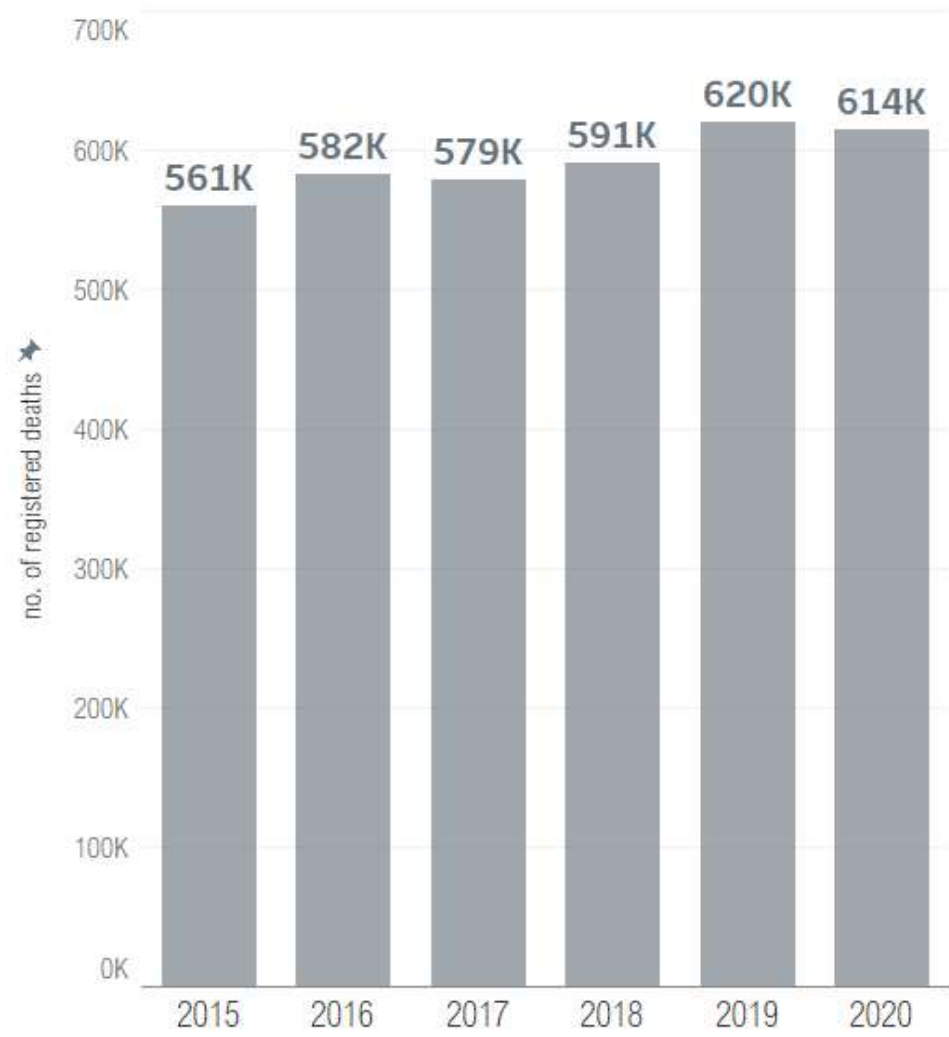
$$\textit{Excess Deaths}_{2020\textit{week}05} = \textit{Deaths}_{2020\textit{week}05} - \textit{Average Deaths}_{2015-2019\textit{week}05}$$

# Data

- The study used January 2015 to May 2021 data from civil registry documents or death certificates from the Philippines Statistics Authority.
- However, 2020 and 2021 figures are still provisional and may be changed when more certificates for deaths for these years are registered.

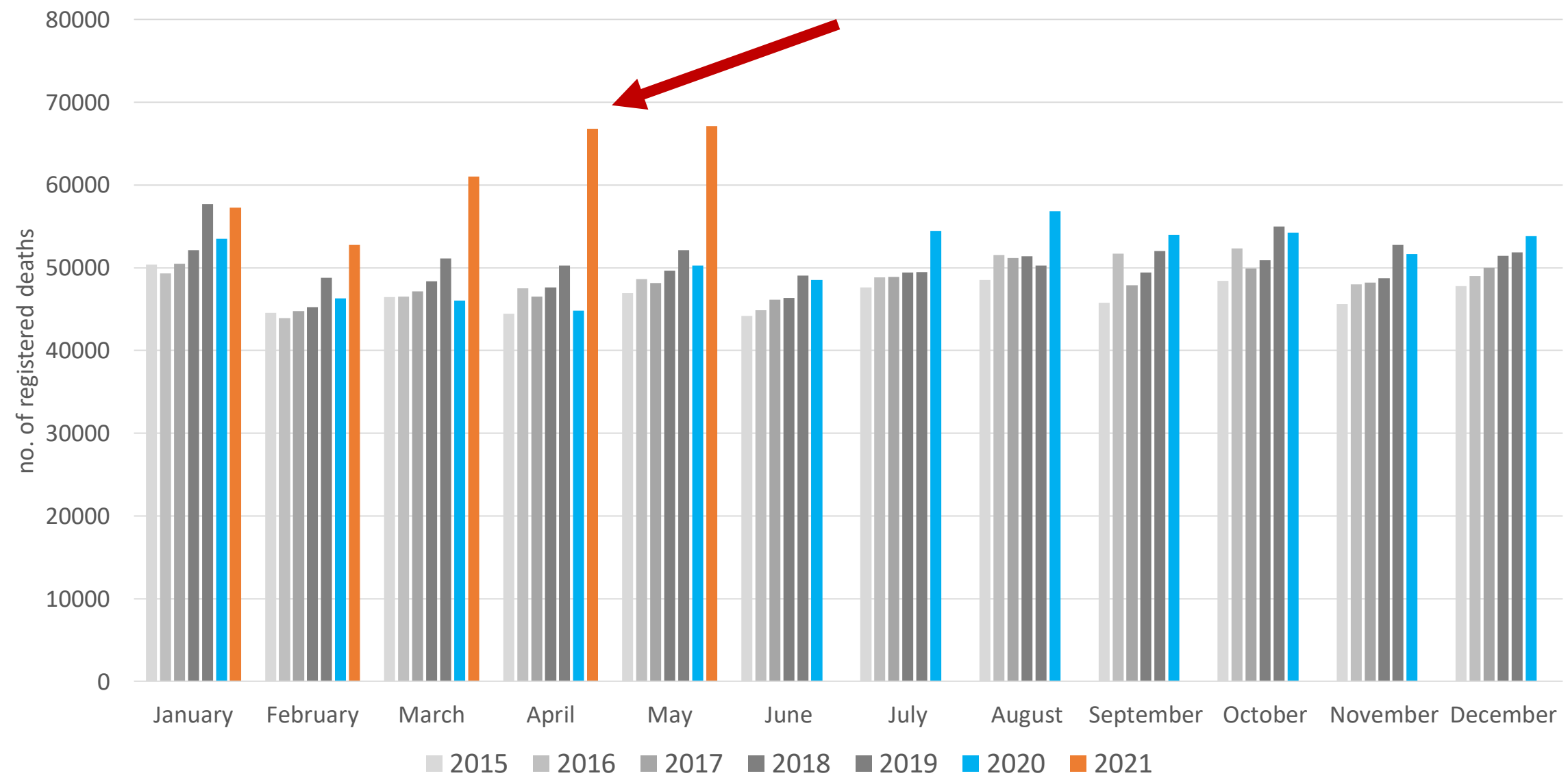
# Results of the Study

# Annual number of registered deaths in the Philippines and year-on-year growth rates, 2015 to 2020\*





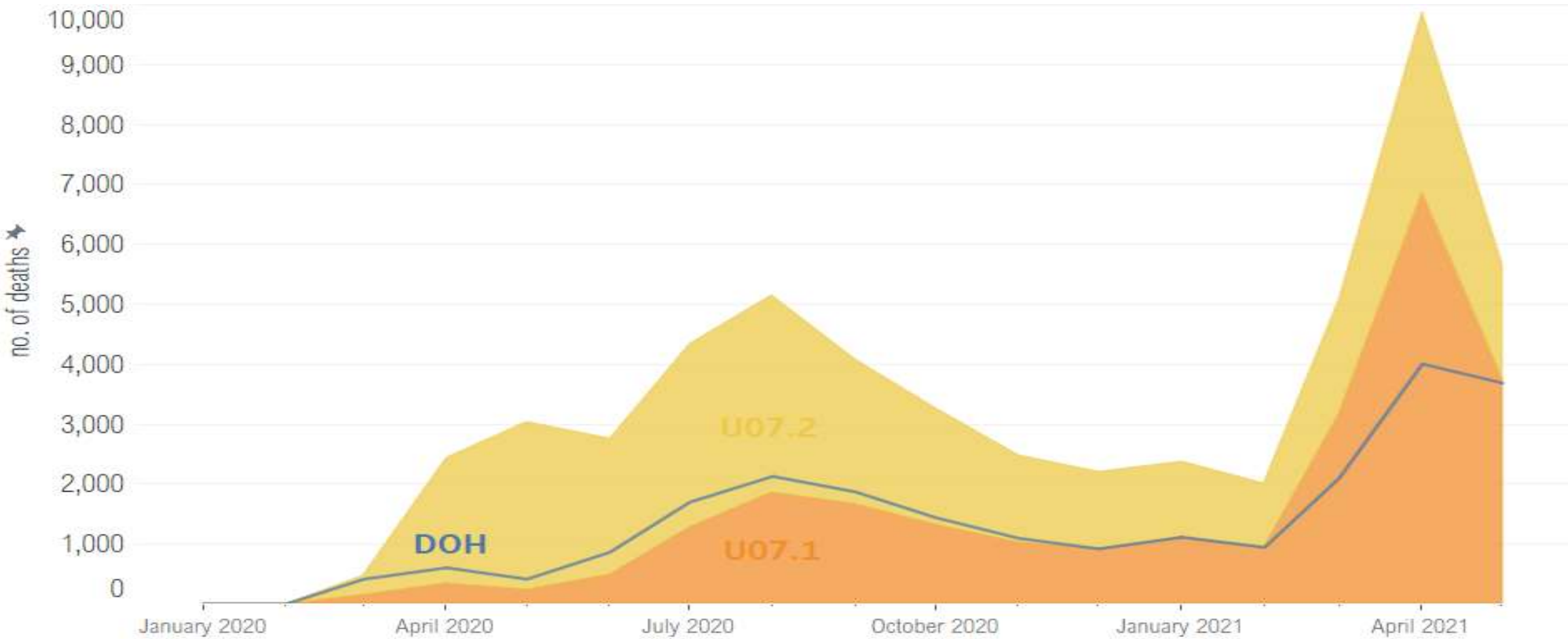
Monthly number of registered deaths in the Philippines, January 2015 to May 2021\*



# Covid-19 Related Deaths

- Following the latest WHO guidelines, the PSA included 2 COVID-related codes on its list of causes of death: "U07.1 COVID-19, virus identified" and "U07.2 COVID-19, virus not identified":
  - "U07.1 COVID-19, virus identified" are deaths where the individual was COVID-19 positive as confirmed by laboratory testing.
  - "U07.2 COVID-19, virus not identified" are deaths where the individual was clinically or epidemiologically diagnosed with COVID-19, but laboratory confirmation was inconclusive or unavailable (WHO, 2020).

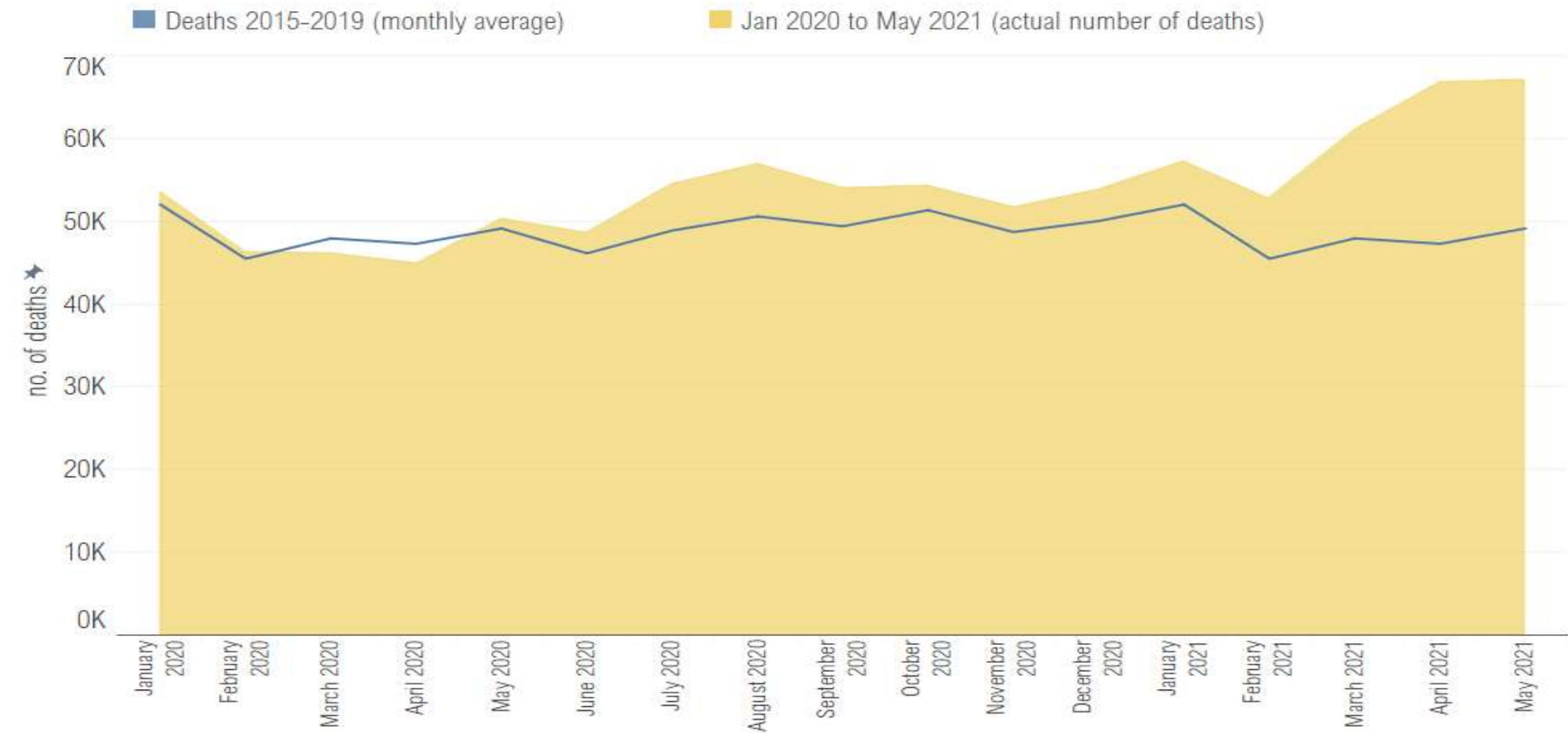
# Monthly COVID-19 and COVID-19 related deaths in the Philippines, January 2020 to May 2021 \*



# Other Causes attributable to the overall pandemic conditions

- In addition to laboratory-confirmed deaths due to COVID-19, excess deaths capture COVID-19 deaths that were incorrectly diagnosed and reported, and also deaths from other causes attributable to the overall COVID-19 crisis conditions.
- The estimation of excess deaths is a more comprehensive measure of the *total* impact of the pandemic on mortality than the confirmed COVID-19 death count alone.

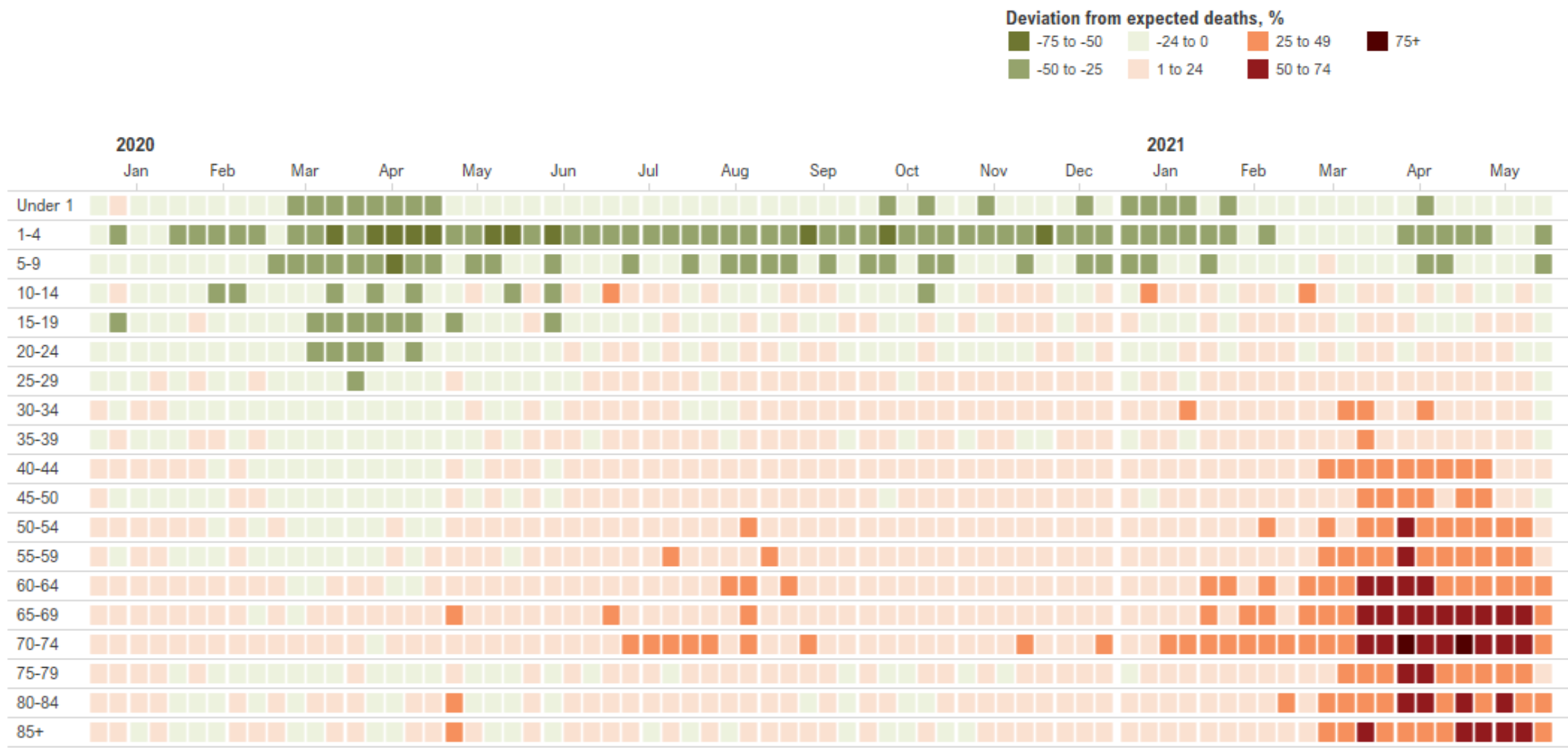
# Monthly registered deaths from January 2020 to May 2021\*



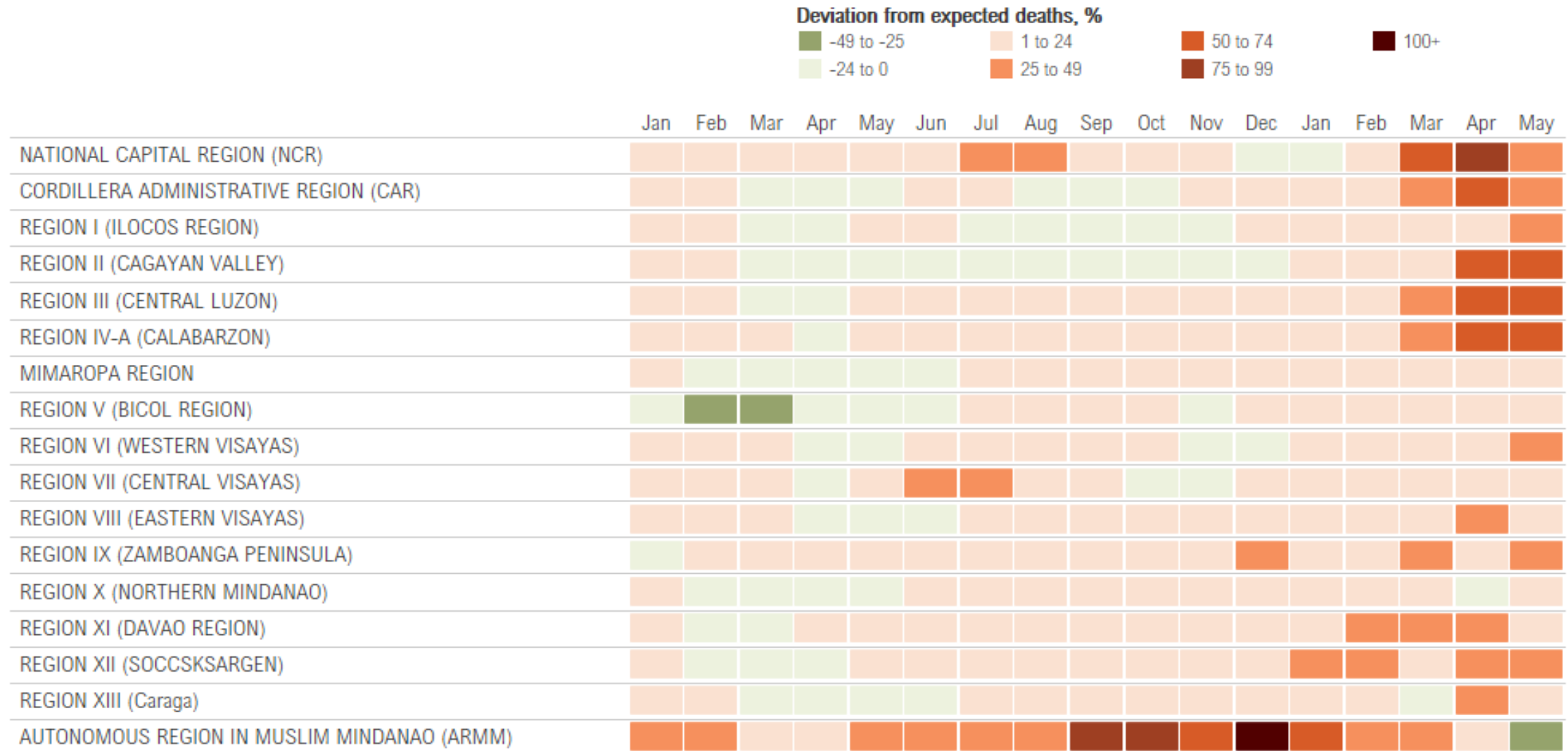
# Number of excess deaths and percentage change, January 2020 to May 2021\*



# Percentage deviation of weekly deaths from expected deaths by **AGE GROUP**, January 2020 to May 2021\*



Percentage deviation of weekly deaths from expected deaths by **region of residence**, January 2020 to May 2021\*





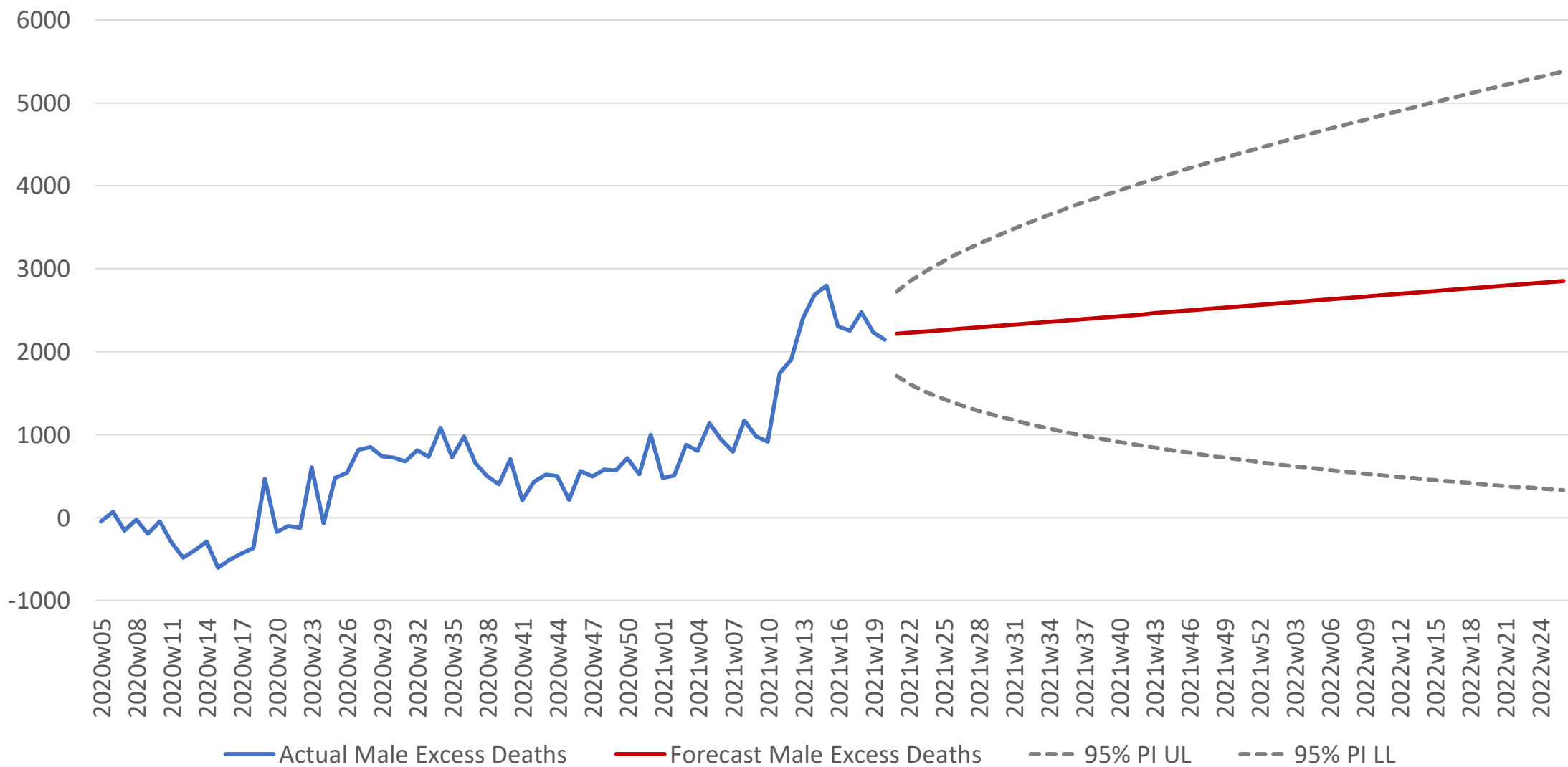
# Excess Deaths Projections

- Only the death counts until week 20 of 2021 was used for the estimation of excess deaths. Exponential Smoothing was used to project the number of excess deaths to June 2022:

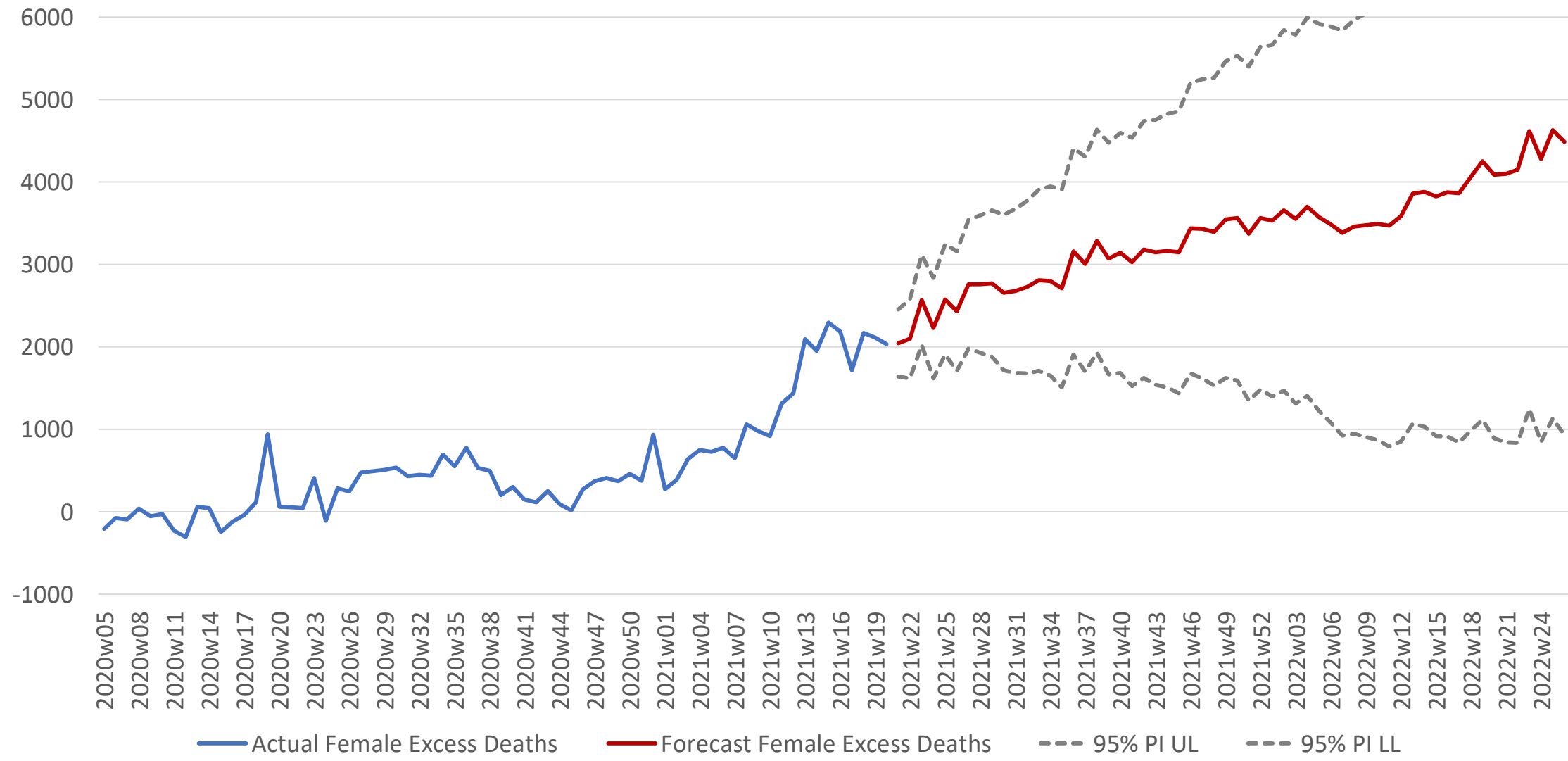
$$x_{t+j} = (\mu_t + \beta_j) + S_{t+j} + \epsilon_{t+j}$$

where  $x_t$  is the time series of excess deaths,  $\mu_t$  is the time-varying average at time t,  $\beta$  is a parameter,  $S_t$  is the seasonal component, and  $\epsilon_t$  is the idiosyncratic error.

# Actual and Forecasted Excess Deaths of Males, Feb 2020 to June 2022



# Actual and Forecasted Excess Deaths of Females, Feb 2020 to June 2022



## Estimated and Projected COVID-19 Pandemic Excess Deaths in the Philippines

**Table 1. Estimated and Projected COVID-19 Pandemic Excess Deaths in the Philippines**

	Males	Females	Both Sexes
2020 <sup>a</sup>	14,566	11,542	26,108
2021 <sup>b</sup>	107,997	120,792	228,789
2022 <sup>c</sup>	70,548	100,359	170,907

Notes:

<sup>a</sup> estimate of excess deaths from 2020w05 to 2020w52

<sup>b</sup> estimate and point forecast of excess deaths from 2021w01 to 2021w52

<sup>c</sup> point forecast of excess deaths from 2021w01 to 2020w26

Source: Author's Calculations

## Ways Forward

Other countries such as Peru, Mexico, and the United Kingdom already reviewed and revised their Official COVID-19 Related Deaths Count.

For instance, Peru now uses both “U07.1” and “U07.2” for their official COVID-19 Related Deaths which revealed the true picture of the Country’s Excess Deaths.



# Thank you very much!

Philippine Statistics Authority  
United Nations Population Fund (UNFPA)