Title: Empirical prediction intervals applied to short term mortality forecasts and excess deaths

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Abstract: We propose empirical prediction intervals for the study of weekly expected and excess deaths and demonstrate the superior coverage and generality of these intervals compared with conventional parametric intervals. Instead of relying on the suitability of parametric assumptions or the magnitude of errors over the fitting period, empirical prediction intervals are estimated from cross-validated time series of past prediction errors, reflecting the intuitive notion that a forecast is only as precise as similar forecasts in the past turned out to be. We further employ empirical prediction intervals to assess the level of excess mortality which can reliably be detected at the current stage of the COVID-19 pandemic, given the error of our methods.