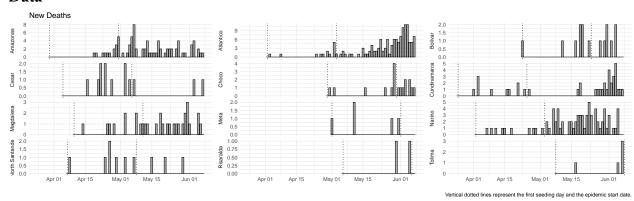
# Colombia

#### Data



Mobility Data 0.5 Amazonas 0.0 Atlantico -0.5 -1.0 0.5 Cundinamarca 0.0 -0.5 average\_mob g\_residential g\_transit\_stations Magdalena 0.0 Narino Meta -0.5 North Santander 0.0 -0.5 Apr 01 Apr 15 May 01 May 15 Apr 01 Apr 15 May 01 May 15 Jun 01 Apr 01 Apr 15 May 01 May 15

Vertical dotted lines represent the first seeding day and the epidemic start date.

## **Analysis**

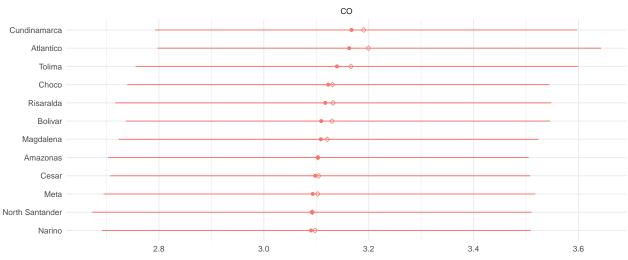
Number of divergent transitions = 0

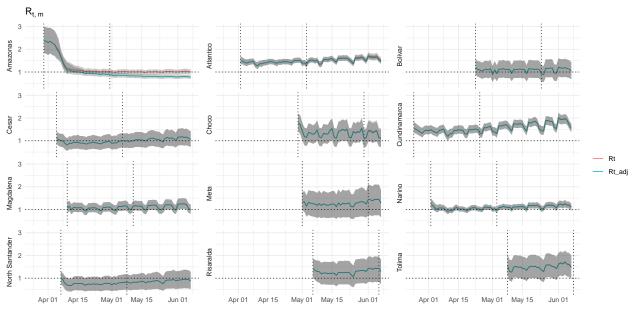
Maximum  $\hat{R} = 1.004352$ 

Minimum Bulk ESS = 1369.377

Minimum Tail ESS = 1131.608







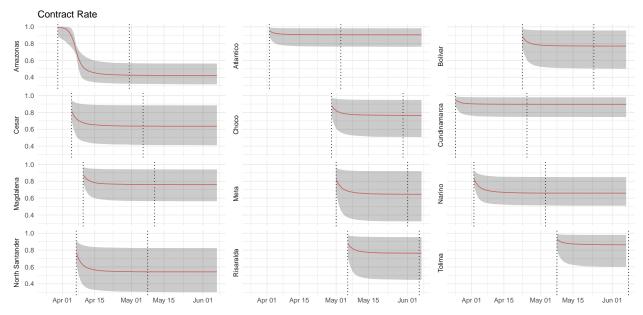
Contact rate function:

$$cr(t;t^*,\lambda_j,\kappa) = \lambda_j + \frac{1-\lambda_j}{1+\exp(\kappa(t-t^*))}$$

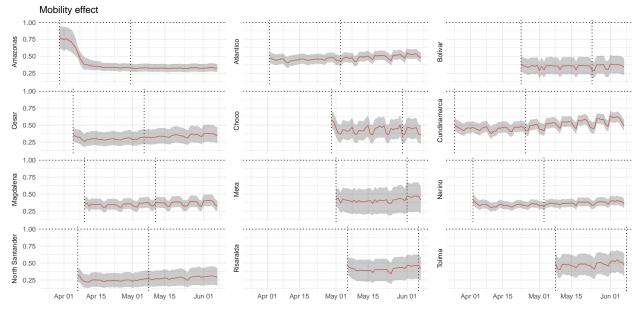
Vertical dotted lines represent the first seeding day and the epidemic start date.

where

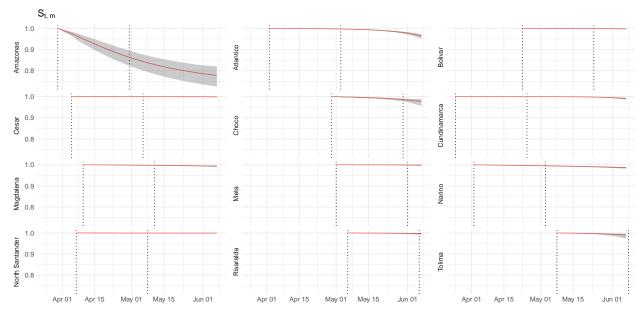
$$\begin{split} \lambda_j &\sim \texttt{Beta}(3,1) \\ \kappa &\sim \texttt{NegHalfNormal}(0,1). \end{split}$$



Vertical dotted lines represent the first seeding day and the epidemic start date.

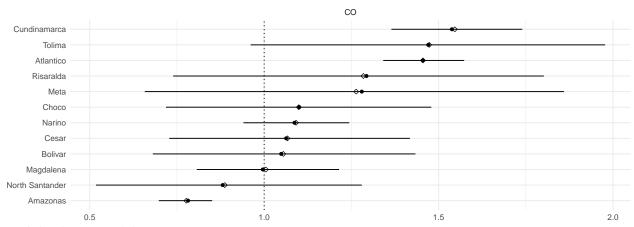


Vertical dotted lines represent the first seeding day and the epidemic start date.



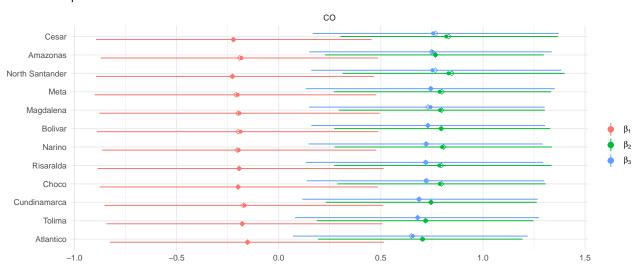
Vertical dotted lines represent the first seeding day and the epidemic start date.

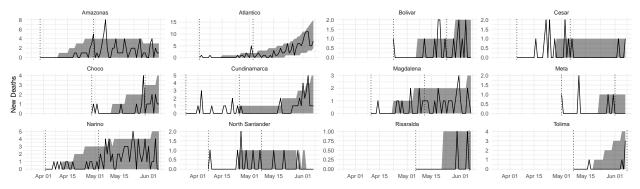
### $R_{t,m}$ on the last day



Mobility linear model:  $\beta_1 \cdot X_{residential} + \beta_2 \cdot X_{transit} + \beta_3 \cdot X_{average}$ .







Solid black line: observed new deaths. Grey ribbon: posterior predicted new deaths. Vertical dotted lines represent the first seeding day and the epidemic start date.

#### Imputed Cases

