

SMALL AREA HEALTH ESTIMATES IN THE BASQUE COUNTRY

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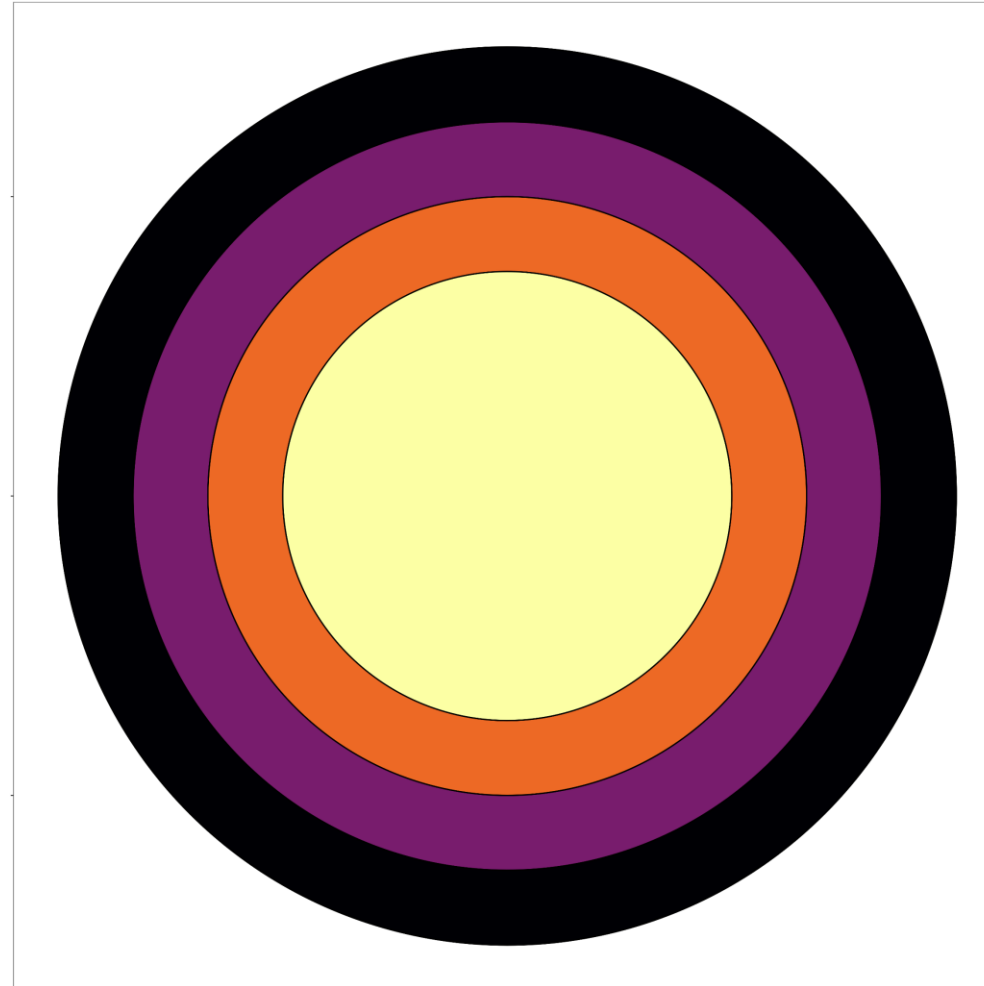
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DATA

- Source: The Basque regional health authority, Osakidetza,
- Administrative division: 3 provinces, 250 municipalities, 350 districts and 1714 sections,
- Abridged ages (0,1,5,10,...85+), sex, years 2016-2021, 10 causes.



Administrative Levels ■ Province ■ Municipality ■ Censal District ■ Censal Section

METHODS

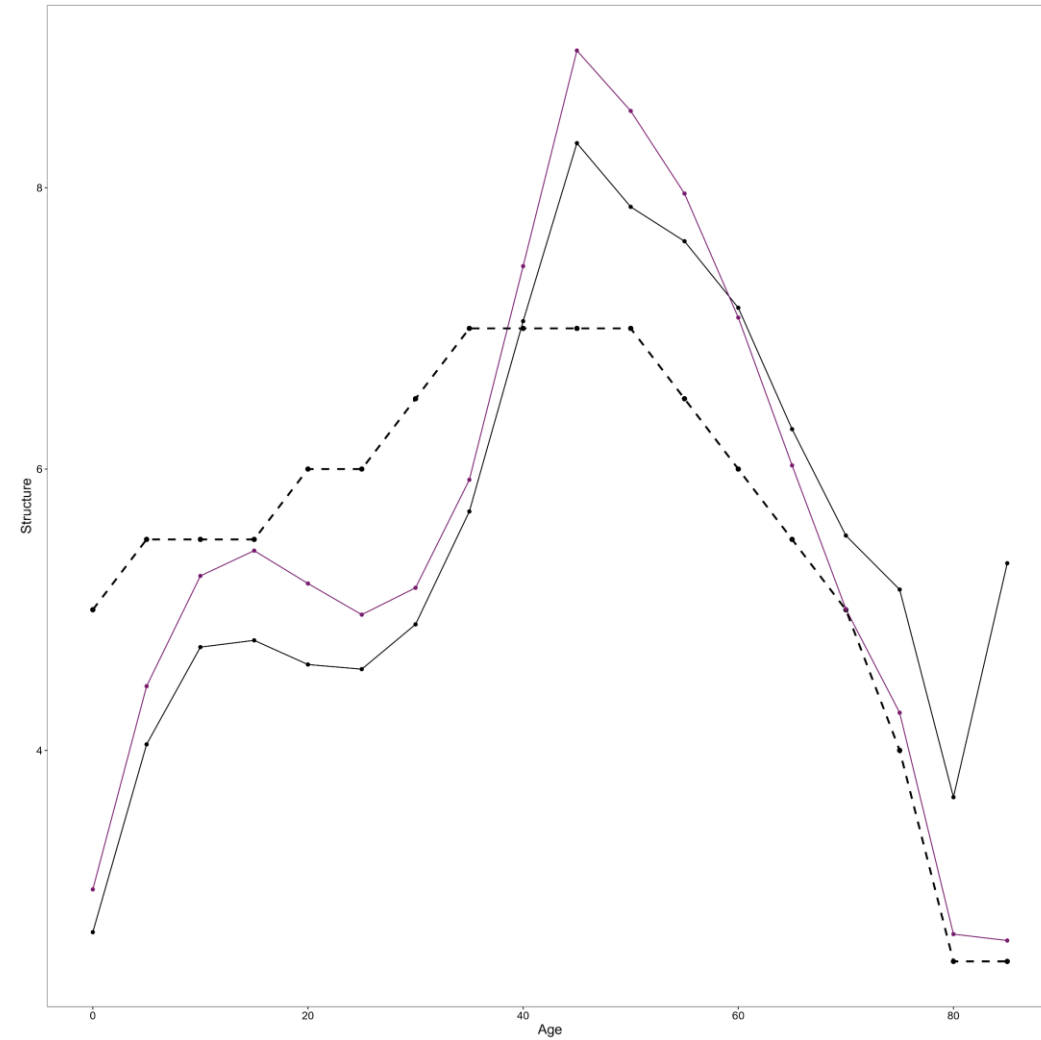
- Smoothing: generalized additive model (GAM) with negative binomial distribution
- Tensor product smoothing of age and year interaction with cubic splines with shrinkage across census sections
- fixed effects associated with different census sections
- Log population as offset

FORMULA

$$\log(\mathbb{E}[\text{prevalence}]) = \beta_0 + f(\text{age}, \text{year}, \text{section}) + \beta_1 \cdot \text{section} \cdot \log(\text{population})$$

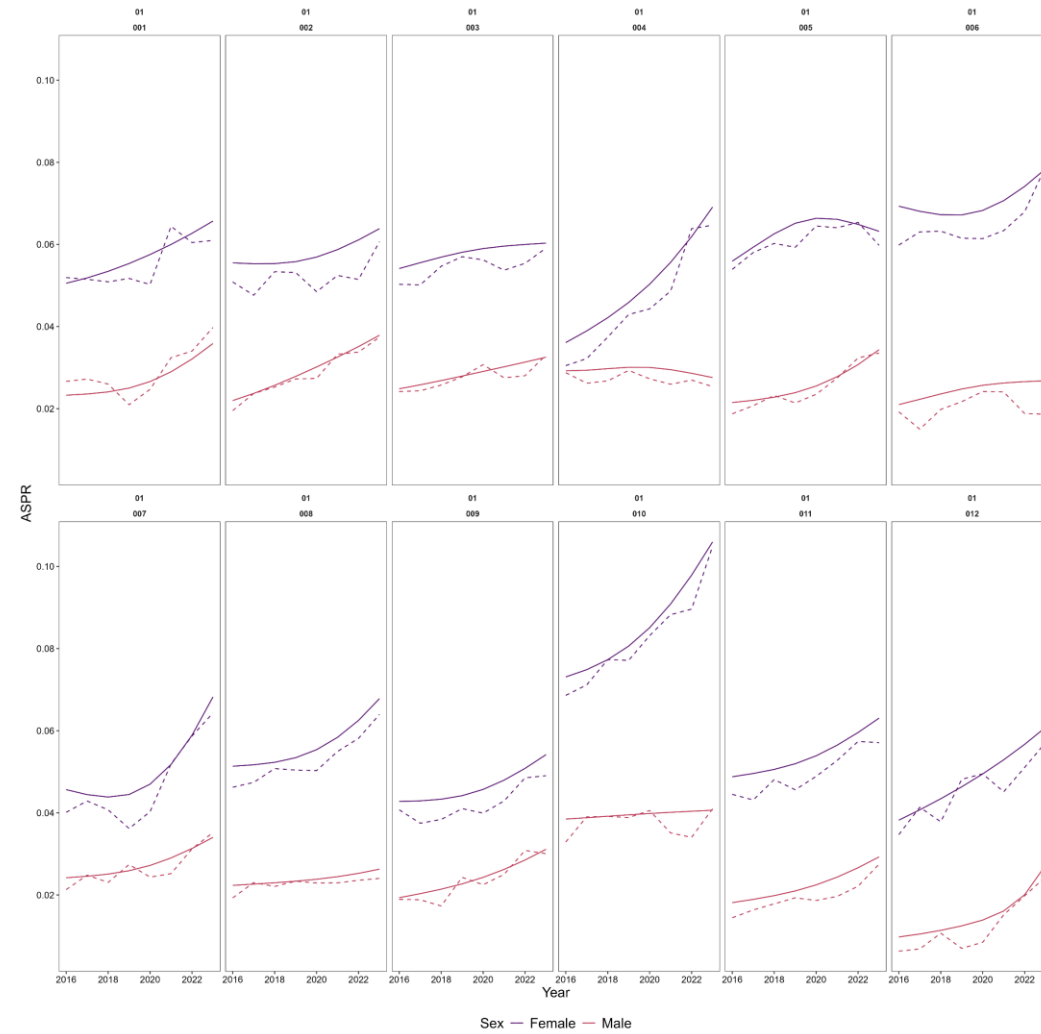
STANDARDIZATION

- European standard population of 2013 is used (black dashed line)
- Other lines are male and female population distribution in Basque country in 2023



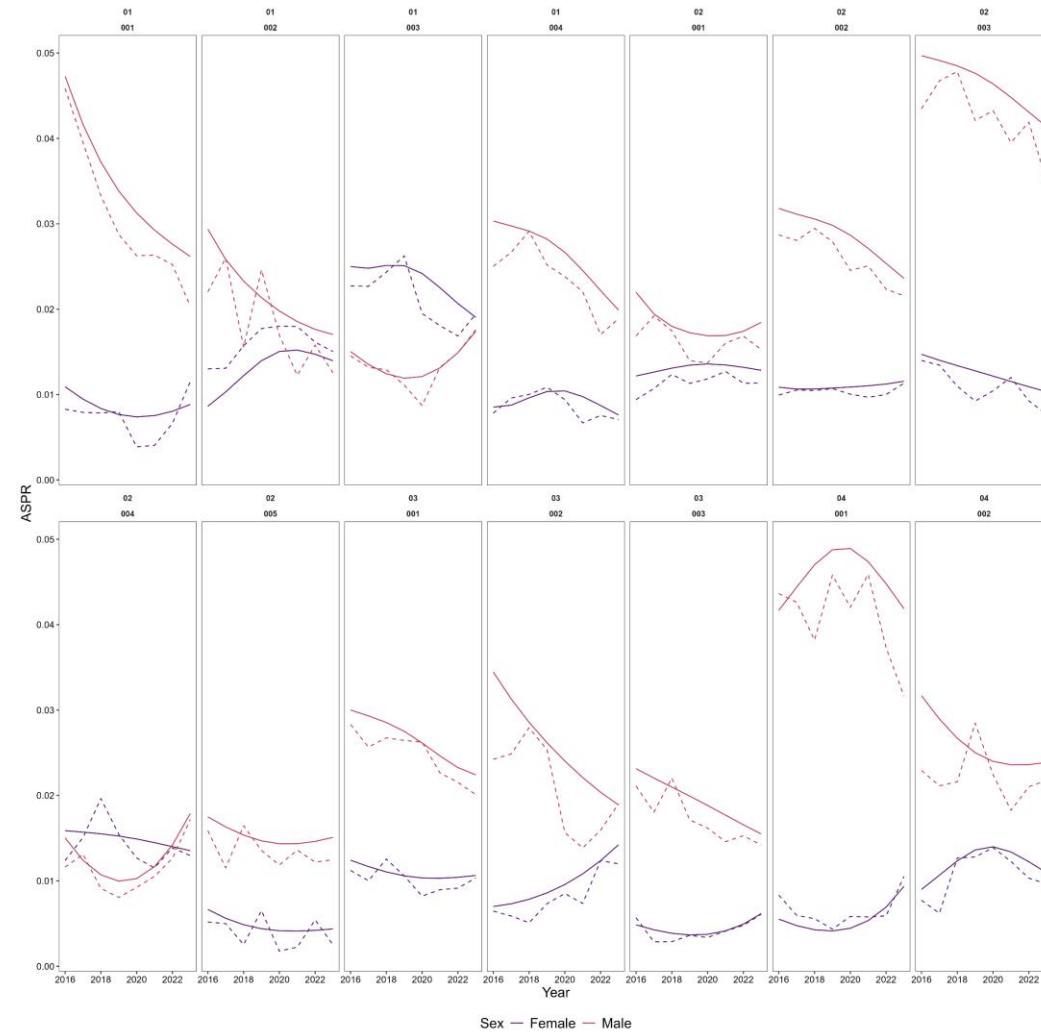
PERFORMANCE

- Hondarribia (small town) – smooth (solid) and empirical (dashed) ASPR, for Hypertension



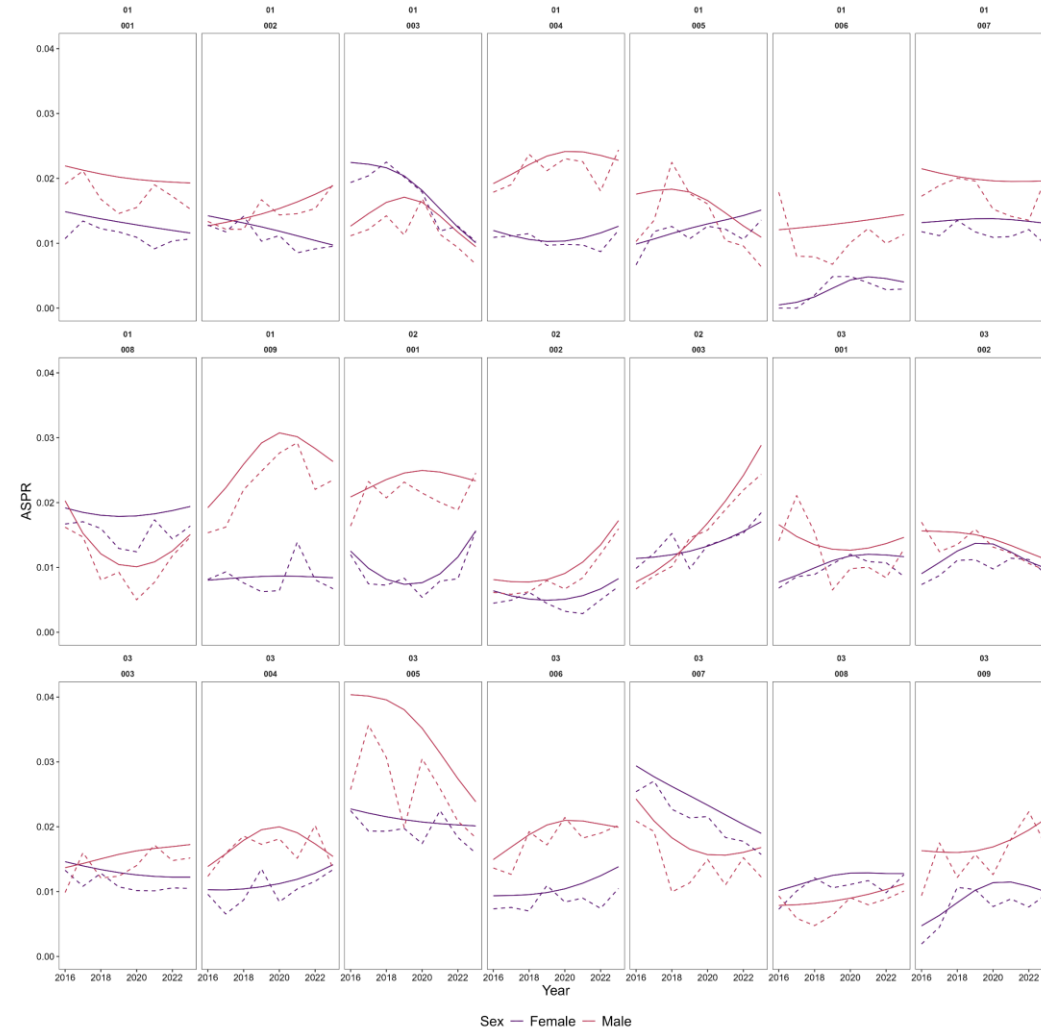
PERFORMANCE

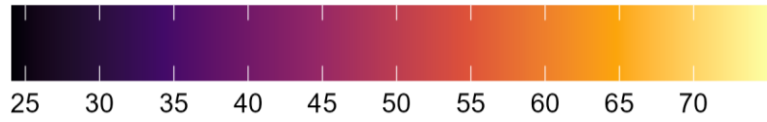
- Tolosa (average town) – smooth (solid) and empirical (dashed) ASPR for Ischemic Cardiomiopathy



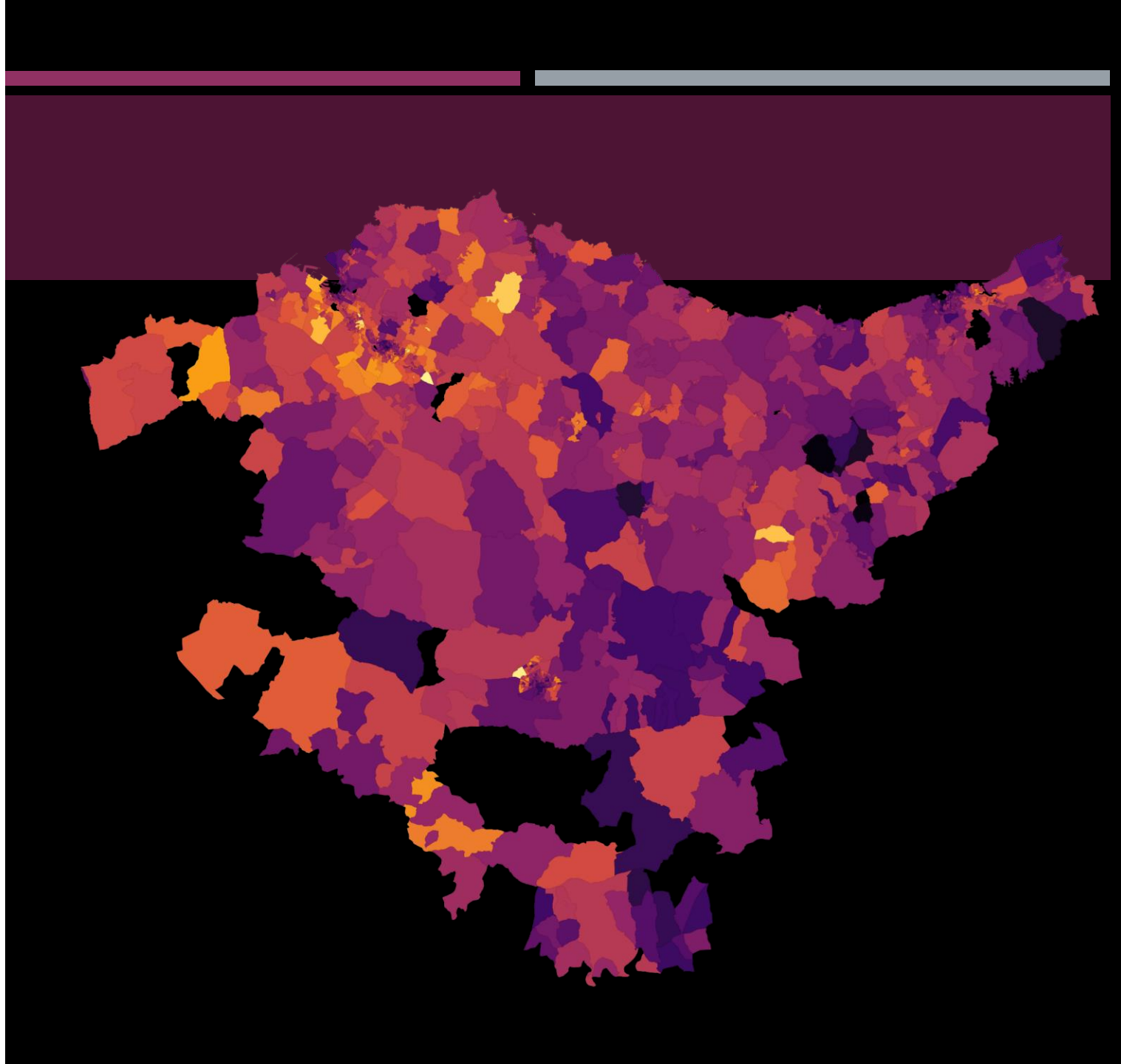
PERFORMANCE

- Leioa (big town) - smooth (solid) and empirical (dashed) ASPR for Diabetes Mellitus





MAP OF SMOOTH
ASPR FOR ALL CAUSES
FOR MALES IN 2023



THANK YOU
VERY MUCH!

WELCOME TO
BILBAO!

