

SHORT-TERM EXPOSURE TO TEMPERATURE AND MORTALITY IN BELGIUM

Risk and health impact assessment

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Be-cause health, November 23th, 2021

What is Sciensano?



- Belgian institute for health, established April 2018
- Scientific expertise in human and animal health
- Support to policy, professionals and citizens

What is Sciensano?

Combining different research perspectives and disciplines to prevent, evaluate and mitigate health problems.

Healthy
all life
long

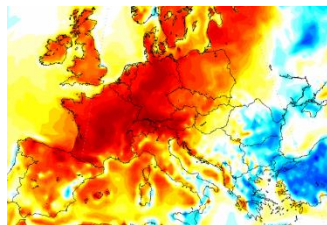
Fields of action



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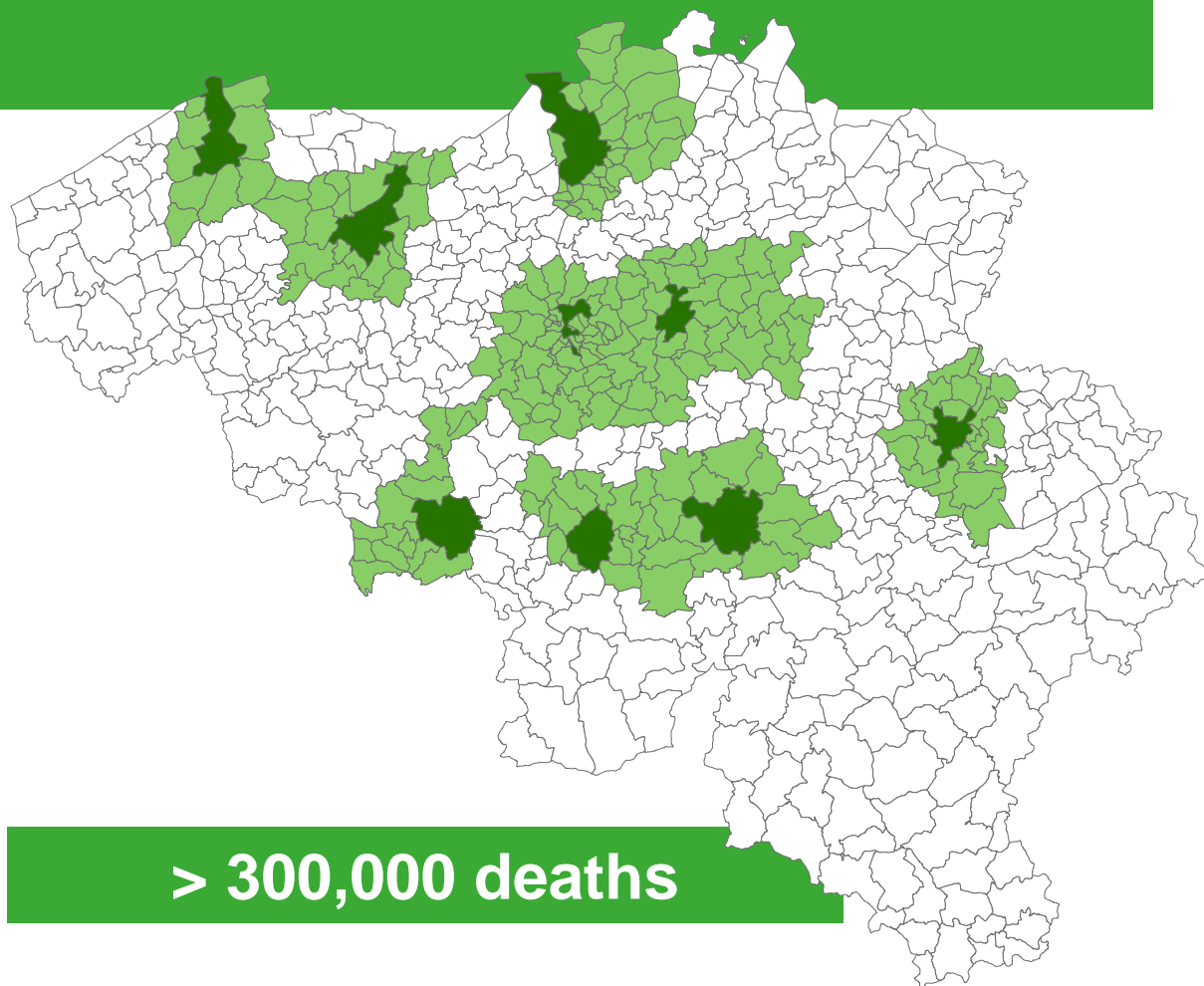
To describe the temperature-mortality relationships in Belgium and identify the most vulnerable populations

Also for air pollution-related mortality



Study design

- All-cause and cause-specific natural mortality
- People residing in Brussels, Antwerpen, Gent, Leuven, Brugge, Charleroi, Mons, Liège and Namur
- Period 2010 and 2015



Coupling of administrative databases

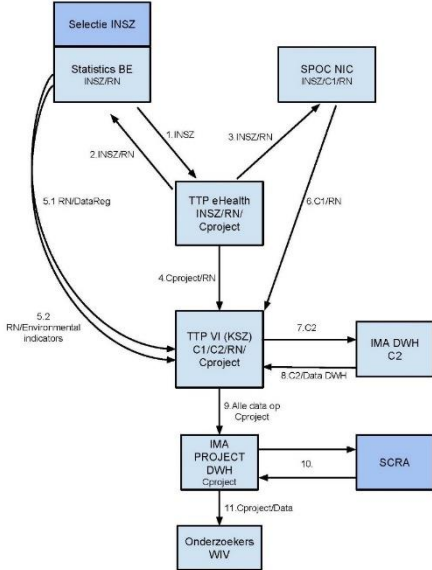
National Register,
National database for
cause of death
statistics

 **economie**

Statistics Belgium



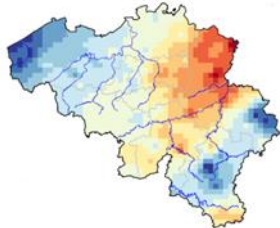

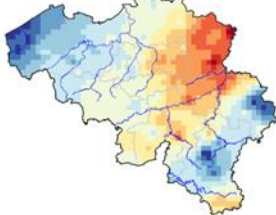
Statistics Belgium



Pharmaceutical and Population databases

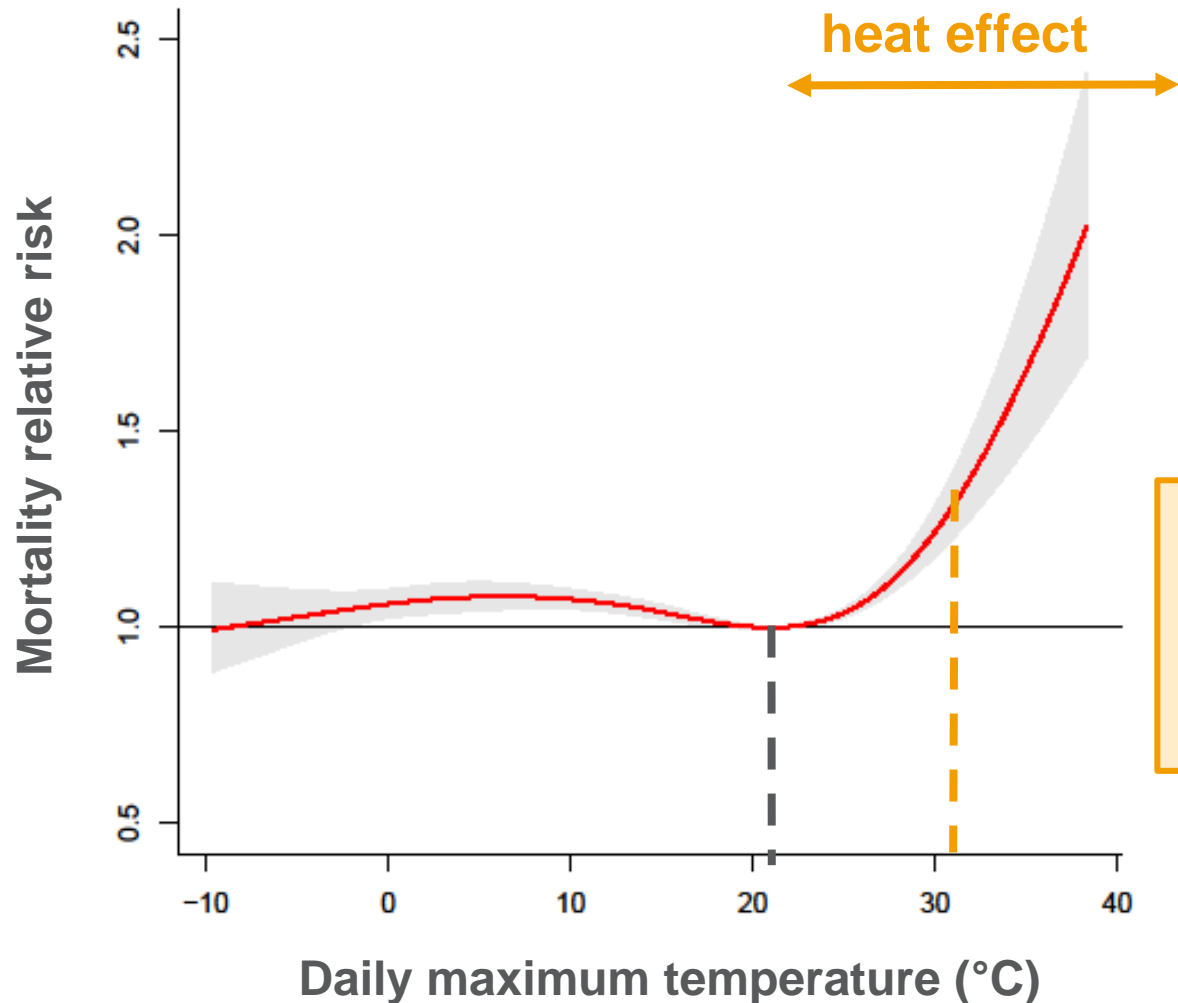


Meteorological data



Individual (anonymized) information

Results



Statistical analyses:

- Conditional Poisson regression with distributed lag non-linear models
- Agglomeration-specific estimates pooled using a random-effect meta-analysis

31,3°C vs 21,0°C:
Risk: +33%
(95% CI: 24%-43%)

Results

Differences in risk by sub-groups (31,3°C vs 21,0°C) :

- men: +23%, women: +40%
- 65-74 yrs +17%, 75-84 yrs +30%, 85+ yrs +34%
- less urbanized areas +23%, highly urbanized areas +41%
- people with chronic pre-existing conditions (COPD, diabetes...) ?

Conclusion

Evidence for a **clear heat effect** on mortality, **even in Belgium** (maritime temperate climate) – and not only during heat waves

Evidence for **more vulnerable populations** (women, the elderly, people residing in highly populated areas, + ...?)

The past six years have been the warmest years ever recorded

(State of the Global Climate 2020, World Meteorological Organization 2021)

Global surface temperatures will continue to increase, as well as the frequency and intensity of hot extremes, until at least the mid-century

(Intergovernmental Panel on Climate Change 2021)

Future ?  temperature,  mortality,  inequalities between populations ?

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Thank you