

Fatal residential fires in Europe

A preliminary assessment of risk profiles in nine European countries

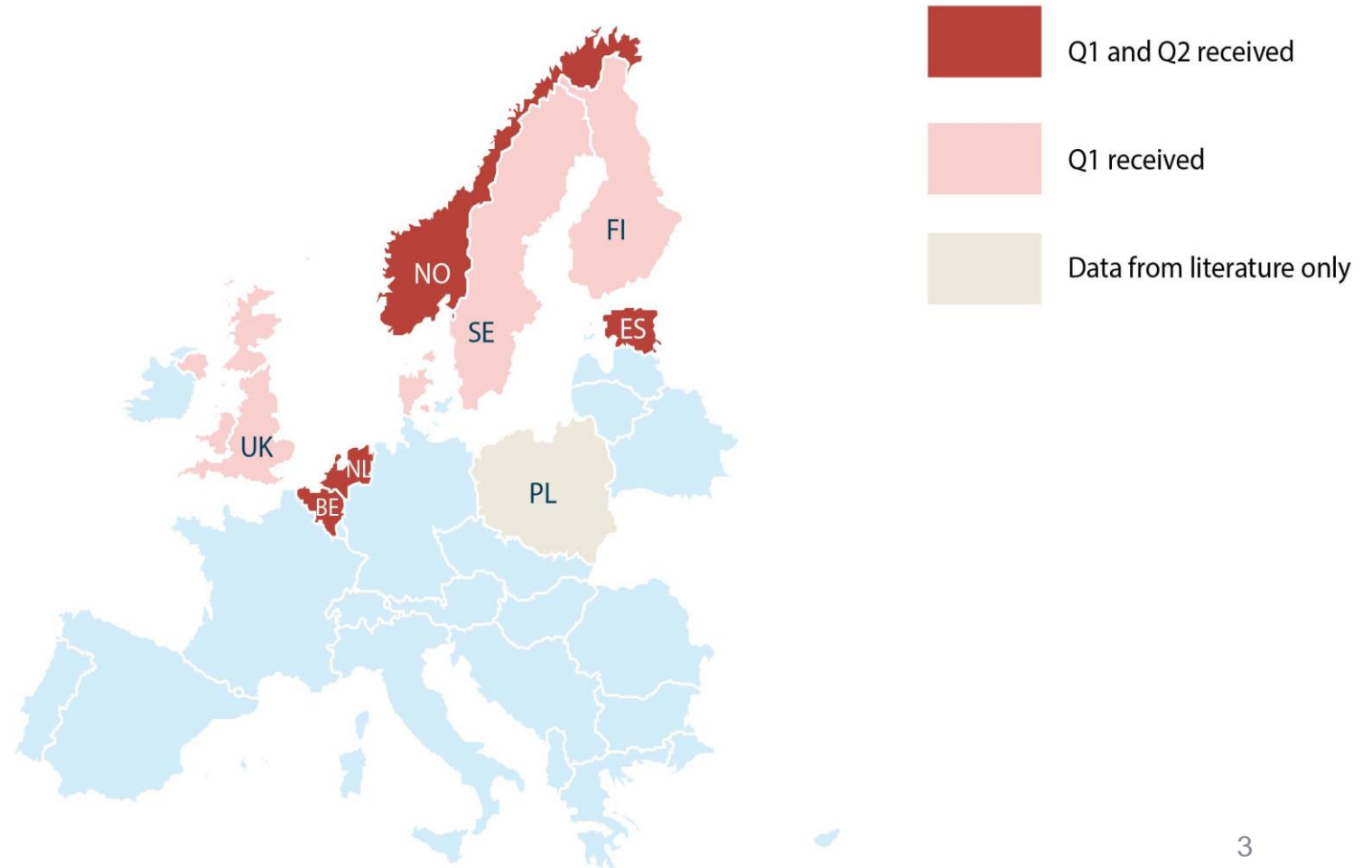
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Professor of Fire Safety
28 november 2018

Research questions

1. Which possible **risk factors** for fatal residential fires are known in **international analyses**?
2. Which **definitions** are used for the collected items and to what extent are they corresponding per country?
3. What information about fatal residential fires is collected in the **databases** in the selected European countries?
4. What are the **main characteristics** of and **risk factors** for fatal residential fires **at country level**?
5. Is it possible based on the available information to **draw up a risk profile at European level**? If not, what is necessary to provide information for this risk profile?

Methodology

- ▶ **Literature review** in 9 countries
- ▶ **Data collection** in 4 (5) participating countries



Methodology - challenges

Risk factor for fatal residential fires, as mentioned in literature and data:

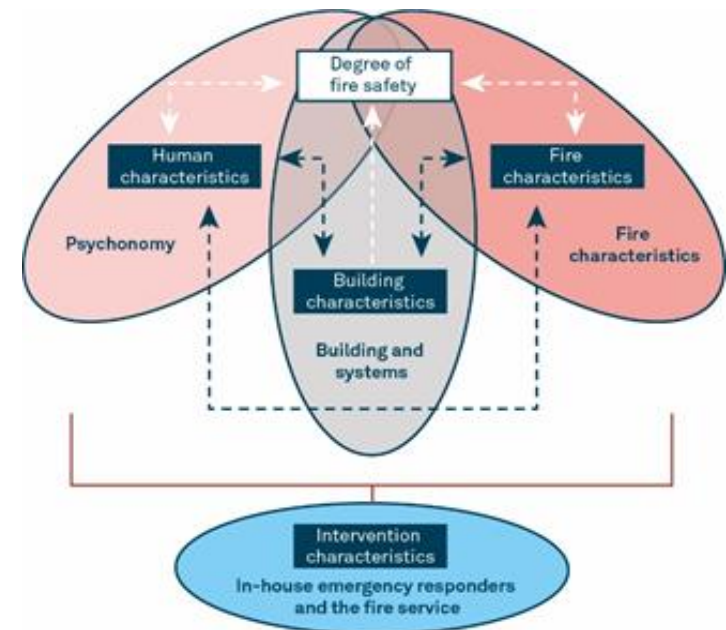
- ▶ Most frequent occurred factor (=> 'Main characteristic')
- ▶ More frequent occurred related to demographic statistics (=> 'Risk factor')
- ▶ Different definitions



Factors

What information about fatal residential fires is collected in the databases in the selected European countries?

- ▶ Number of fatalities, and additional injured people
- ▶ **Intervention characteristics:** time, day, month, rescue by fire brigade, response time.
- ▶ **Fire characteristics:** cause of fire, object of origin, room of origin, situation when fire brigade arrived.
- ▶ **Building characteristics:** type of house, number of floors, smoke detectors.
- ▶ **Human characteristics:** age, gender, alcohol, room where victim was found.



Definitions

Which definitions are used for the collected items and to what extent are they corresponding per country?

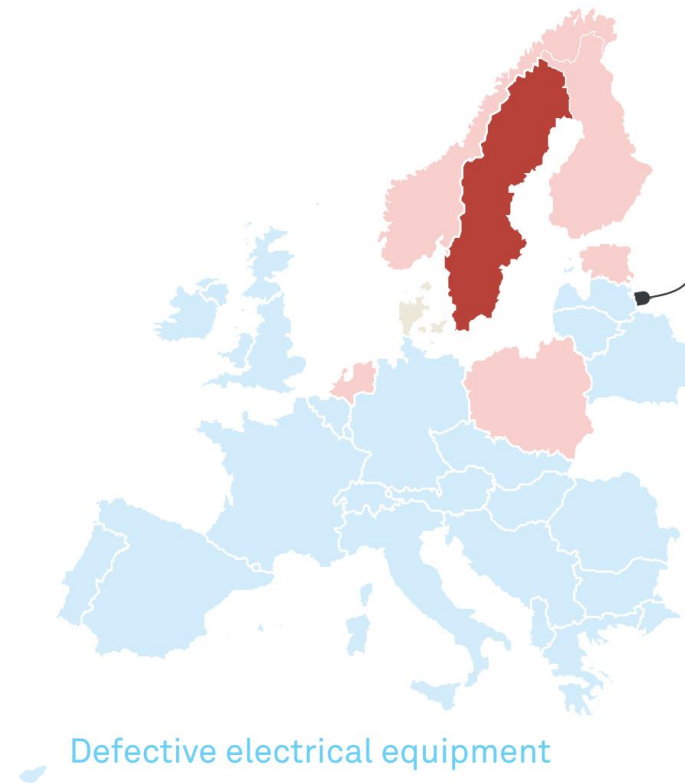
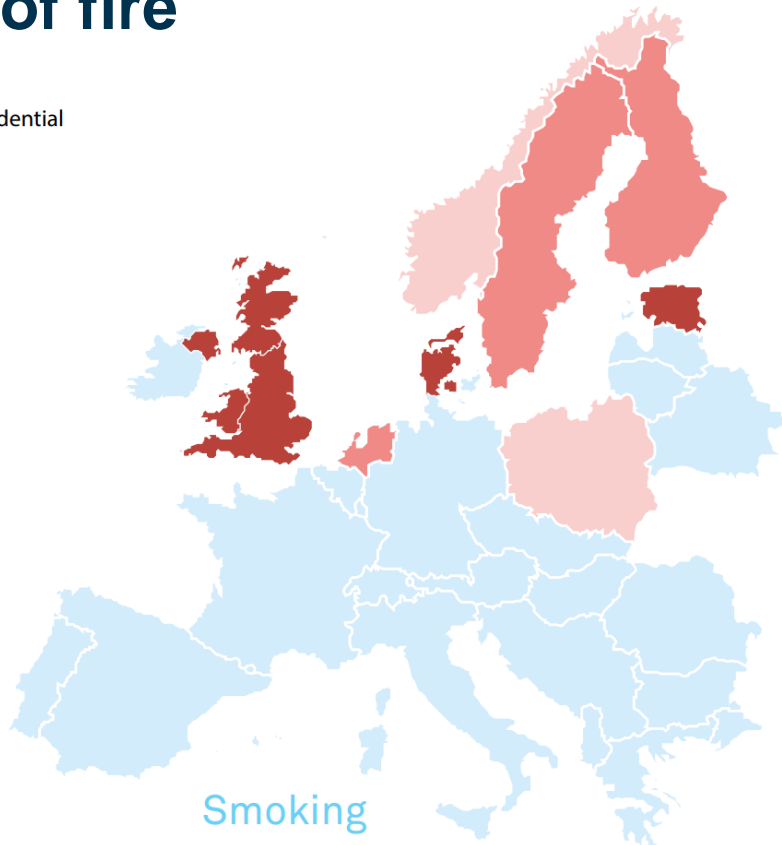
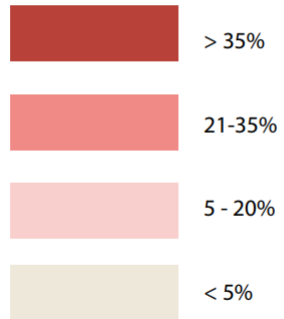
- ▶ Fire fatalities: died during the fire, died later, number of days
- ▶ Housing types: living homes, holiday homes, nursing homes
- ▶ Fire causes: accidental, intentional, suicide

The variations in definition are of marginal importance and can be overcome by correcting the data.

Results – fire characteristics

Cause of fire

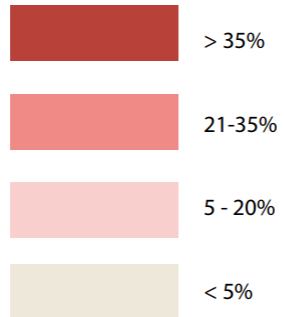
Percentages of causes of fatal residential fires in designated countries:



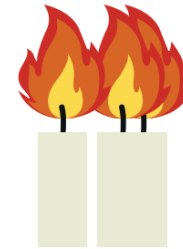
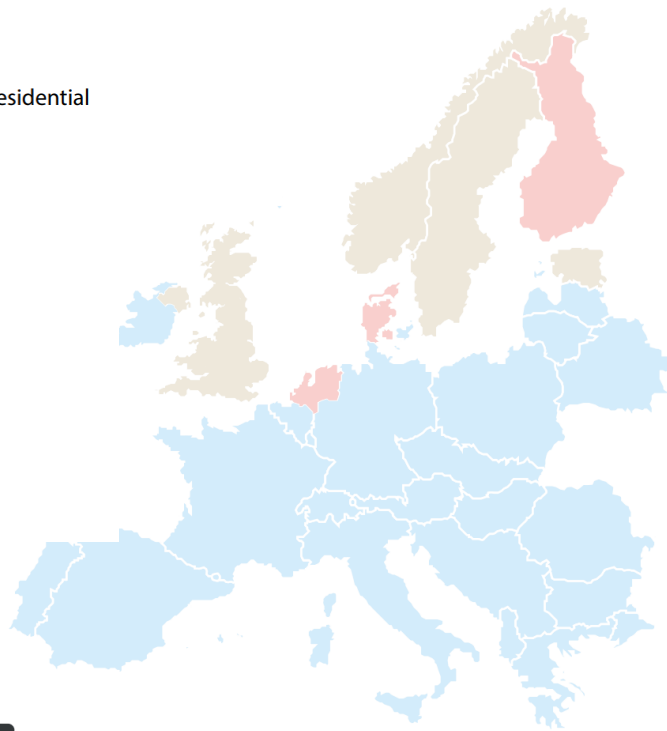
Results - fire characteristics

Cause of fire

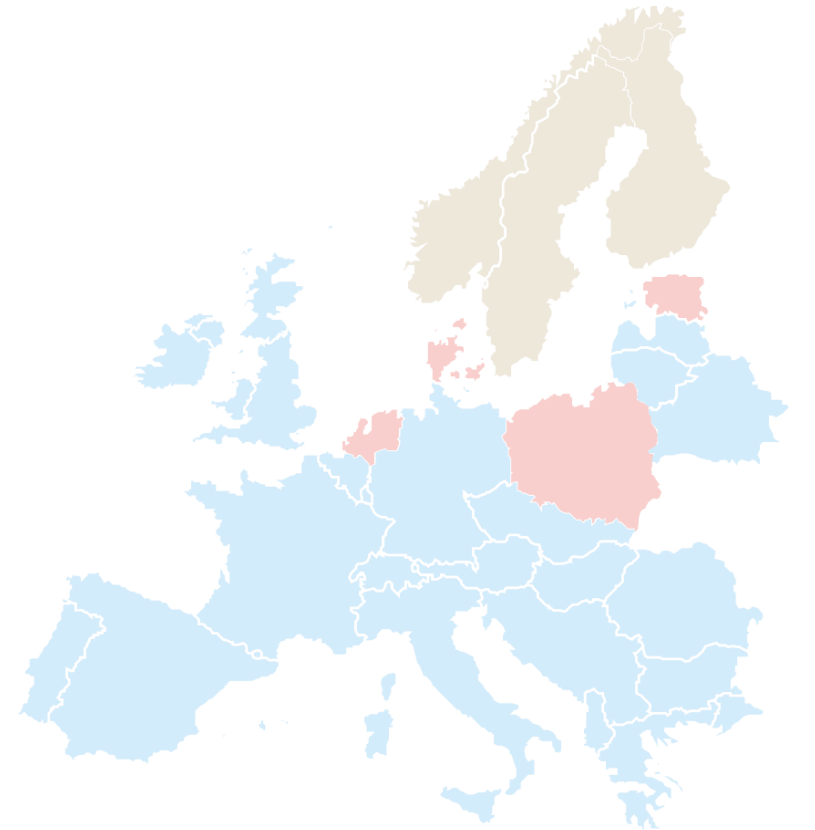
Percentages of causes of fatal residential fires in designated countries:



Cooking

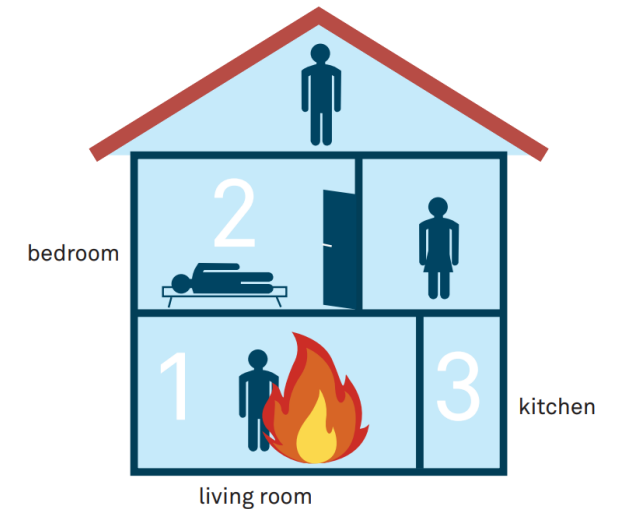
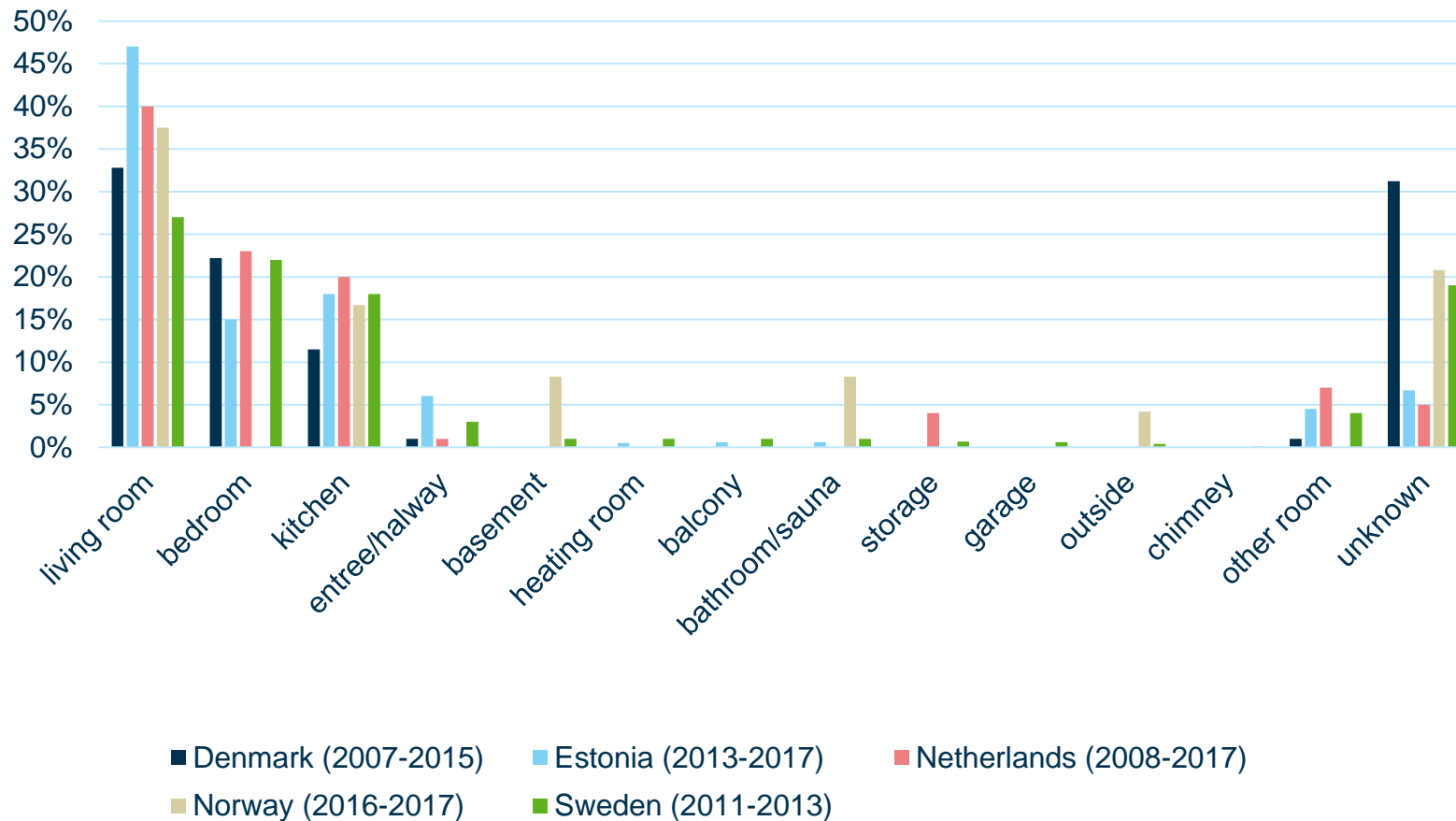


Carelessness with open fire



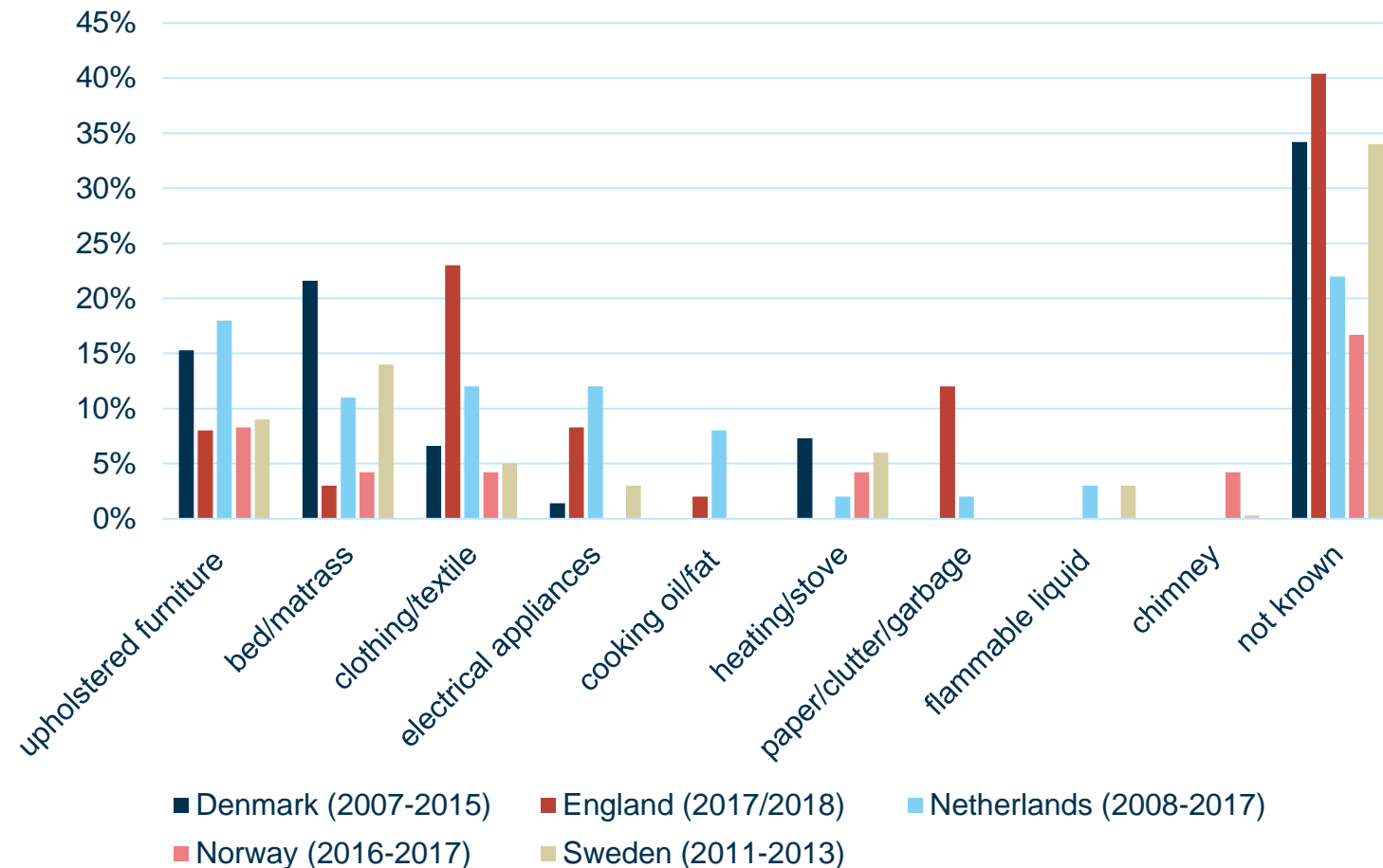
Results – fire characteristics

Room of origin



Results – fire characteristics

Object of origin



Results – building characteristics

Smoke detectors



The Netherlands:

46% not present
28% present
of which 19% activated
26% unknown

England:

34% not present
66% present
of which 25% activated

Norway:

13% not present
46% present
of which 17% activated
42% unknown

Estonia:

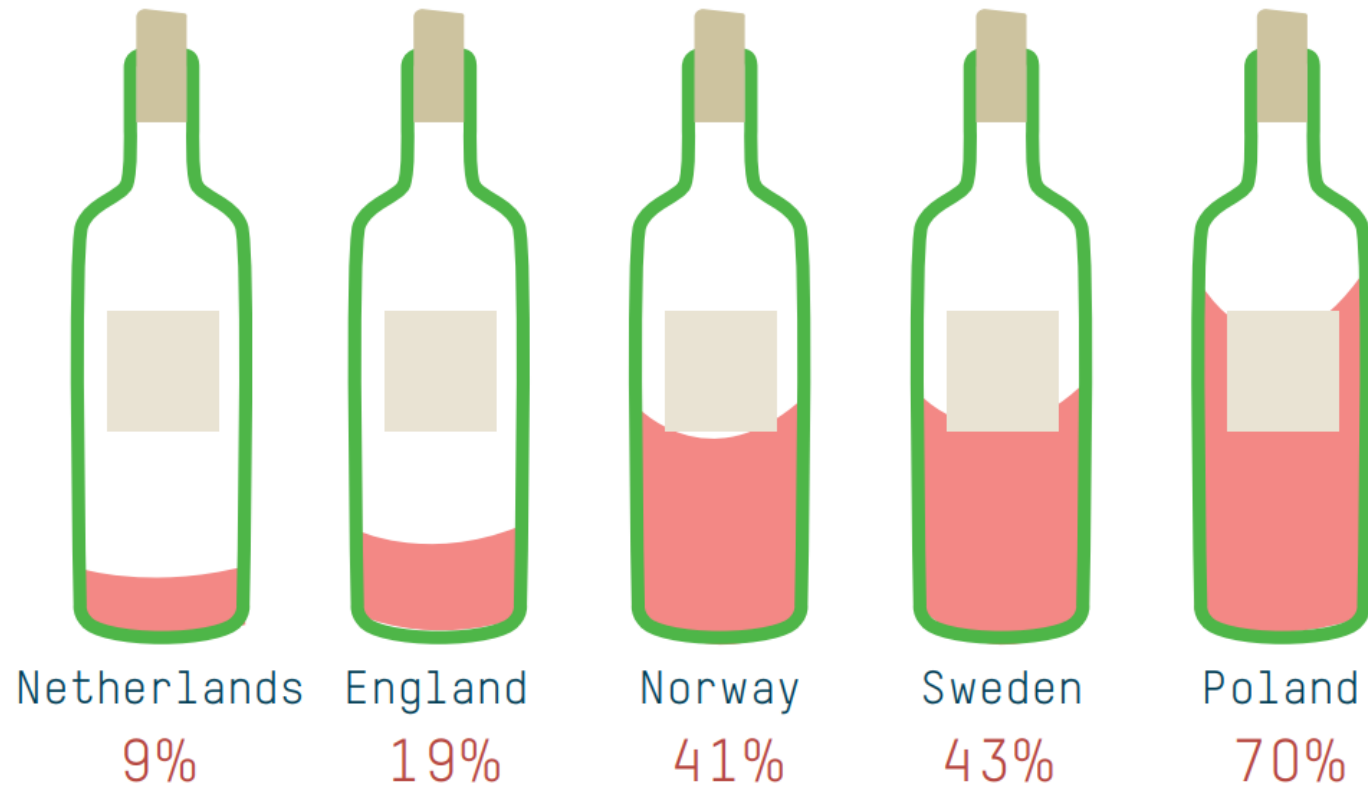
53% not present
30% present
of which 45% activated
17% unknown

Sweden:

46% not present
32% present

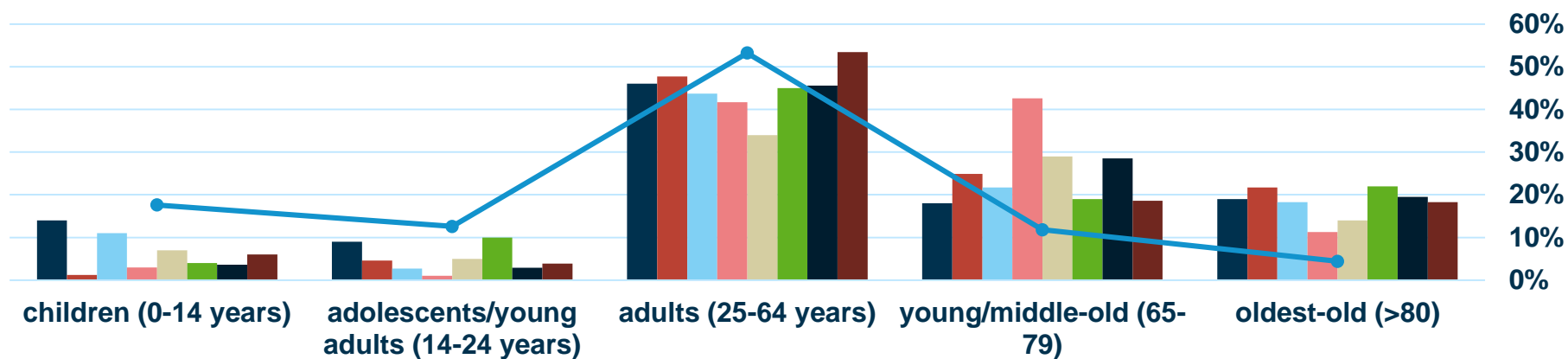
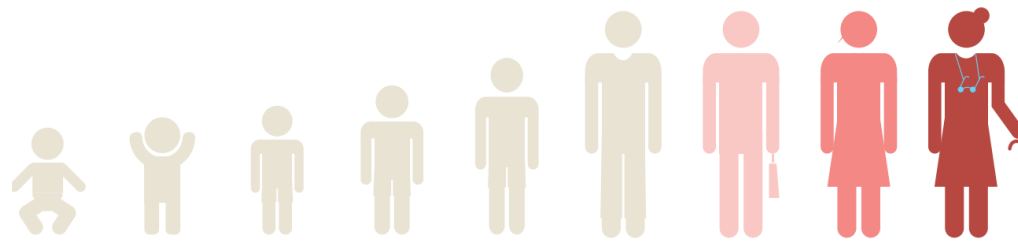
Results – human characteristics

Alcohol consumption



Results - human characteristics

Age



Belgium (2014-2015)

England (2017/2018)

Netherlands (2008-2017)

Sweden (2011-2013)

age distribution of population in designated countries (average)

Denmark (2007-2014)

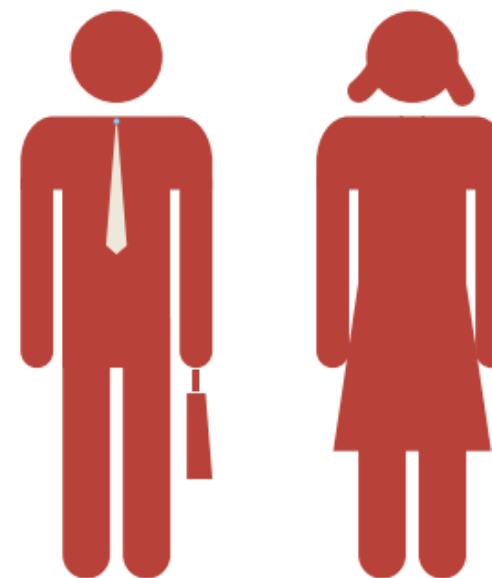
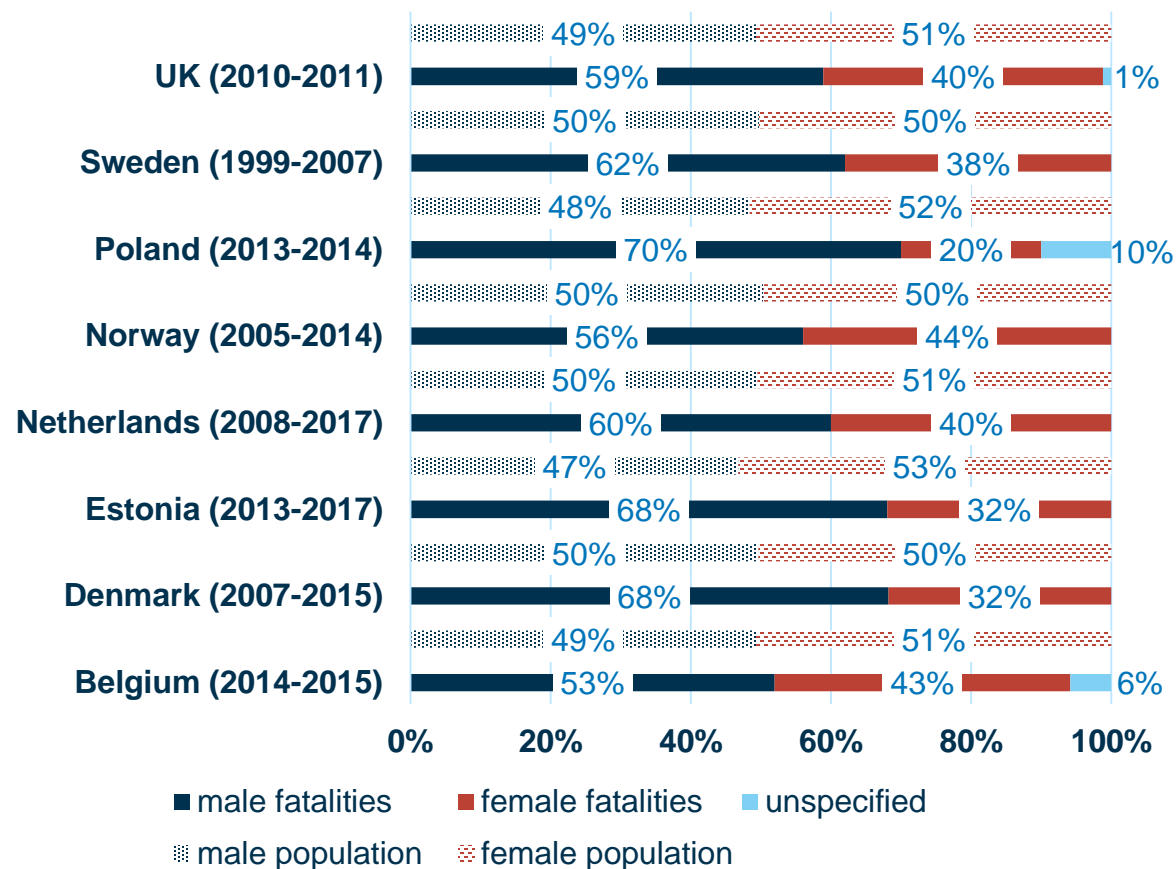
Estonia (2013-2017)

Norway (2007-2014)

UK (2011-2011)

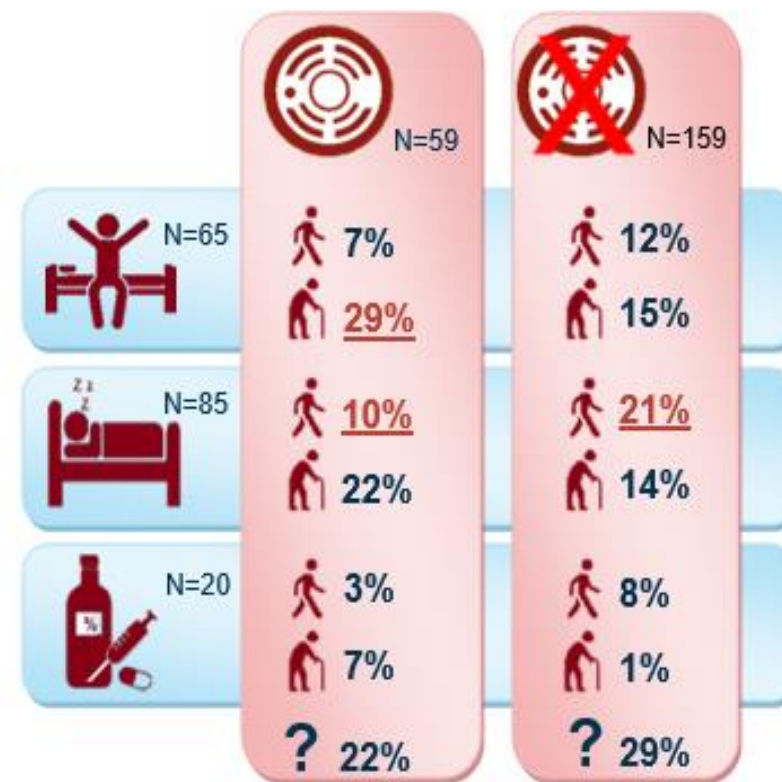
Results - human characteristics

Gender



Next steps

- ▶ European-wide data collection (or representative sample)
- ▶ More conformity in data collection
- ▶ Working towards crosslinks to provide more insight in the relationship between causes and effects.
- ▶ Replacing main characteristics by risk profiles.



Publications

Report:



Folder:

