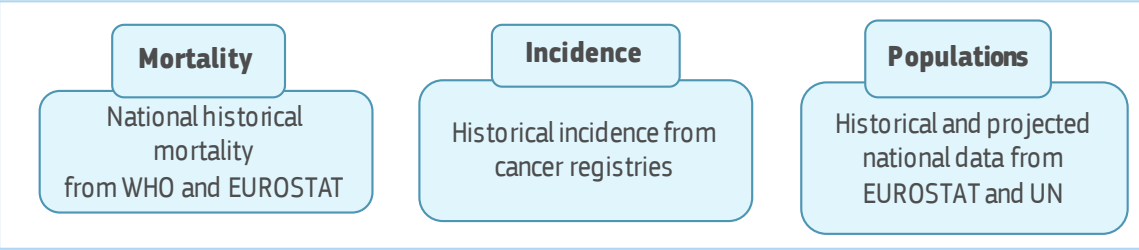
Cancer burden in Europe: estimates 2022 and up to 2040

14 November 2023
ENCR General Assembly
ENCR-IACR 2023 Scientific Conference, Granada, Spain

European Commission

Cancer burden estimates

- WHY : to overcome the time lag due to CR and mortality data availability
- HOW :



- WHEN : update every 2 years
- WHERE : ECIS and Globocan (collaboration between JRC/ENCR and IARC)
- WHAT :

2022

projections based on the last available time trends of incidence and mortality rates

European countries

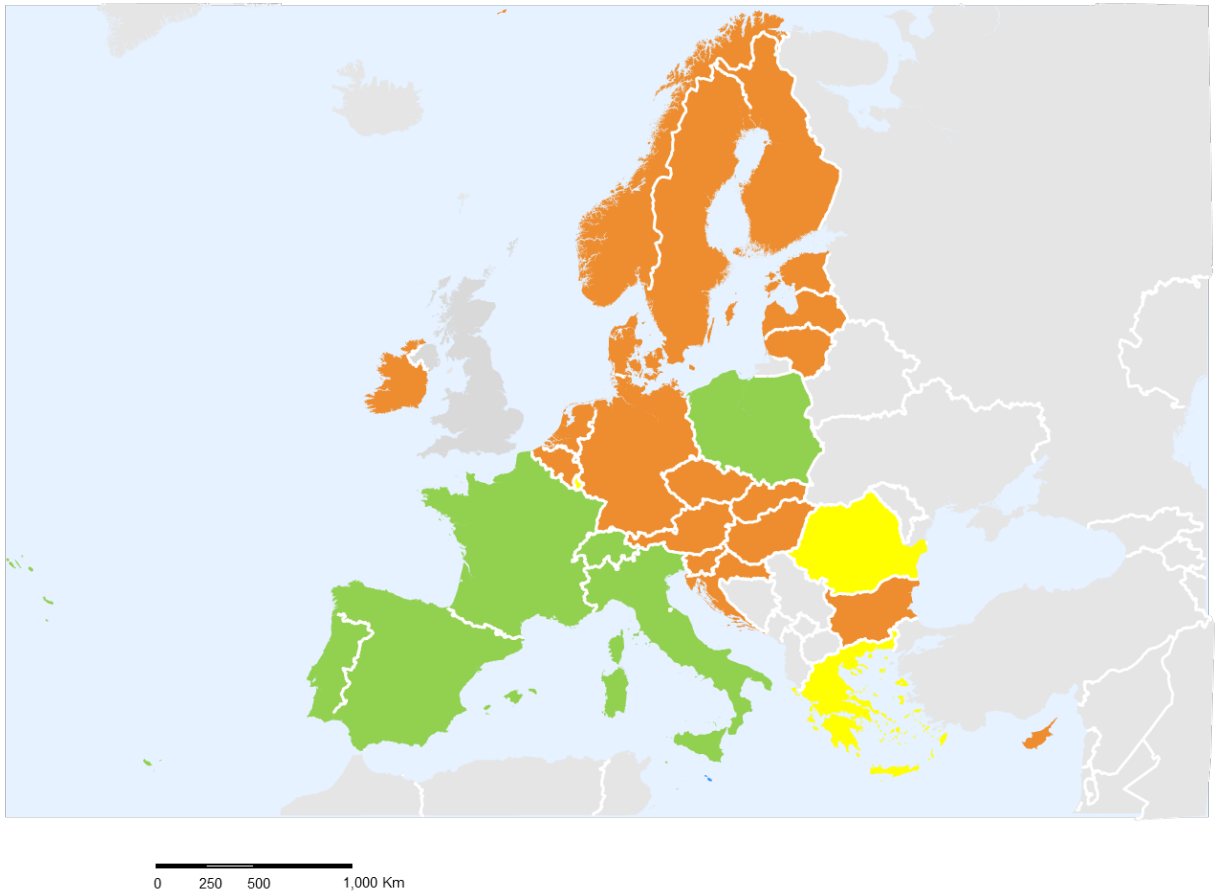
2025-2040

assumption: same rates as in 2022
effect: population change/ageing only

EU and EFTA countries

European Commission

Data availability and methods



- Estimates based on national and local incidence data
- Estimates based on local incidence and national mortality data
- Estimates based on national mortality and incidence data from neighboring countries

EU and EFTA* countries

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*Lichtenstein not included

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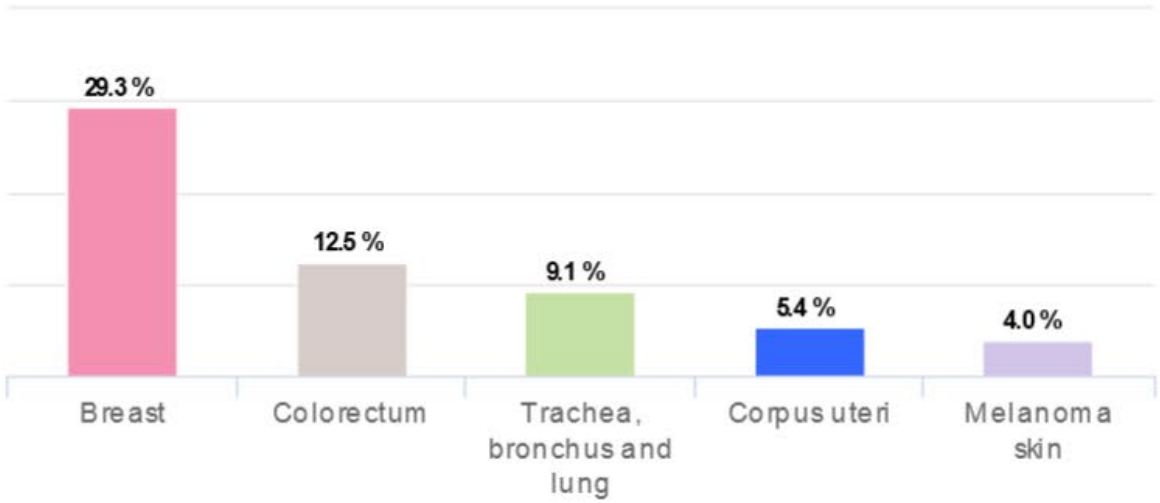
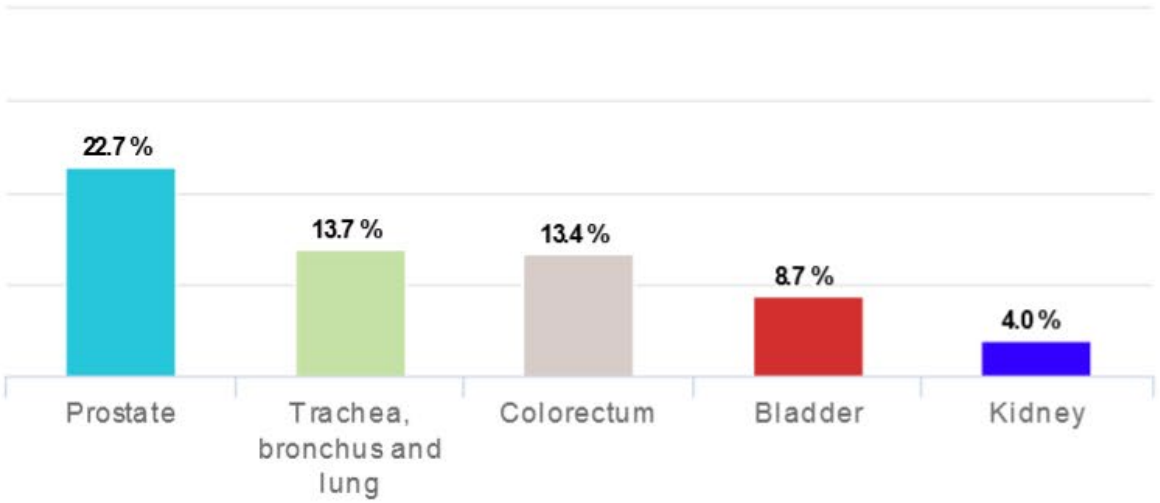
Most commonly diagnosed cancers in 2022

1 316 642 new cases



1 513 070 new cases



Referred to all cancer sites but non-melanoma skin

EU and EFTA* countries

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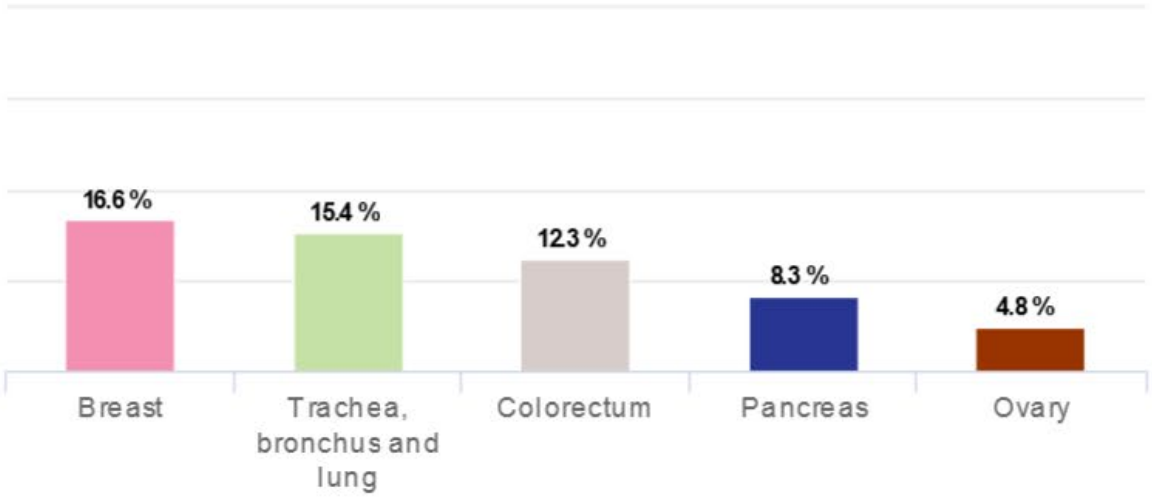
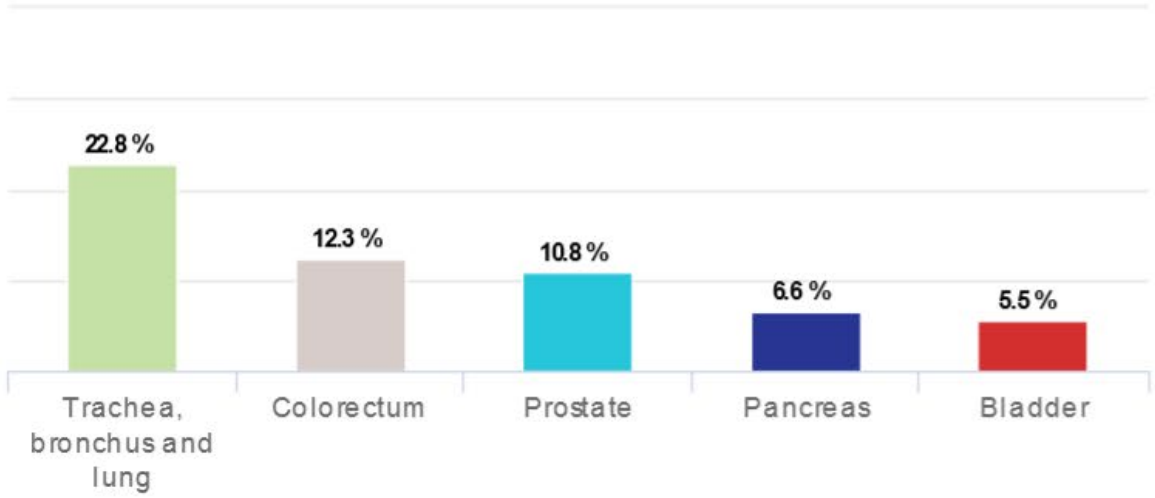
Most common cancer causes in 2022

590 905 deaths



734 953 deaths



Referred to all cancer sites but non-melanoma skin

EU and EFTA* countries

*Lichtenstein not included

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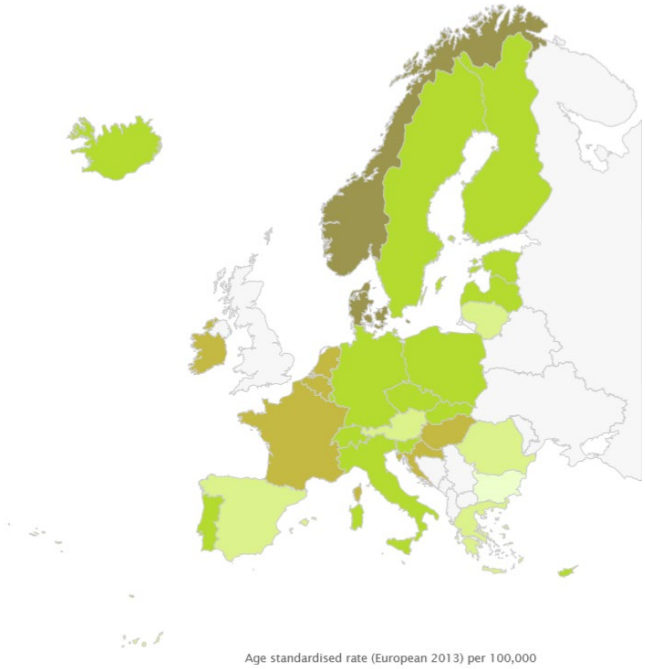
Geographical variation in 2022

INCIDENCE

422.4 – 483.8
483.8 – 545.2
545.2 – 606.6
606.6 – 668.0
668.0 – 729.4

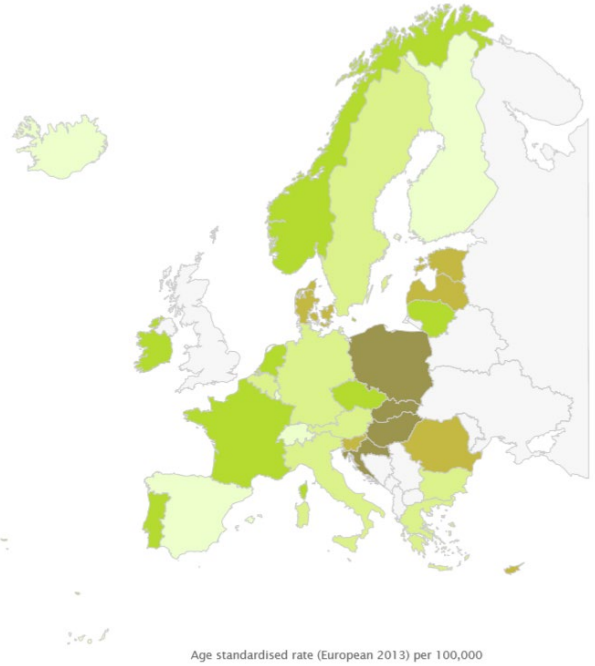
Age standardised rate
(European standard population)
per 100.000



MORTALITY

208.9 – 233.2
233.2 – 257.5
257.5 – 281.9
281.9 – 306.2
306.2 – 330.5

Age standardised rate
(European standard population)
per 100.000



EU and EFTA* countries

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2040 projected population in EU-27 + EFTA* countries: baseline vs other demographic scenarios

Possible alternative fertility, mortality and migration developments:

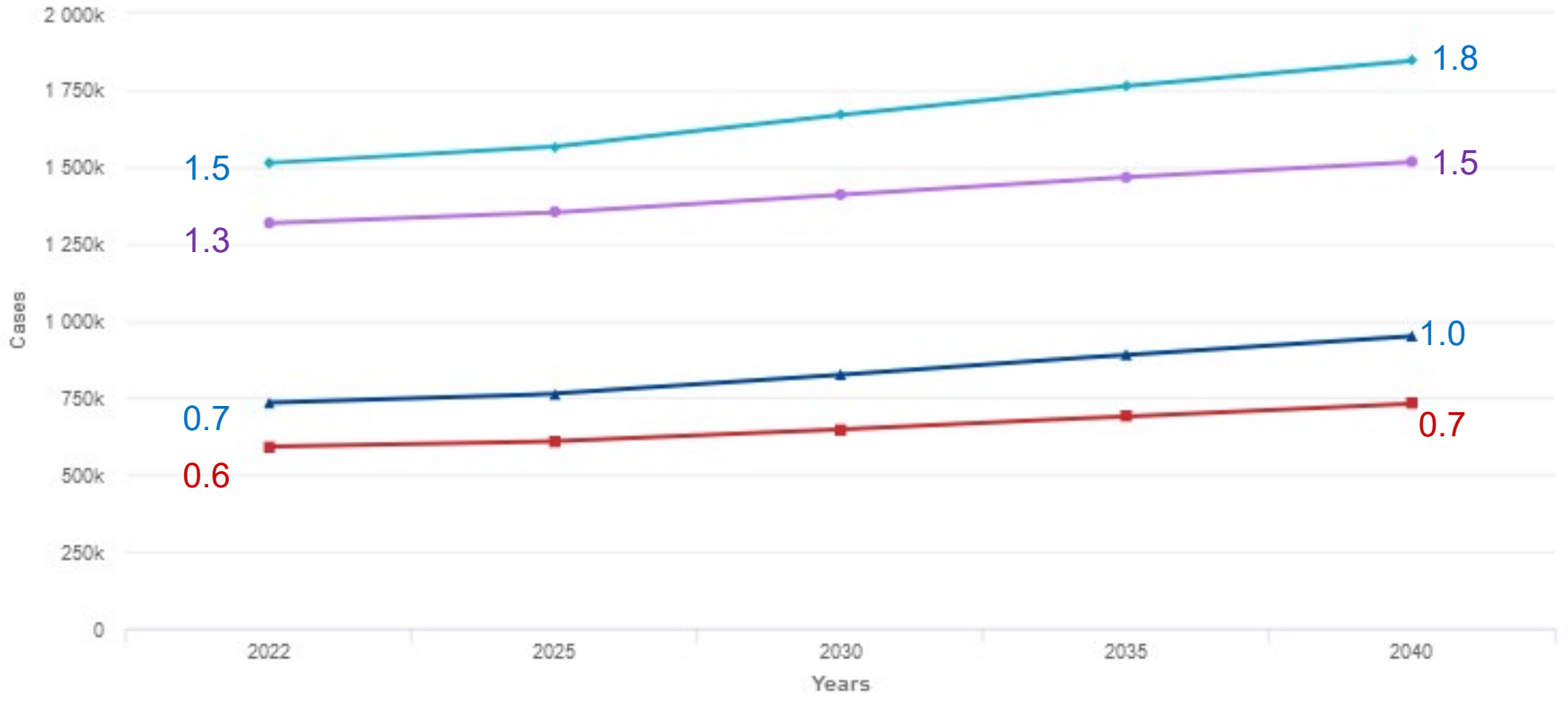
- Lower fertility - fertility rates 20% lower
- Lower mortality - life expectancy at birth +2 years by 2070
- Lower migration - net migration -33%
- Higher migration - net migration +33%
- No migration - net migration set to 0.

Each scenario has a different impact on age pyramid of the projected population

*Lichtenstein not included

Long-term cancer burden estimates

All cancers but non melanoma skin



+21.9% (20.6%-23.7%)

+15.2% (13.5%-16.6%)

+29.4% (28.5-32.1%)

+23.7% (22.9%-25.9%)

(No/Lower migration – Lower mortality)

EU and EFTA* countries

*Lichtenstein not included

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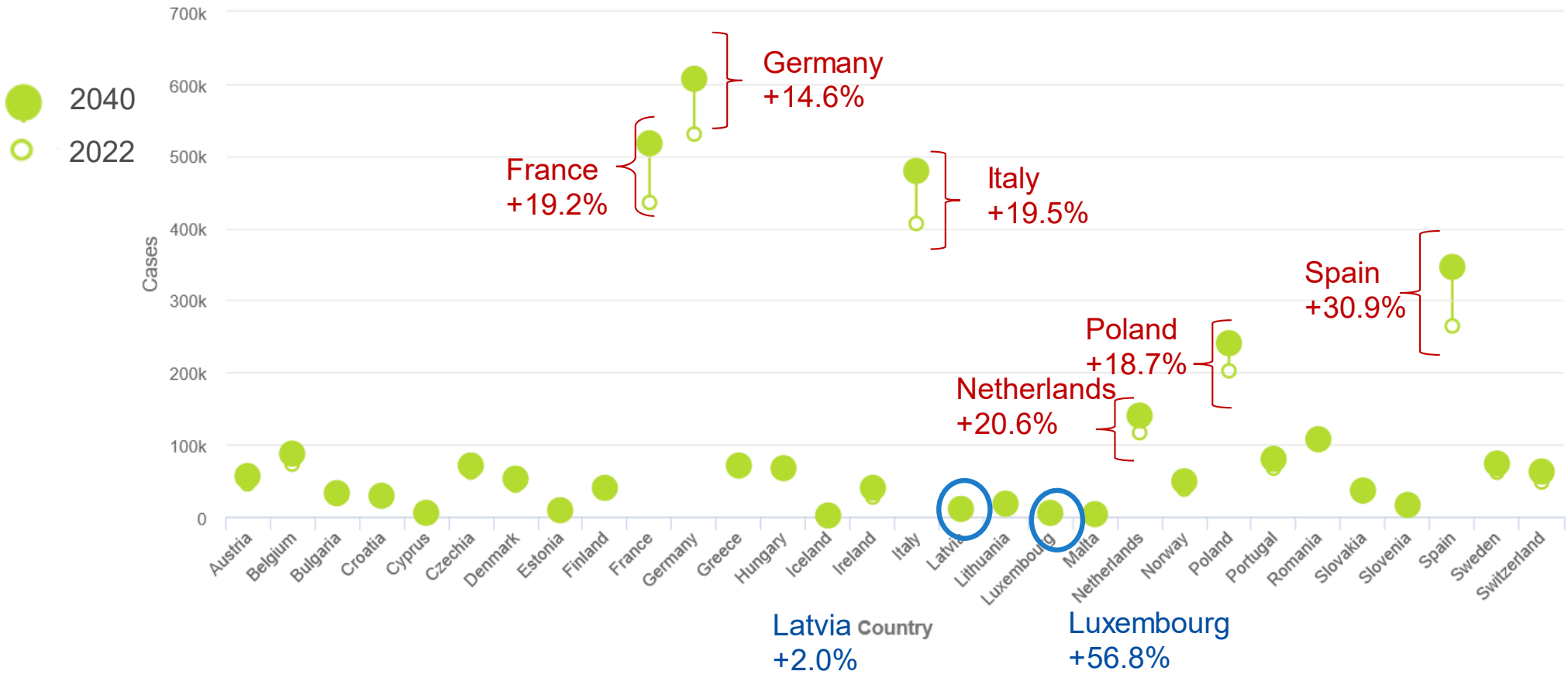
Relative change (**2040** vs 2022) in cancer **incidence**



All cancers but non melanoma skin

Countries with ≥20,000 new cases increment

EU and EFTA* countries

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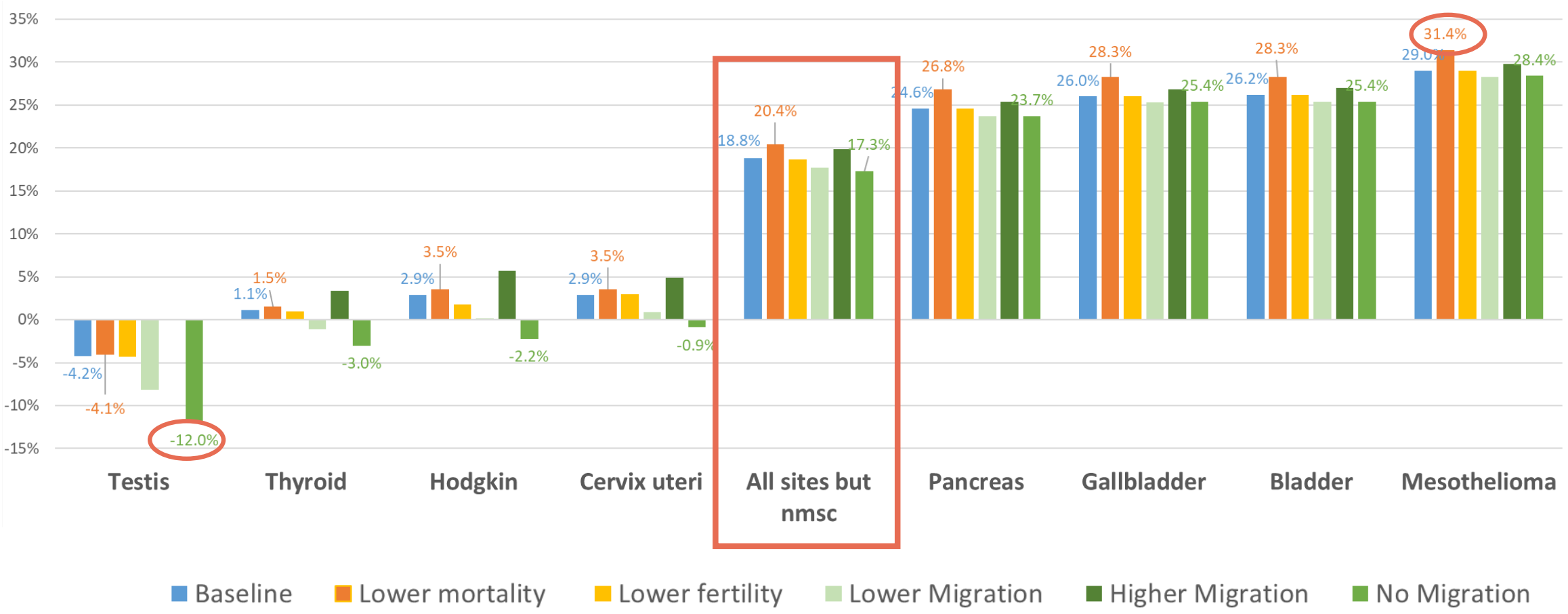
Relative change (**2040** vs 2022) in cancer incidence



EU and EFTA* countries

*Lichtenstein not included

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Estimates of cancer burden in EU and EFTA countries

- 2022 cancer estimates of breast, colorectal, cervical, prostate, lung and gastric cancers account for 54% of all new cancer cases and 50% of cancer deaths in the EU and EFTA countries.

- Cancer diagnoses expected to increase of 19% and cancer deaths of 27% by 2040 due to population ageing in EU and EFTA countries

- **High value of short/long-term estimates for EU cancer health policies**

*Lichtenstein not included

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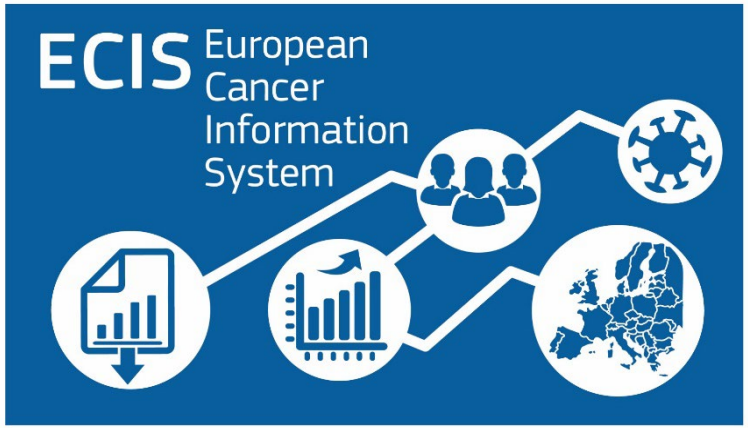
Thank you



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Cancer burden : population-ageing effect up to 2040

2040 projected population in EU-27 + EFTA* countries: baseline vs other demographic scenarios

Baseline males
Baseline females
LowerFertility
LowerMortality
LowerMigration
NoMigration
HigherMigration

Each scenario has a different impact on age pyramid

*Lichtenstein not included

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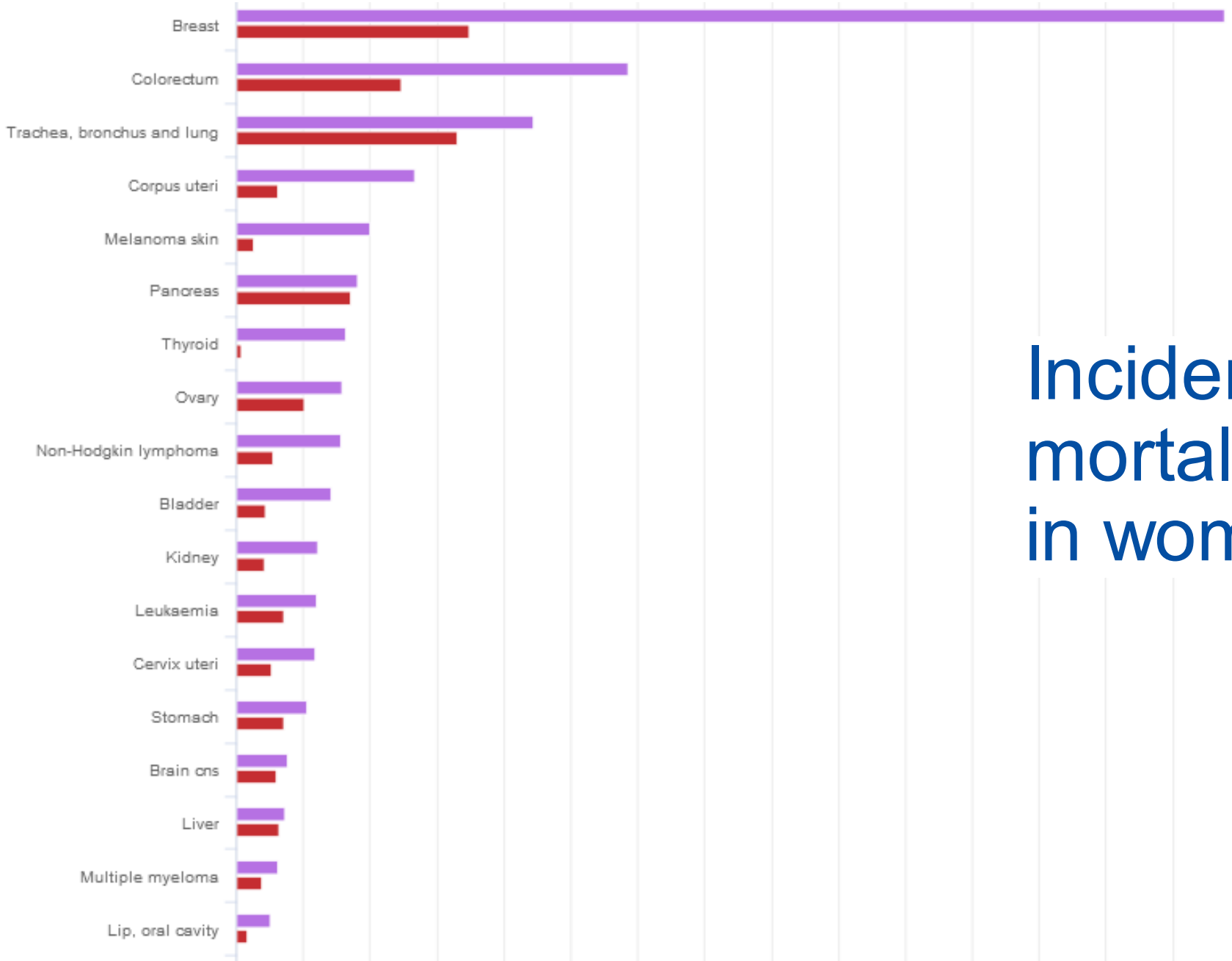
Cancer burden : projections to 2022



Incidence vs mortality rates in women

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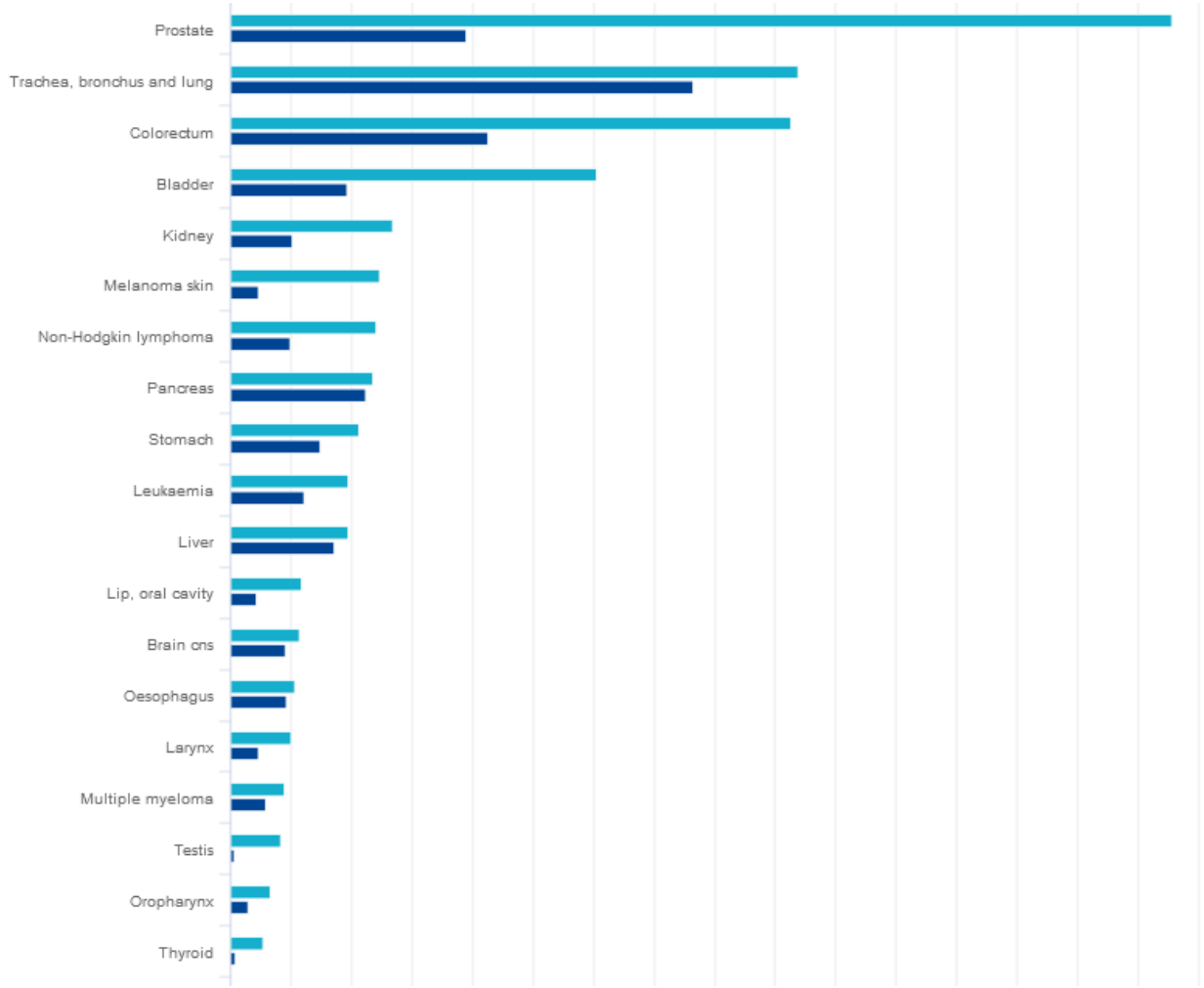
Incidence vs mortality rates in men



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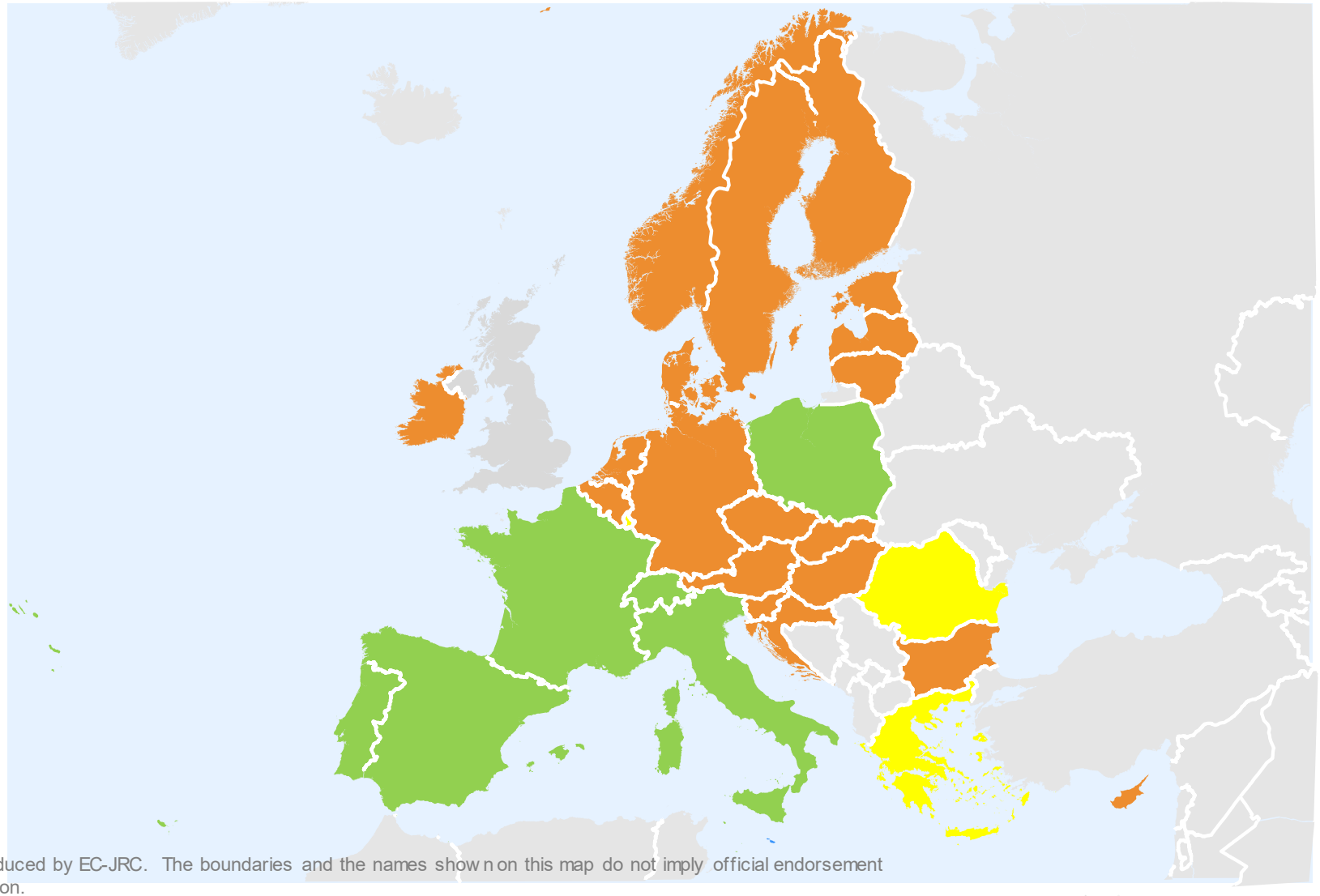
EU countries



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0 250 500 1,000 Km

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Other cancers but nmsc 26.6%

Breast 13.8%

Colorectum 13%

Stomach 2.7%

Kidney 3.3%

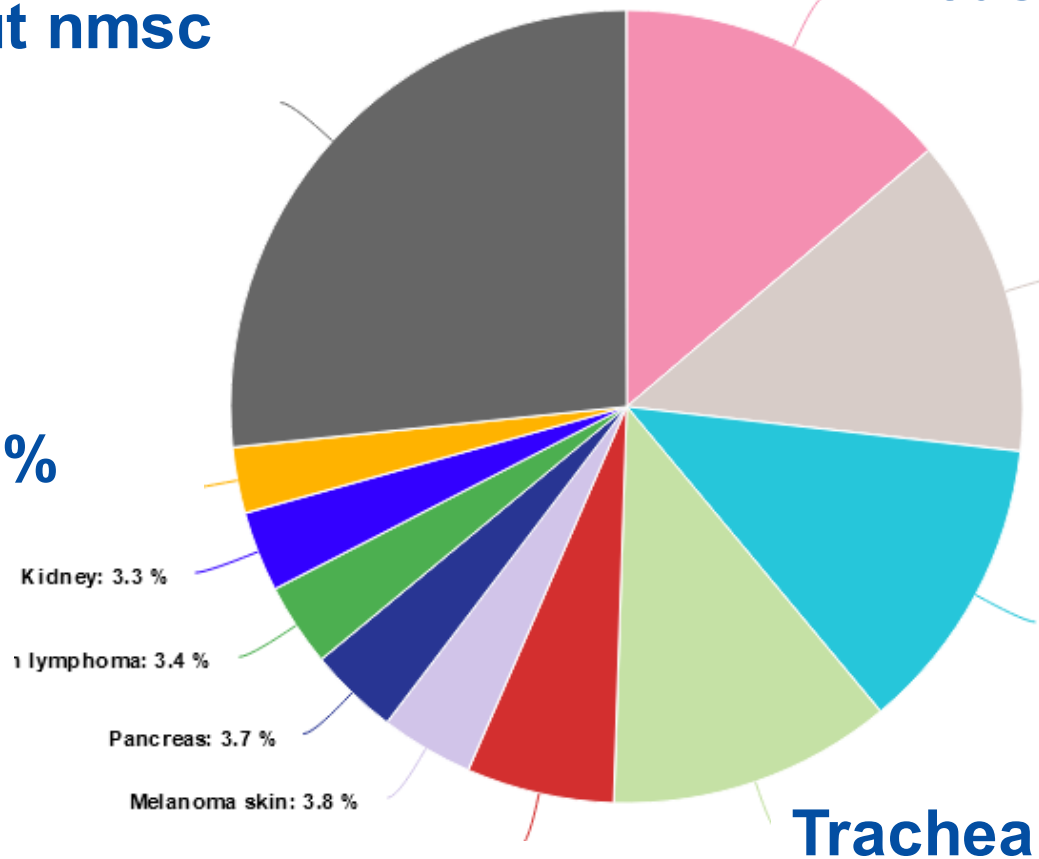
Prostate 12%

Pancreas 3.7%

Melanoma 3.8%

Trachea, bronchus and lung 12%

Bladder 6%



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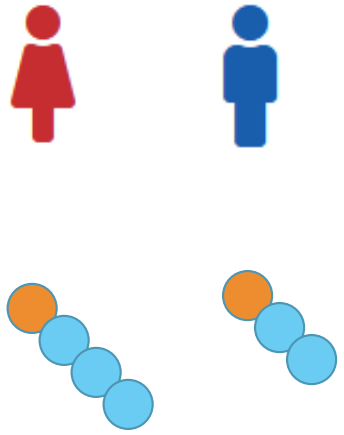
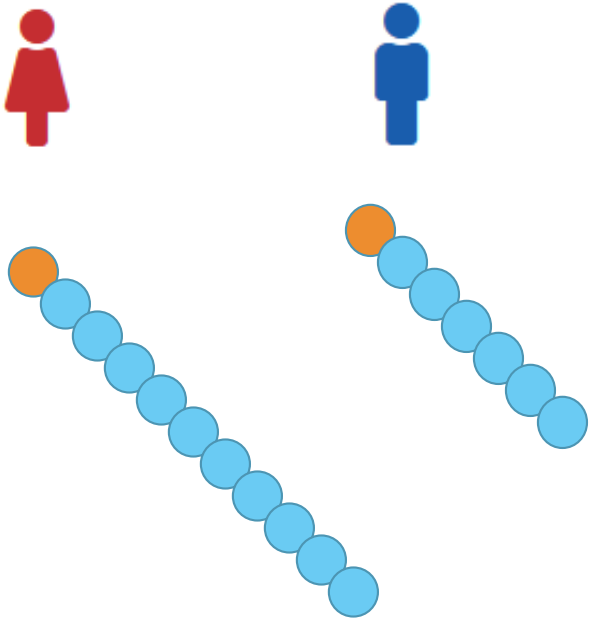
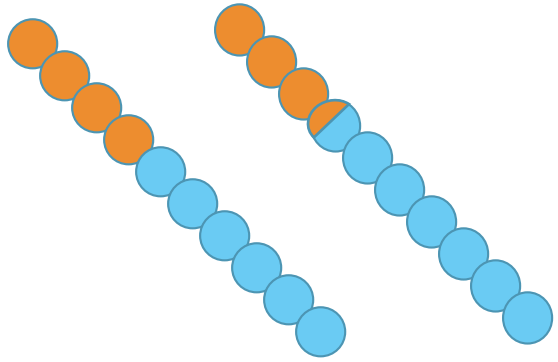
Lifetime risk for all cancers* in 2022

0-74 years

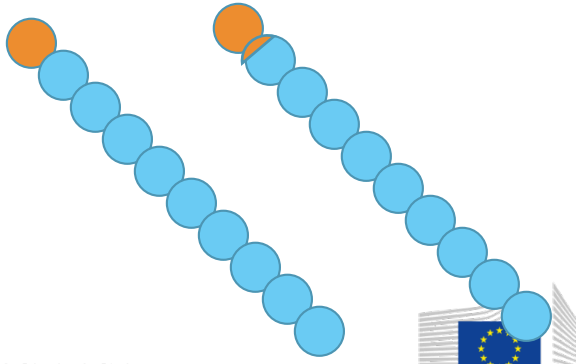


- 1:4 incidence female
- 1:3 incidence male
- 1:11 mortality female
- 1:7 mortality male





- 25% incidence female
- 31% incidence male
- 9% mortality female
- 13% mortality male



*but non-melanoma skin cancers

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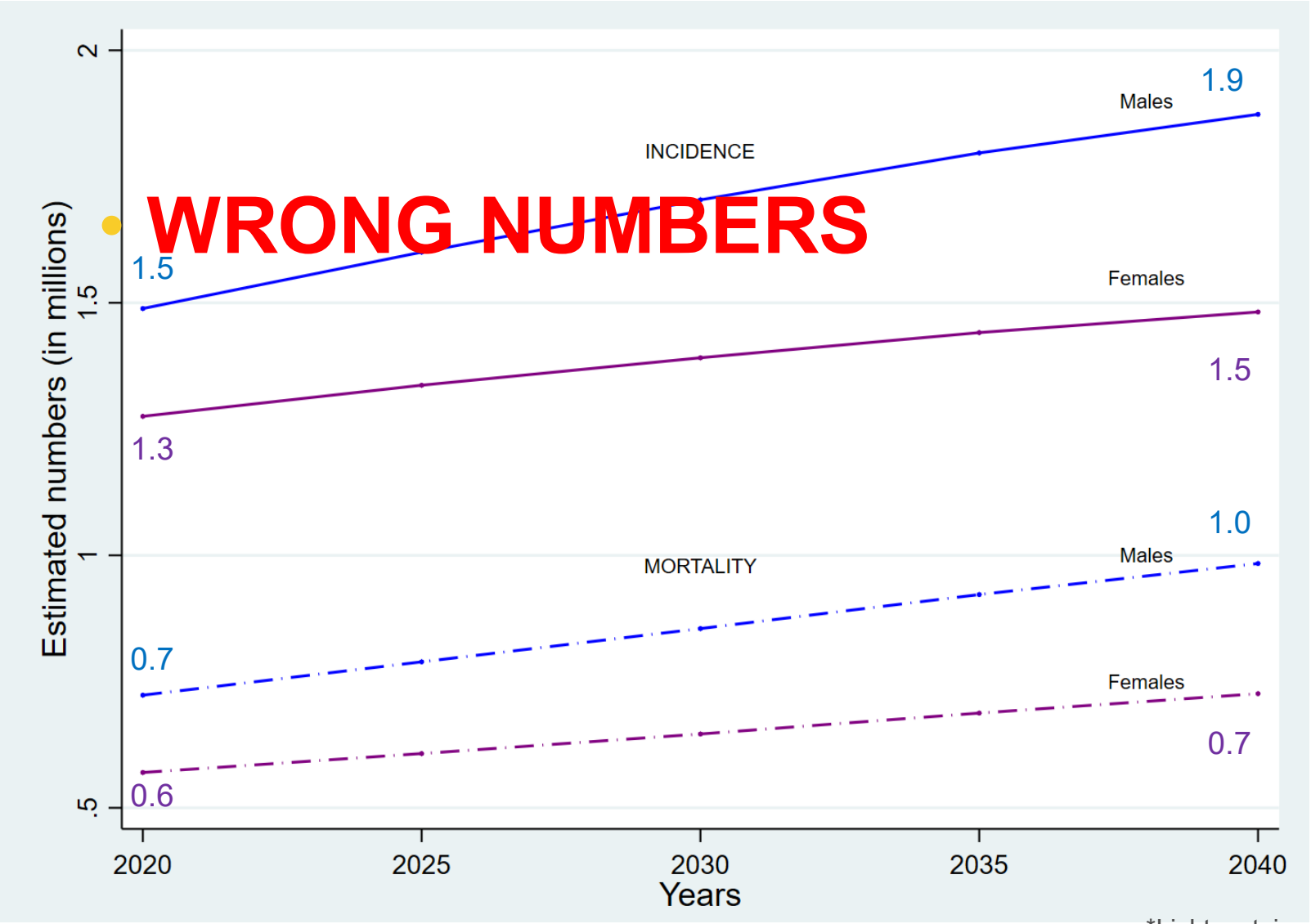
Long-term cancer burden estimates in EU-27 + EFTA* countries (baseline scenario)



WRONG NUMBERS

All cancers but non melanoma skin

+25.8%

+16.2%

+36.1%

+27.4%

*Lichtenstein not included

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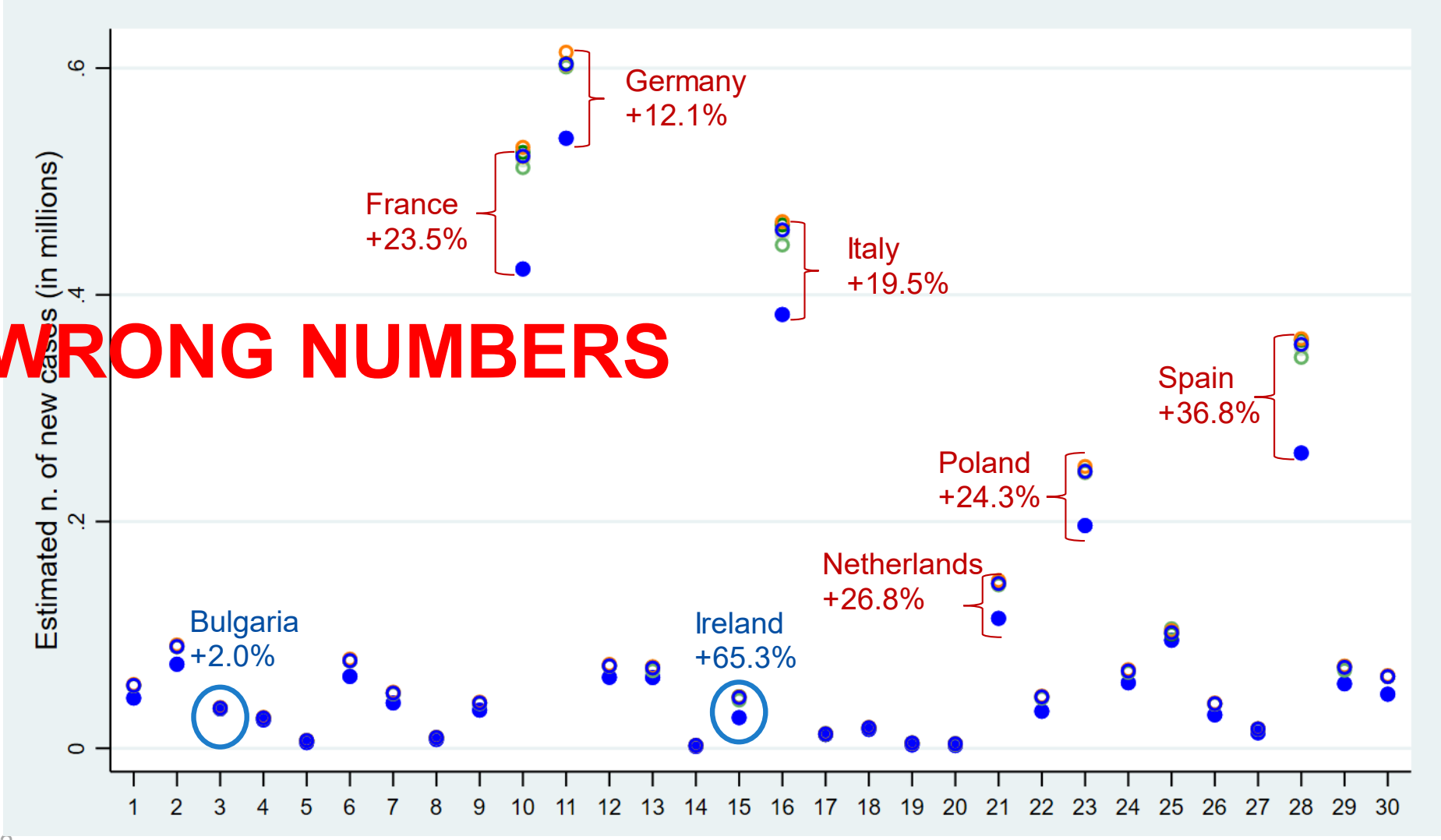
Relative change (**2040** vs 2020) in cancer **incidence** by scenario and country – EU-27+EFTA* countries



All cancers but non melanoma skin

- 2040 lower mortality
- 2040 lower fertility
- 2040 higher migration
- 2040 lower migration
- 2040 no migration
- 2040 baseline
- 2020

Countries with ≥30,000 new cases increment

- **WRONG NUMBERS**

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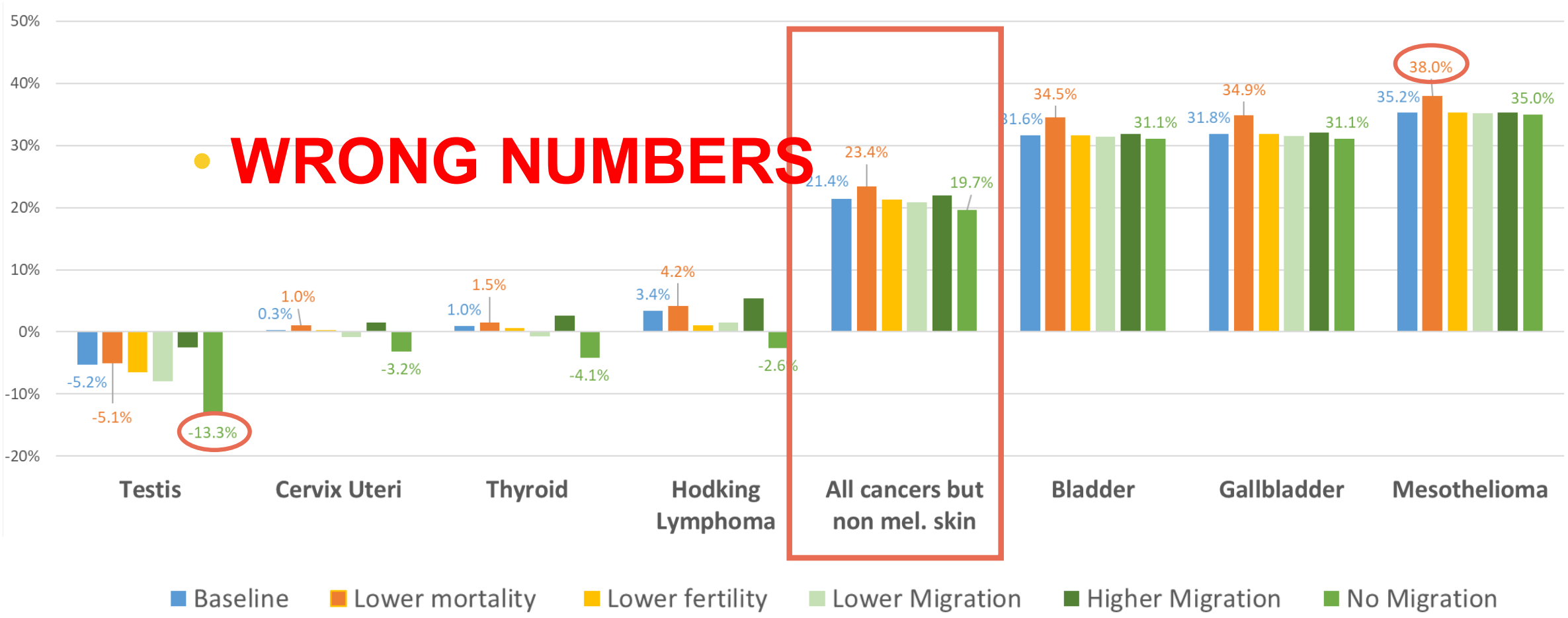
Relative change (**2040** vs 2020) in cancer incidence for selected cancers in EU-27+EFTA* countries



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This is an original form of the slide above, just for the record

Long-term estimates of cancer burden

- Different assumptions for fertility, mortality, and migration impact the age pyramid structure of projected population of EU-27 + EFTA* countries.

- Number of new cancer cases and cancer deaths is expected to increase by 2040 and the increase is country, cancer site and population assumptions specific:
  - biggest increments for ***lower mortality*** scenario, smallest increments for ***no migration*** scenario
  - pronounced variation in the strength of the increment between countries
  - bigger impact of different population scenarios on the mortality burden as compared to incidence burden

- **The results short/long-term estimates are of value for planning cancer health policies in the EU**

*Lichtenstein not included

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Long-term estimates of cancer burden

- Number of new cancer cases and cancer deaths is expected to increase by 2040 according to each demographic scenario

  - biggest increments for ***lower mortality*** scenario, smallest increments for ***no migration*** scenario
  - pronounced variation in the strength of the increment between countries
  - bigger impact of different population scenarios on the mortality burden as compared to incidence burden

- **The results short/long-term estimates are of value for planning cancer health policies in the EU**

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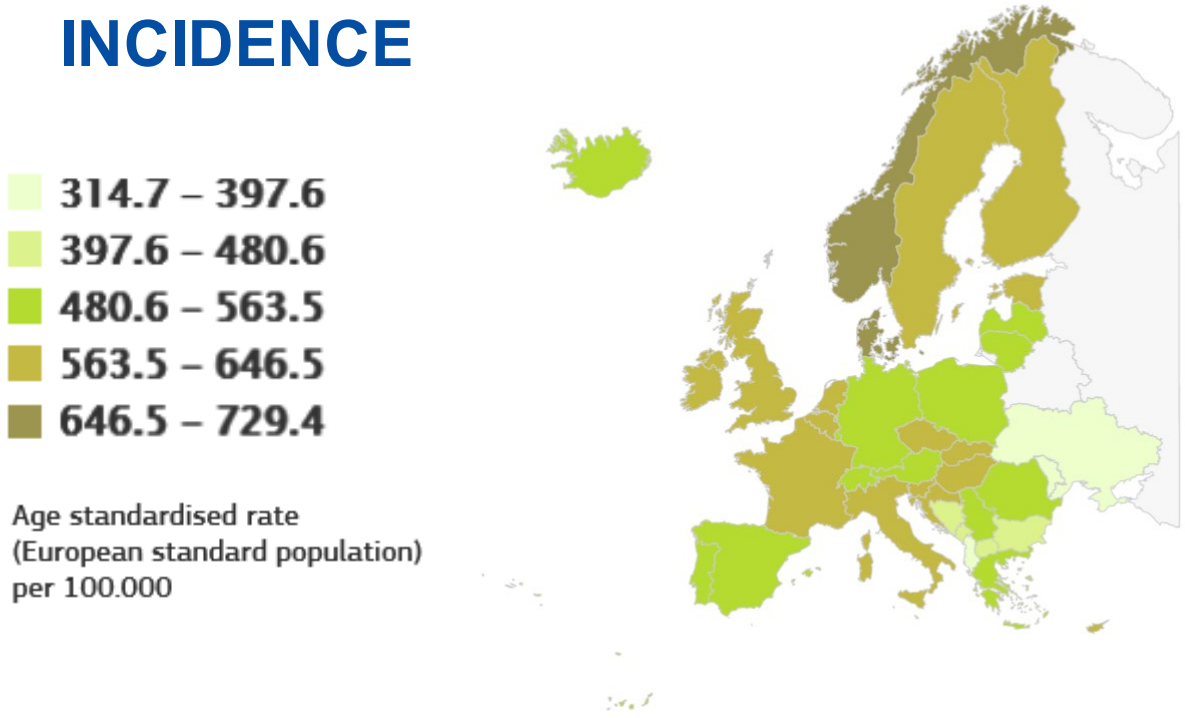
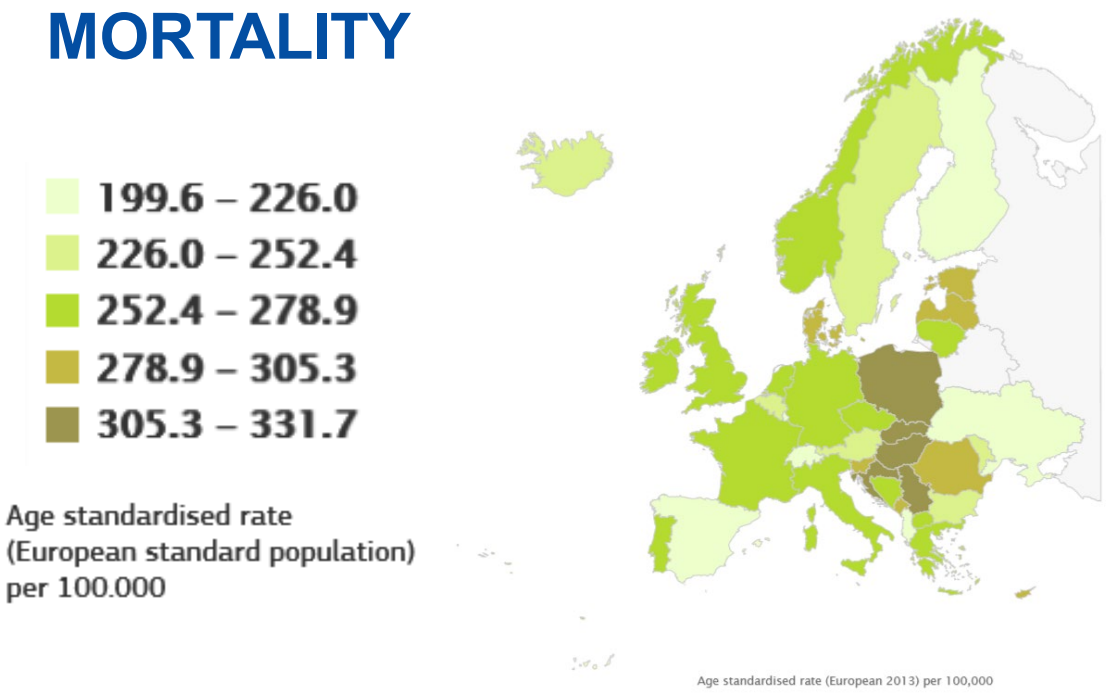
Geographical variation in 2022

INCIDENCE



MORTALITY



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