Amsterdam UMC
University Medical Centers

Cancer RADAR

Assess the current risk and preventable burden of (cervical) cancer among individuals with a migration background

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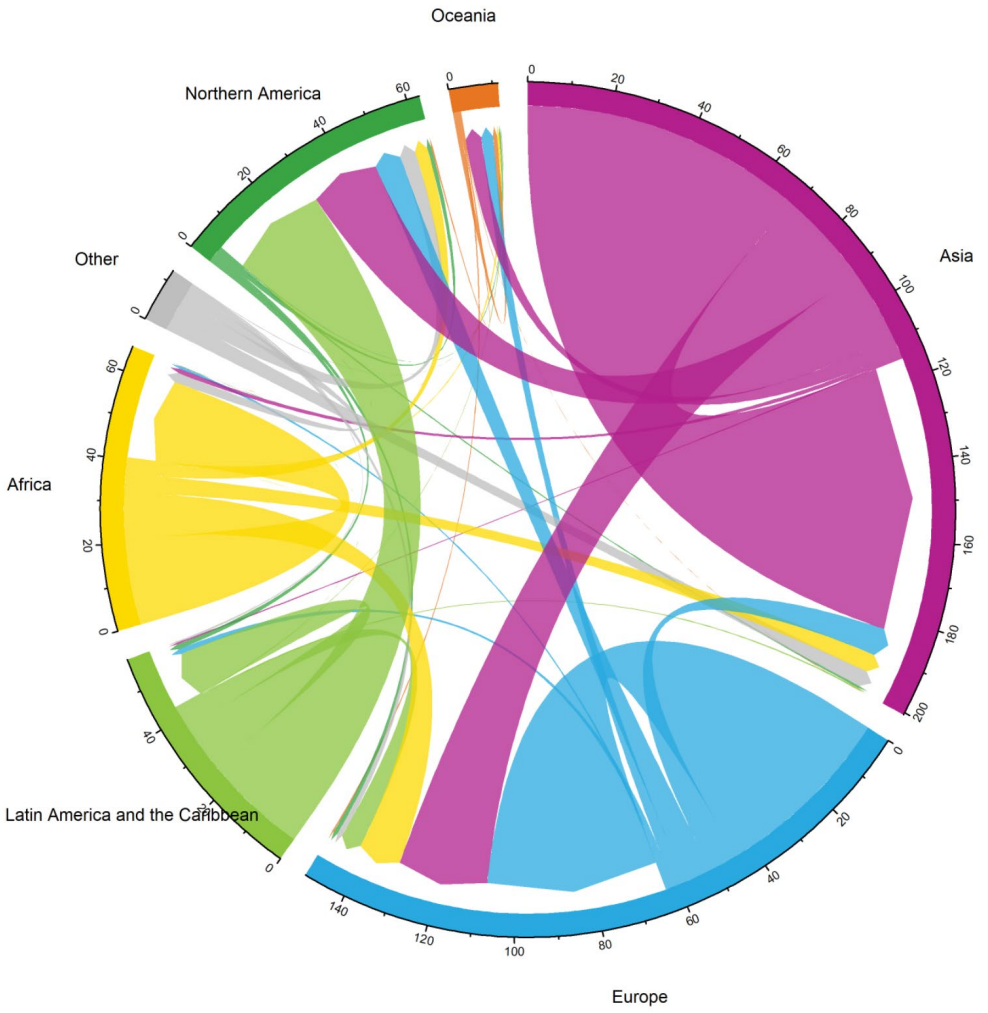
The lack of evidence and data has hindered the development of policies and programmes to achieve the SDGs *(26)* for migrants, refugees and other displaced populations. It has also limited progress towards the objectives of the Global Compact for Safe, Orderly and Regular Migration (GCM) *(27)*, the Global Compact on Refugees *(28,29)* and the WHO Global action plan on promoting the health of refugees and migrants, 2019–2030 *(30)*.

Objectives	Measure of success	Means of verification
4. **Strengthened migration health governance and improved data for decision-making**	Number of countries with improved migration health data collection and/or improved policy frameworks for migration health governance	Biennial questionnaire to Member States

Migration in numbers



Arrows show corridors of migration from the region of origin to the region of destination, scaled to size.

Source: *UN, International Migrant Stock 2020*

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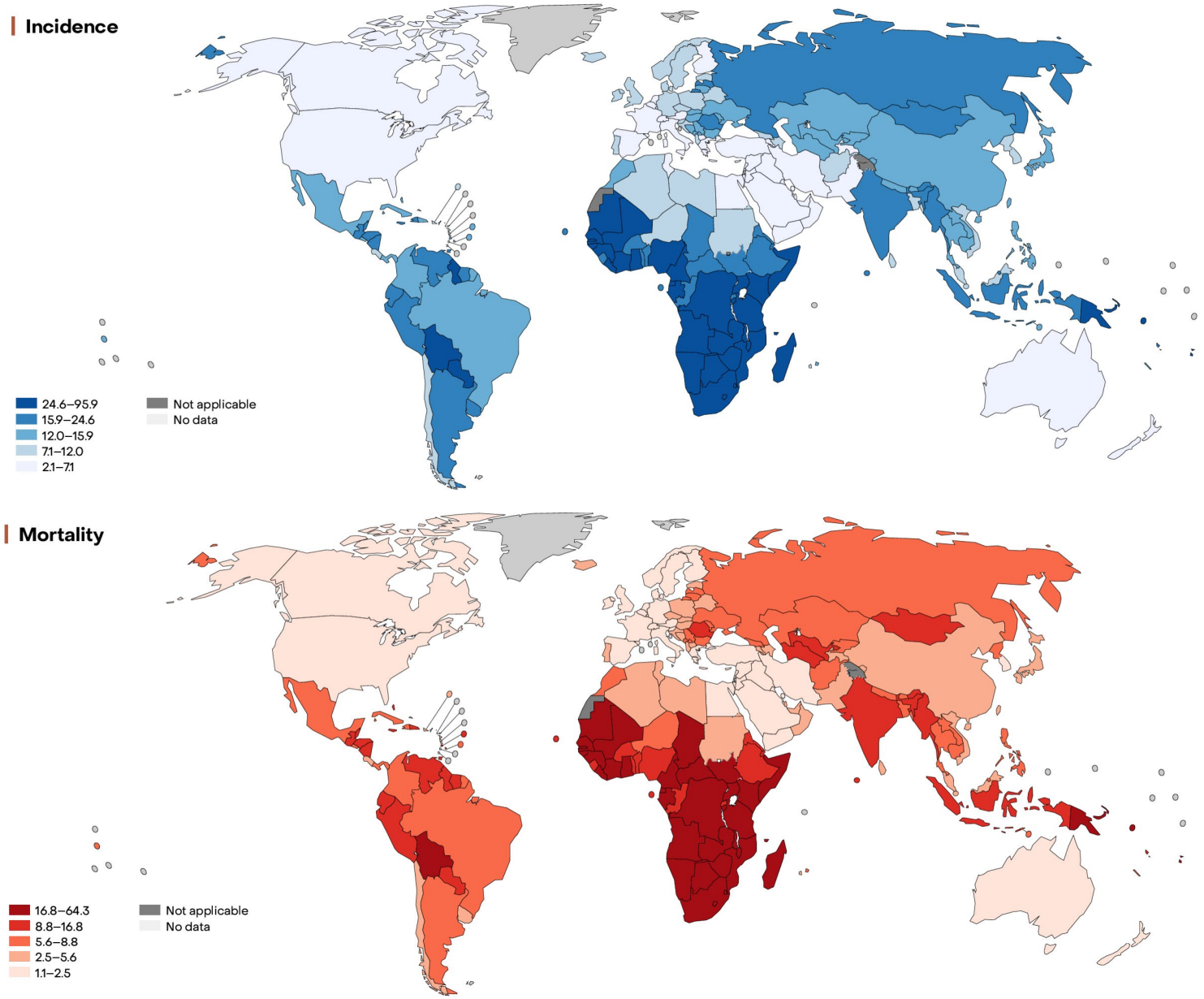
Cervical cancer in numbers



Source: GLOBOCAN, 2022

“Migration” of cervical cancer “risk” worldwide

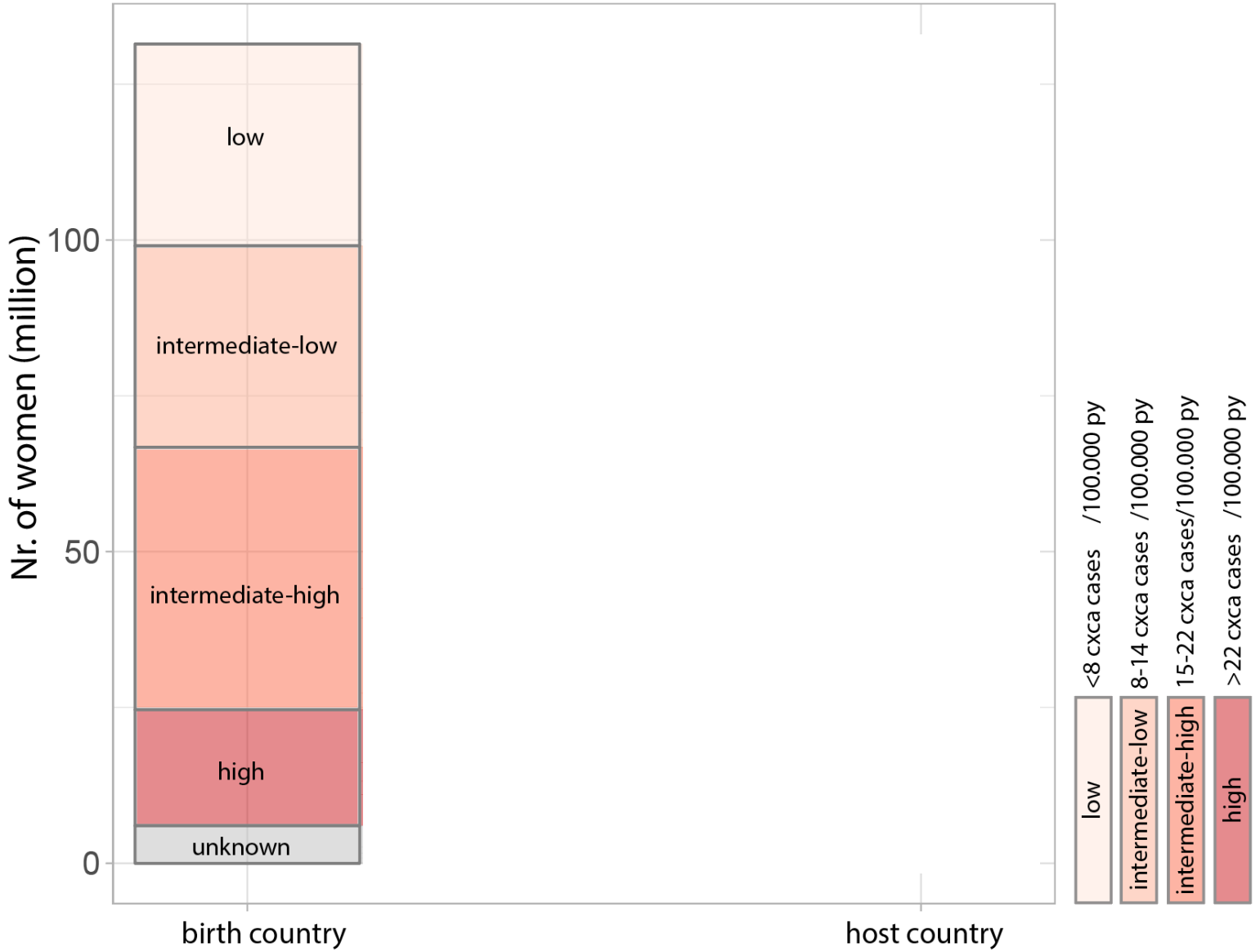


Figure: *D. Georges, IARC-WHO*
Data: *UN, International Migrant Stock 2020 + GLOBOCAN, 2022*

“Migration” of cervical cancer “risk” worldwide

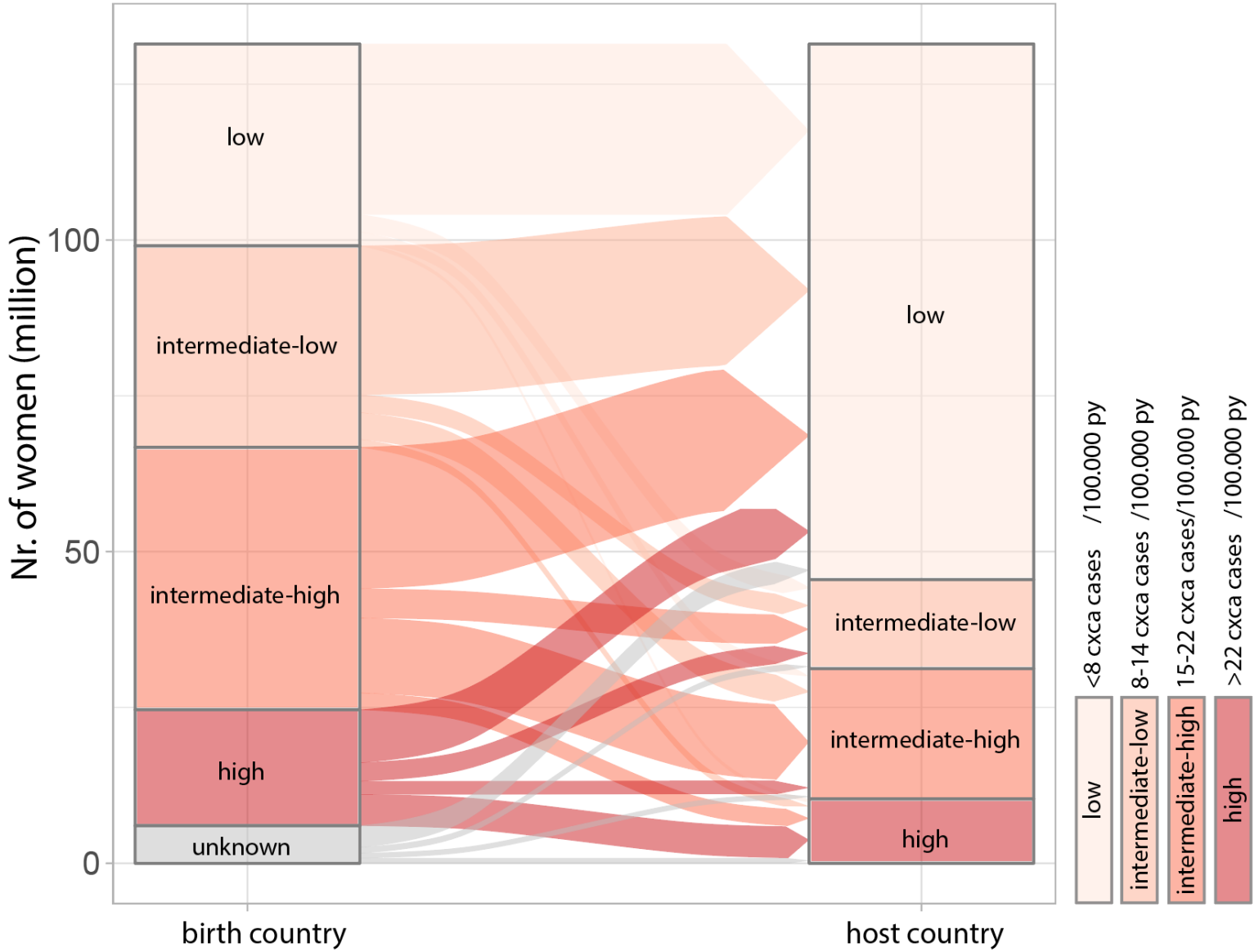
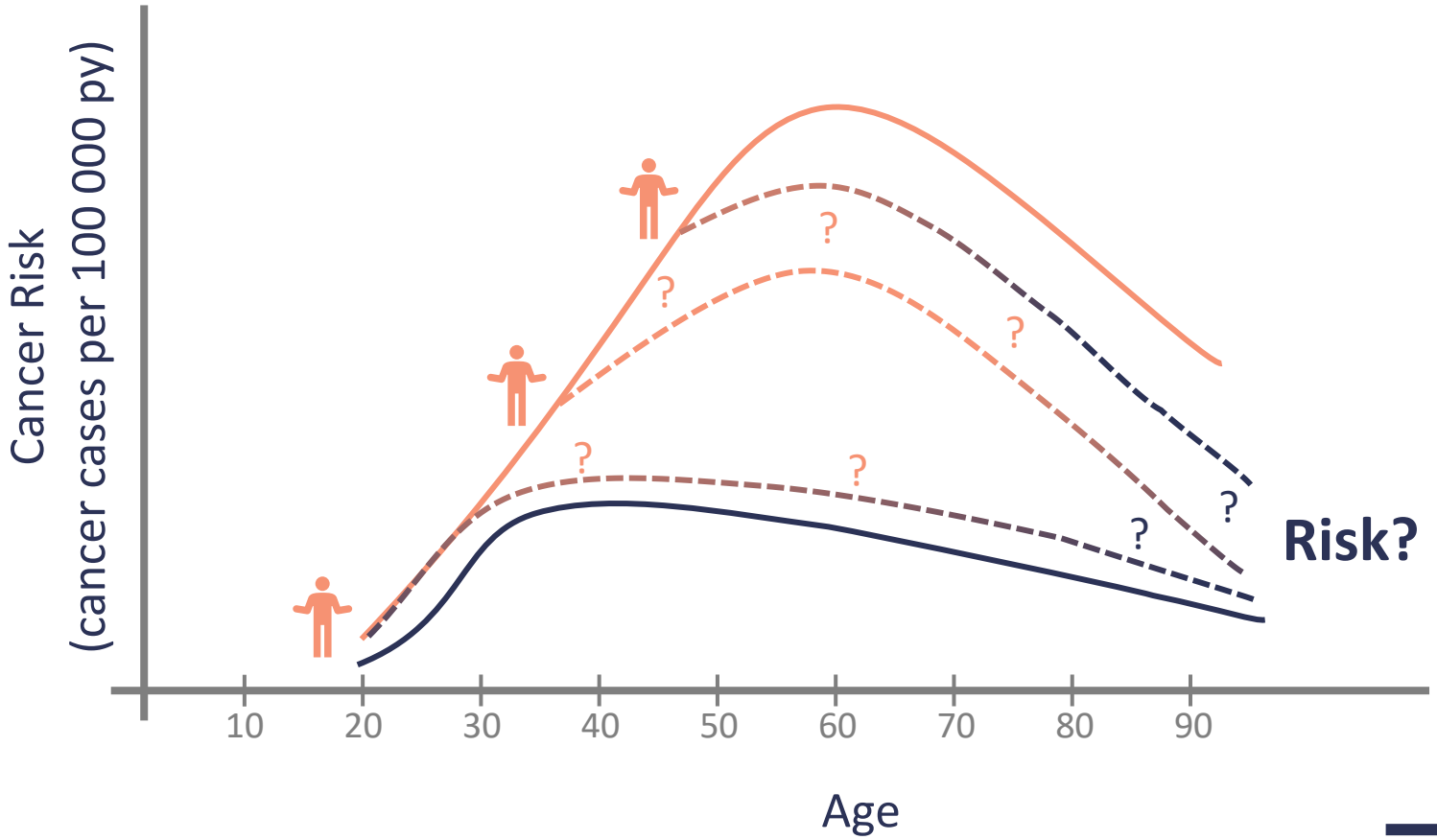


Figure: *D. Georges, IARC-WHO*
Data: *UN, International Migrant Stock 2020 + GLOBOCAN, 2022*

Risk


Cancer Risk
(cancer cases per 100 000 py)
10
20
30
40
50
60
70
80
90
Age
?
?
?
?
?
?
?
Risk?
CR in host country
CR in birth country
Hypothetical CR
CR = cancer risk

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Objective 1: Collect real-world data to quantify (cervical) cancer risk among migrants

Objective 2: Estimate the expected and preventable burden of (cervical) cancer cases among migrants.

Objective 3: Assess the resources needed to scale up (cervical) cancer elimination strategies for migrant populations.

What data will be collected?

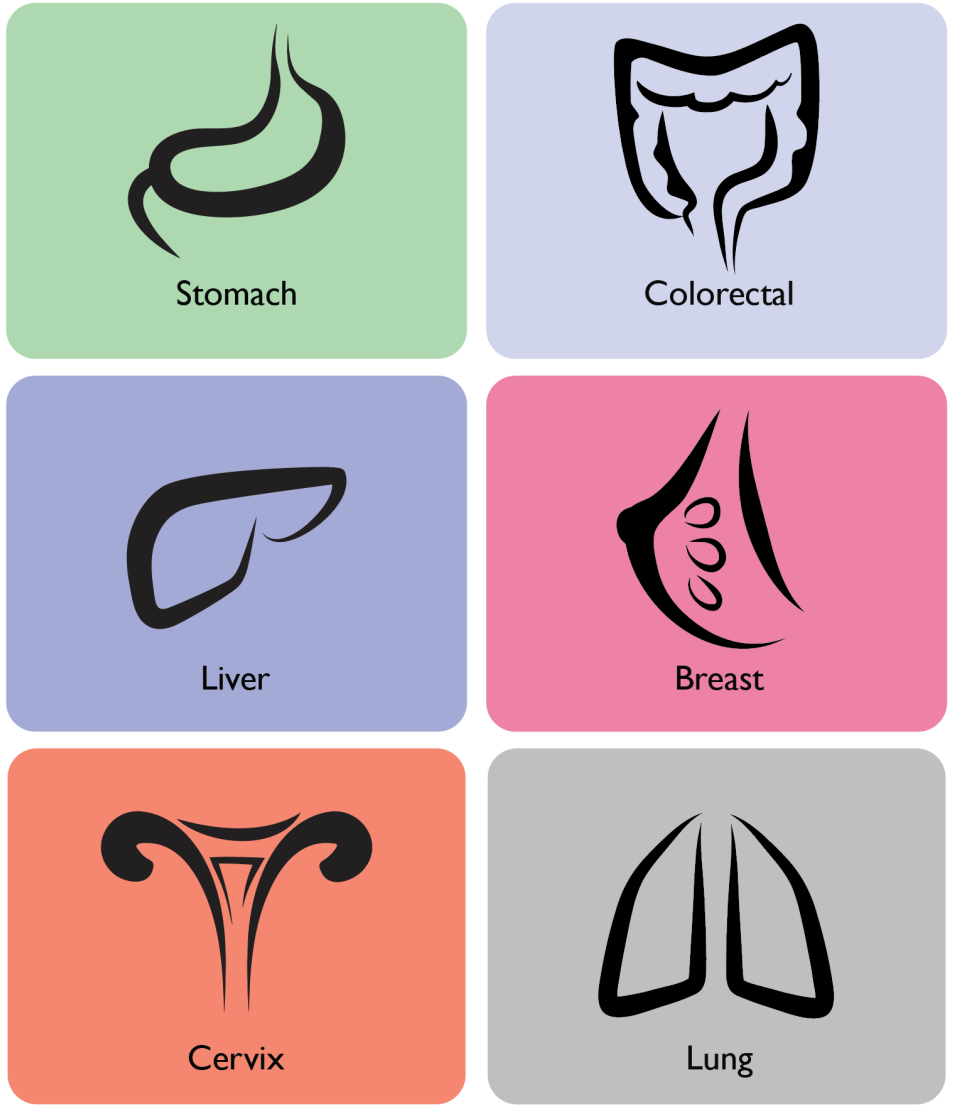
Cancer data stratified by birth country for:

- **Infection-related cancers**
  (cervical, liver, stomach cancer)
- **Screening detectable cancers**
  (cervical, colorectal, breast and lung cancer)

Different periods:

- 2013-2017 (CI5-XII)
- 2008-2012 (CI5-XI)
- 2003-2007 (CI5-X)

CI5 = Cancer Incidence in 5 continents, providing access to detailed information on the incidence of cancer recorded by population-based cancer registries. This data is collected in a standardized way every 5 years. IARC-WHO and IACR



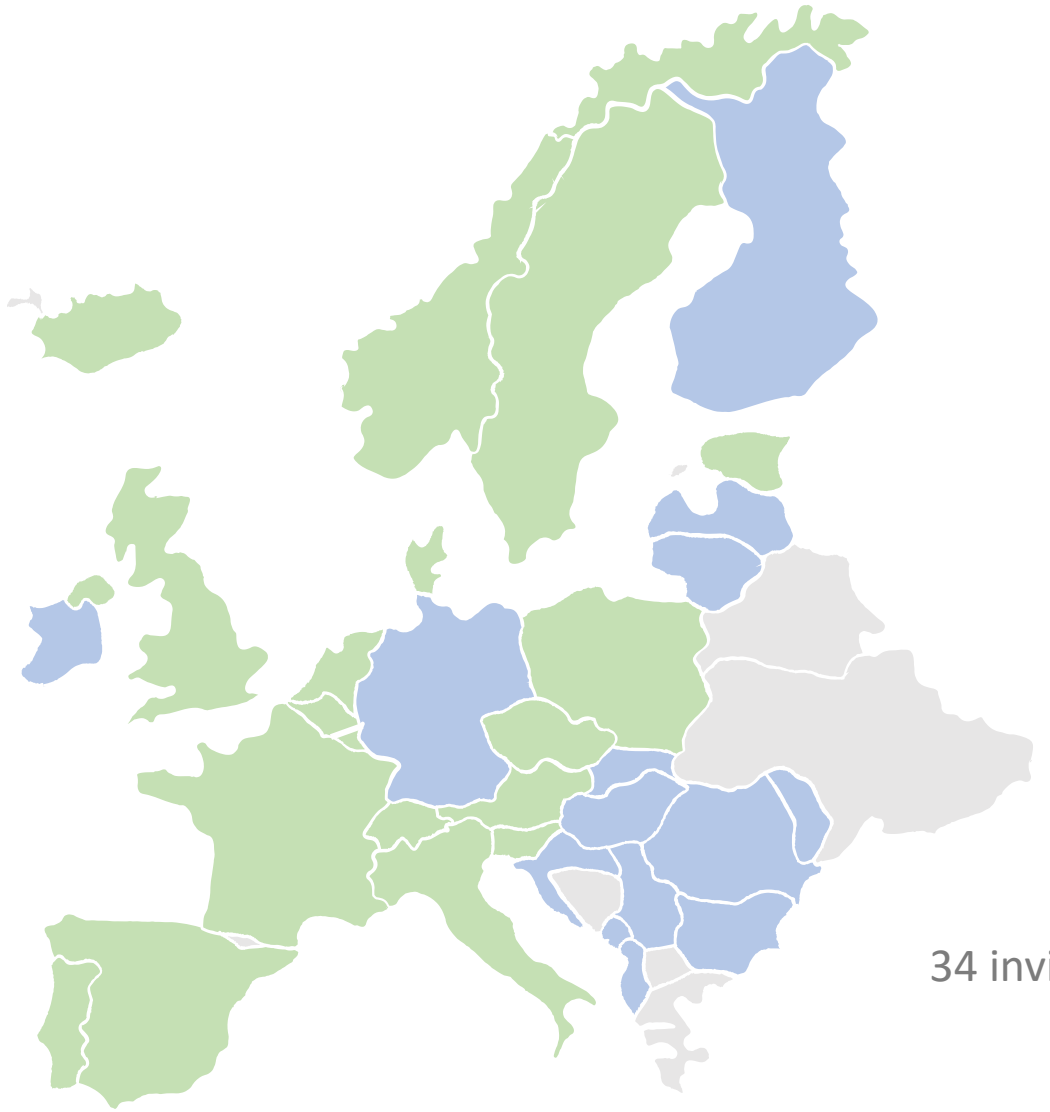
What is a ‘migrant’?

Birth-country of a person:

- ✓ Often routinely collected for administrative purposes
- ✓ Objective and an unchanging attribute
- ✓ Birth-country refers to first-generation migrant
- ✓ Birth-country as a proxy for ethnicity is widely used

AI generated figures

Where is data (potentially) available in the EU?



34 invited countries = 118 cancer registries
82% (28/34) countries responded
64% (76/118) registries responded
20 countries (potentially) participating
updated 07/02/2025

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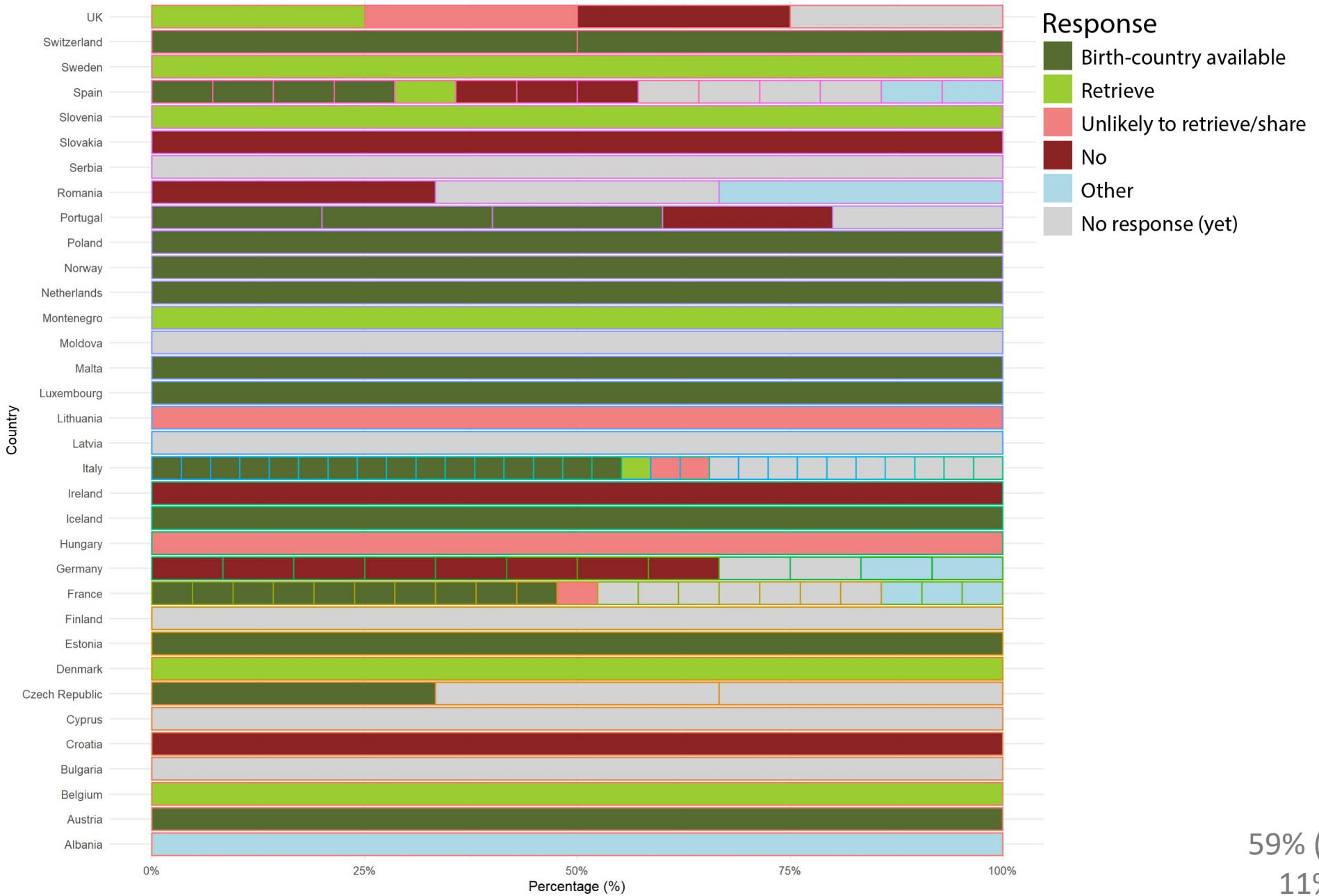
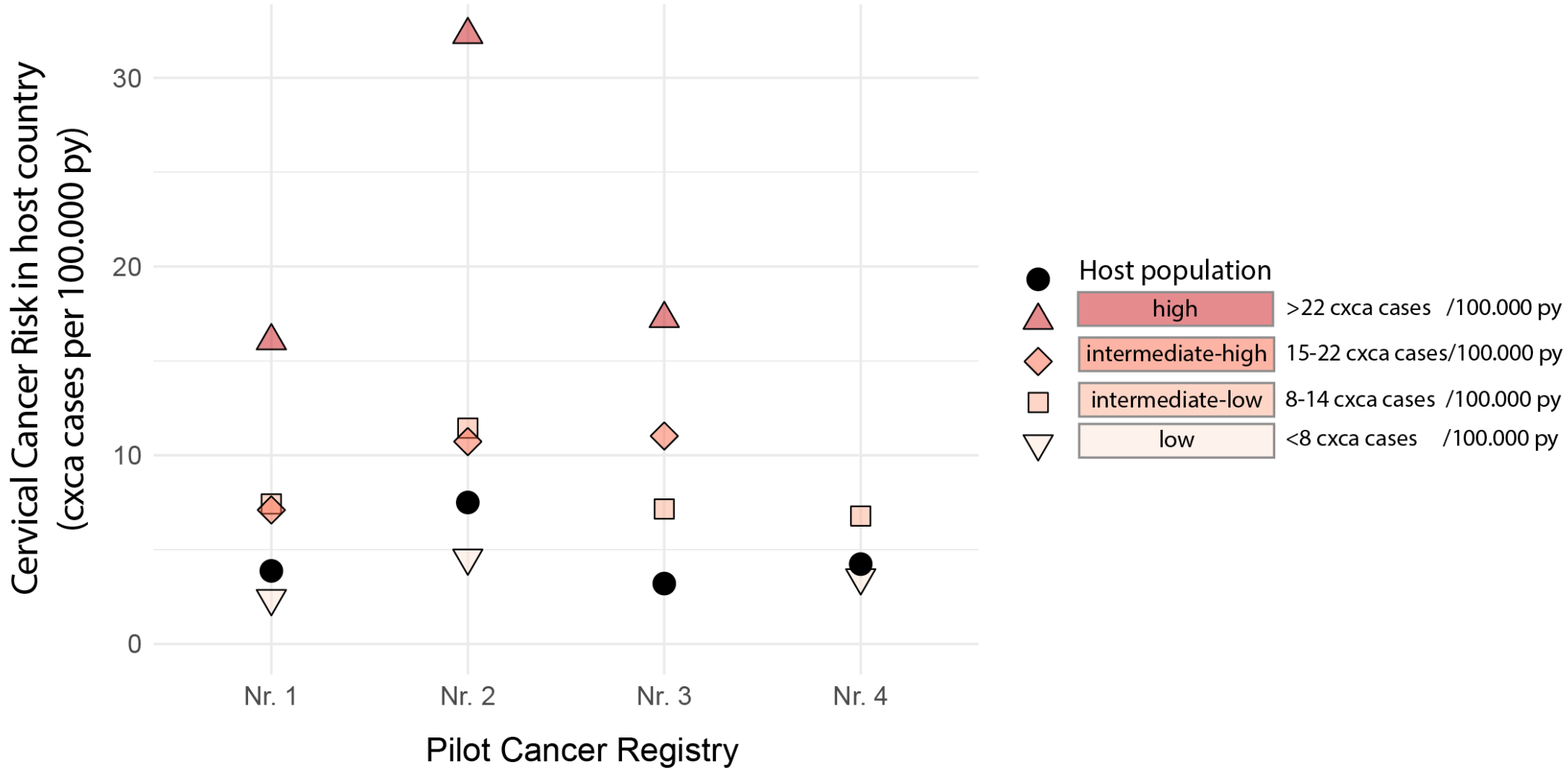
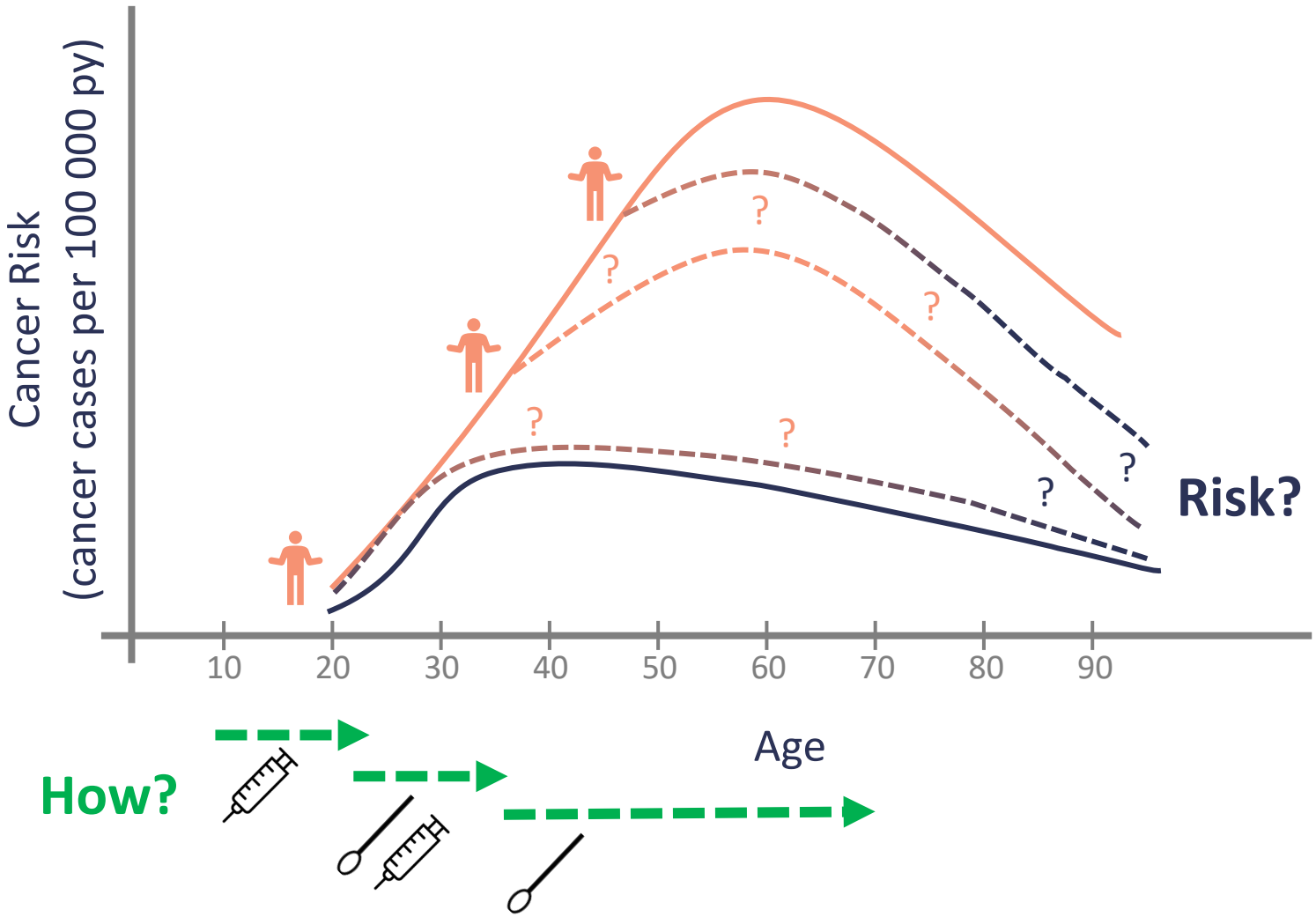


59% (44/76) birth-country available
11% (8/76) retrieve birth-country
updated 07/02/2025

Sneak peek


Cervical Cancer Risk in host country
(cxca cases per 100.000 py)
30
20
10
0
Nr. 1
Nr. 2
Nr. 3
Nr. 4
Pilot Cancer Registry
Host population
high
>22 cxca cases /100.000 py
intermediate-high
15-22 cxca cases/100.000 py
intermediate-low
8-14 cxca cases /100.000 py
low
<8 cxca cases /100.000 py

How – When


Cancer Risk
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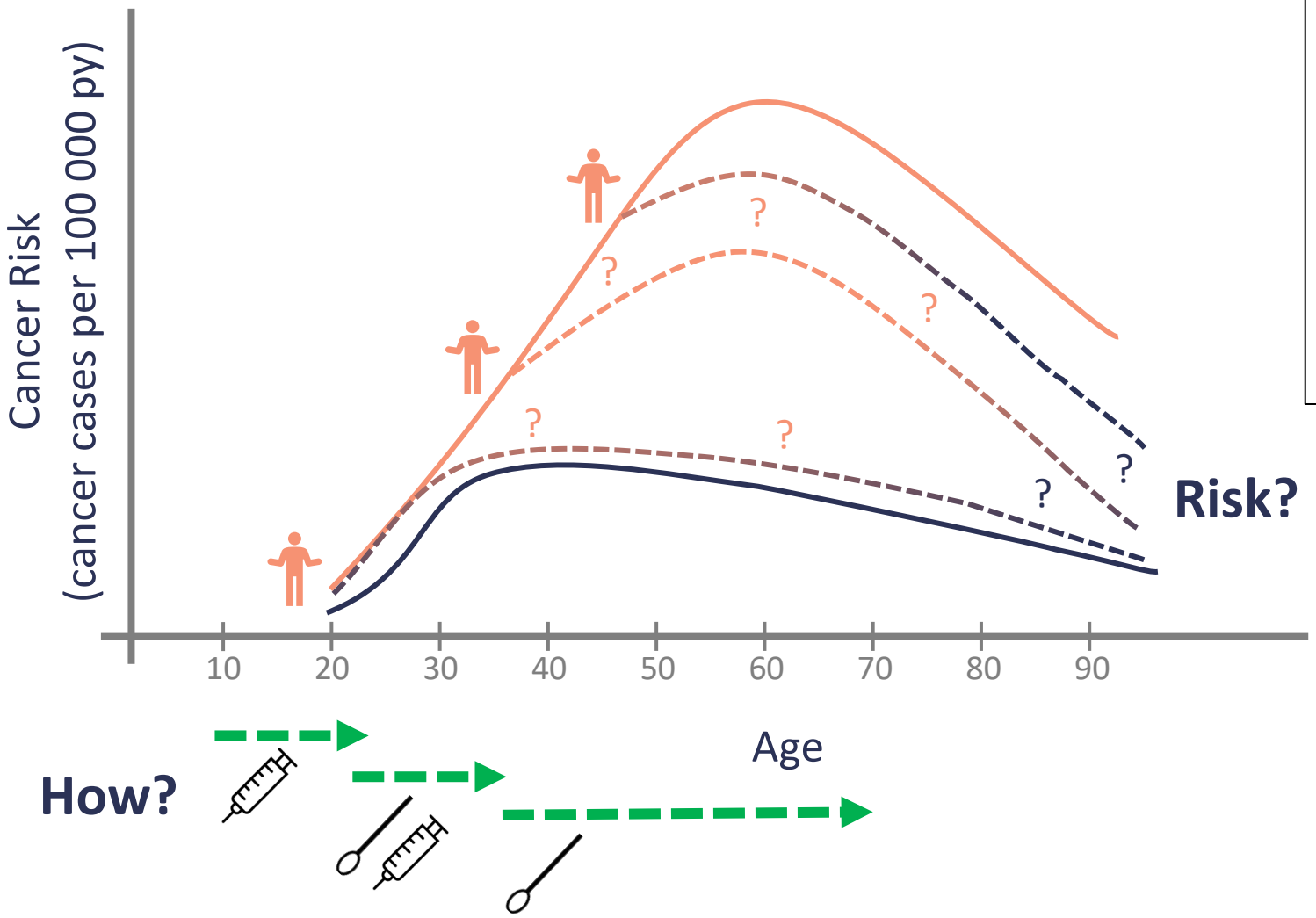
Age
Risk?
How?
CxCa screening
HPV vaccination
CR in host country
CR in birth country
Hypothetical CR
CR = cancer risk

How – When



When?

- Upon arrival e.g. during (basic) health checkup at refugee camps, asylum centers, GPs

- Population-level efforts
i.e. embedding additional efforts within existing national vaccination and cervical screening programs

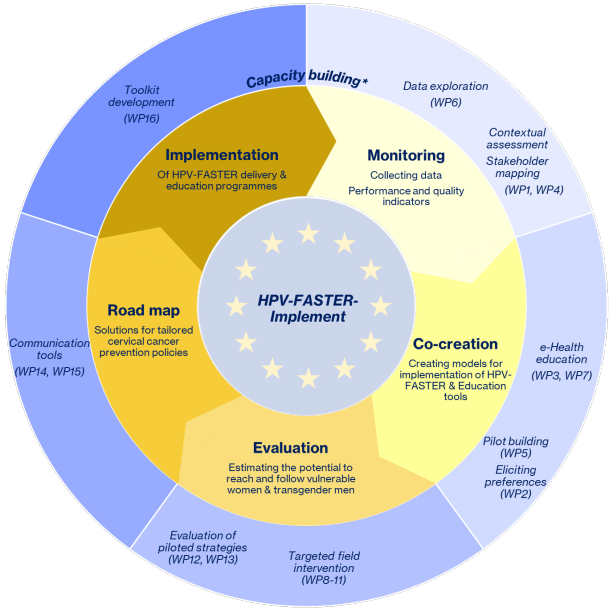
- Targeted and tailored interventions
e.g. through public health service to also reach labour and irregular migrants

CxCa screening
HPV vaccination
CR in host country
CR in birth country
Hypothetical CR
CR = cancer risk

How will we use this data?

- **Future:** What is the expected burden in the future?
- **Preventable:** What fraction of this burden can be prevented?
- **Resources:** What are expect costs (including direct and indirect cost)?

HPV-FASTER implementation

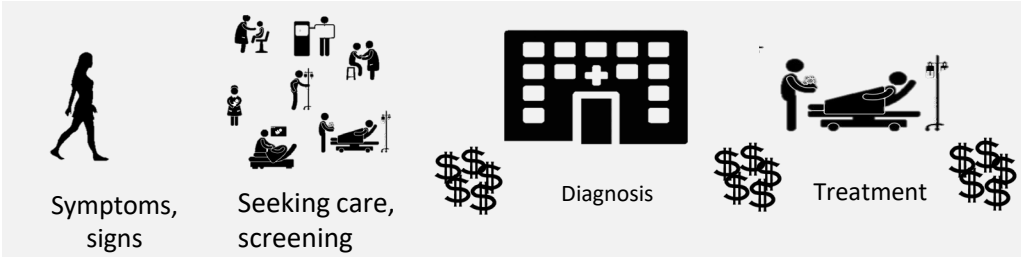


The HPV-FASTER-Implement project has received funding from the EU Horizon Europe research and innovation programme under Grant Agreement No 101155975

Example from Bhutan

Health & financial impact of the implemented vaccination
(averted burden over the lifetime of the first 8 vacc. cohorts)

Cervical cancers	506 cases
Cervical cancer deaths	271 cases
Direct medical costs	769,000 USD
Direct non-medical costs	847,000 USD
Income loss	275,000 USD
No. households with catastrophic costs	359 households



Results presented to Bhutan Ministry of Health, encouraging continued cervical cancer prevention

International Agency for Research on Cancer
World Health Organization

IARC HPV prevalence survey: Baussano et al., Ann Intern Med, 2020
IARC cost survey: Fuady et al. (manuscript in preparation)
Modelling study: Man et al. (manuscript in preparation)

Impact

- Improve the **health of migrants**
- Using the infrastructure and the lessons-learned in Europe, expand data collection to other regions in the world
- Characterize the **knowledge gaps** to increase awareness
- Inform **public health decision** making and stakeholder's **actions**
- Make the **data openly** accessible and help induce policy change
- Note: We must be aware that such data and findings can be interpreted very differently according to different set of values. Our purpose is to communicate the results of this work to promote equity-focused policy-making.

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Thank you for your attention!

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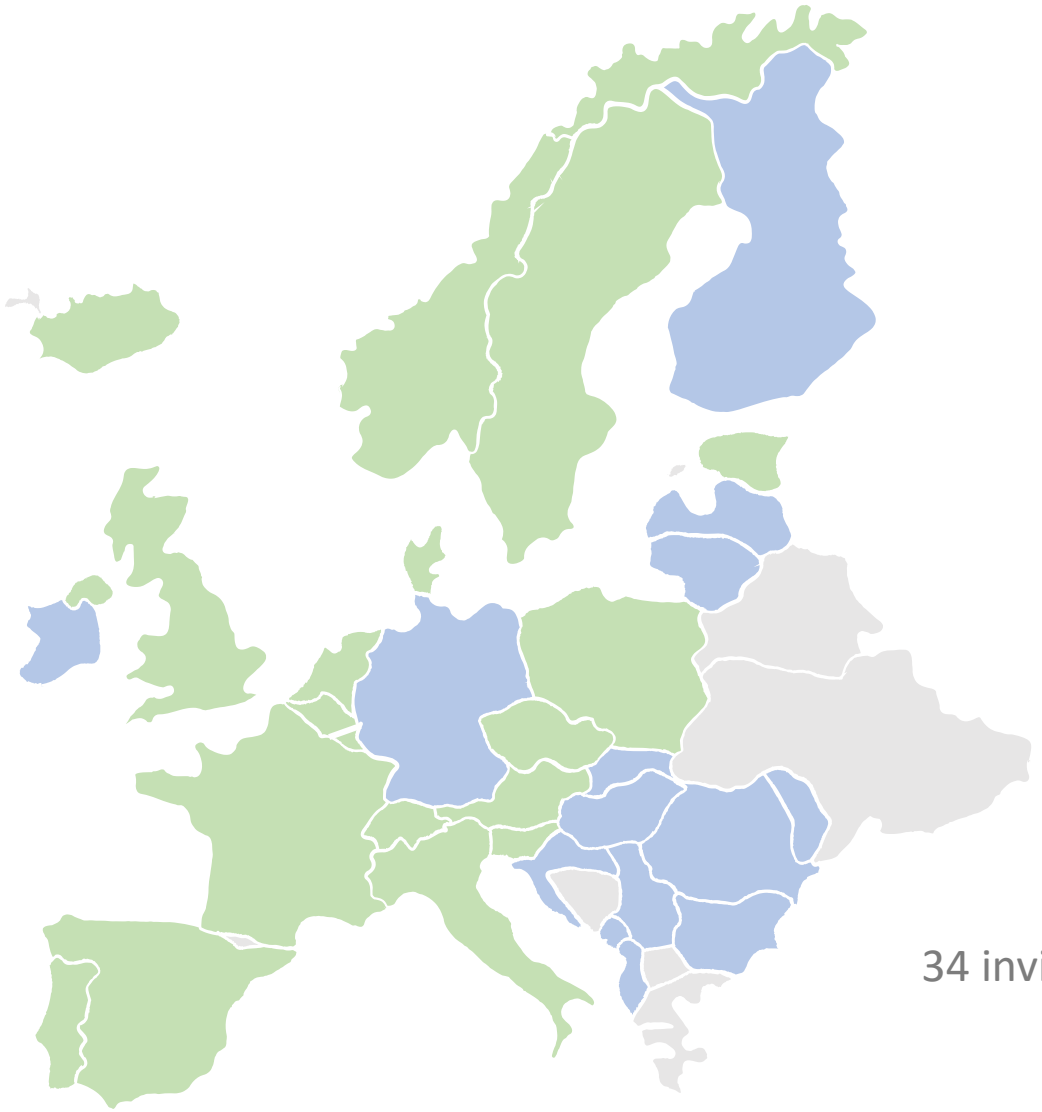
Dr. A Bordoni, Dr. L. Ortelli - Cancer Registry of canton Ticino, Switzerland
Dr. M.D. Chirlaque López - Cancer registry of Murcia, Spain
Dr. K. Van Herck, Dr. F. Verdoodt - Belgian Cancer Registry, Brussels, Belgium
Dr. O. Visser - Netherlands Comprehensive Cancer Organization (IKNL), Utrecht, The Netherlands
Dr. J. Didkowska and Dr. U Wojciechowska - Polish National Cancer Registry, Poland

Where is data (potentially) available in the EU?

Potential data

1. Austria
2. Belgium
3. Czech Republic
4. Denmark
5. Estonia
6. France
7. Iceland
8. Italy
9. Luxembourg
10. Malta
11. Montenegro
12. Netherlands
13. Norway
14. Poland
15. Portugal
16. Slovenia
17. Spain
18. Sweden
19. Switzerland
20. UK



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How will the data be collected?

Data is as the cancer registry

Step 1

Step 1. Cancer registries **collect** data on nr. of cancer cases stomach, liver, cervical, breast, colorectal, and lung cancer by birth country. Data on the population-at-risk by country of birth is also collected, in case such data is available at the registry.

Step 2

Step 2. Cancer registries enter the collected data in input excel-file. The excel-file has a pre-defined format to guide data entry.

Step 3

Step 3. The completed excel-file is imported in R (an open source software). By executing the provided R commands the excel-file will be processed generating the effect measures. Both the input and output file are only locally stored.

Anonymous data is shared

Step 4

Step 4. The output file generated by R can be shared with IARC-WHO/IACR by uploading it into RedCap. RedCap is a protected data sharing platform hosted by IARC-WHO.

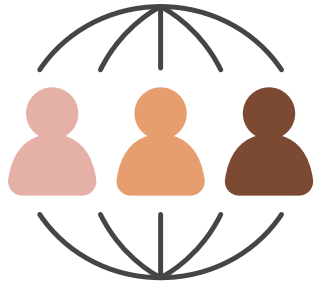
Cancer risk =

Numerator

- C16 - Stomach
- C22.0 - Liver
- C53 - Cervix uteri
- C50 - Breast
- C18-20: Colorectal
- C33-34: Lung

Denominator

- Population-at-risk
- All — C00-97/C44 - All cancers excl. non-melanoma skin cancer



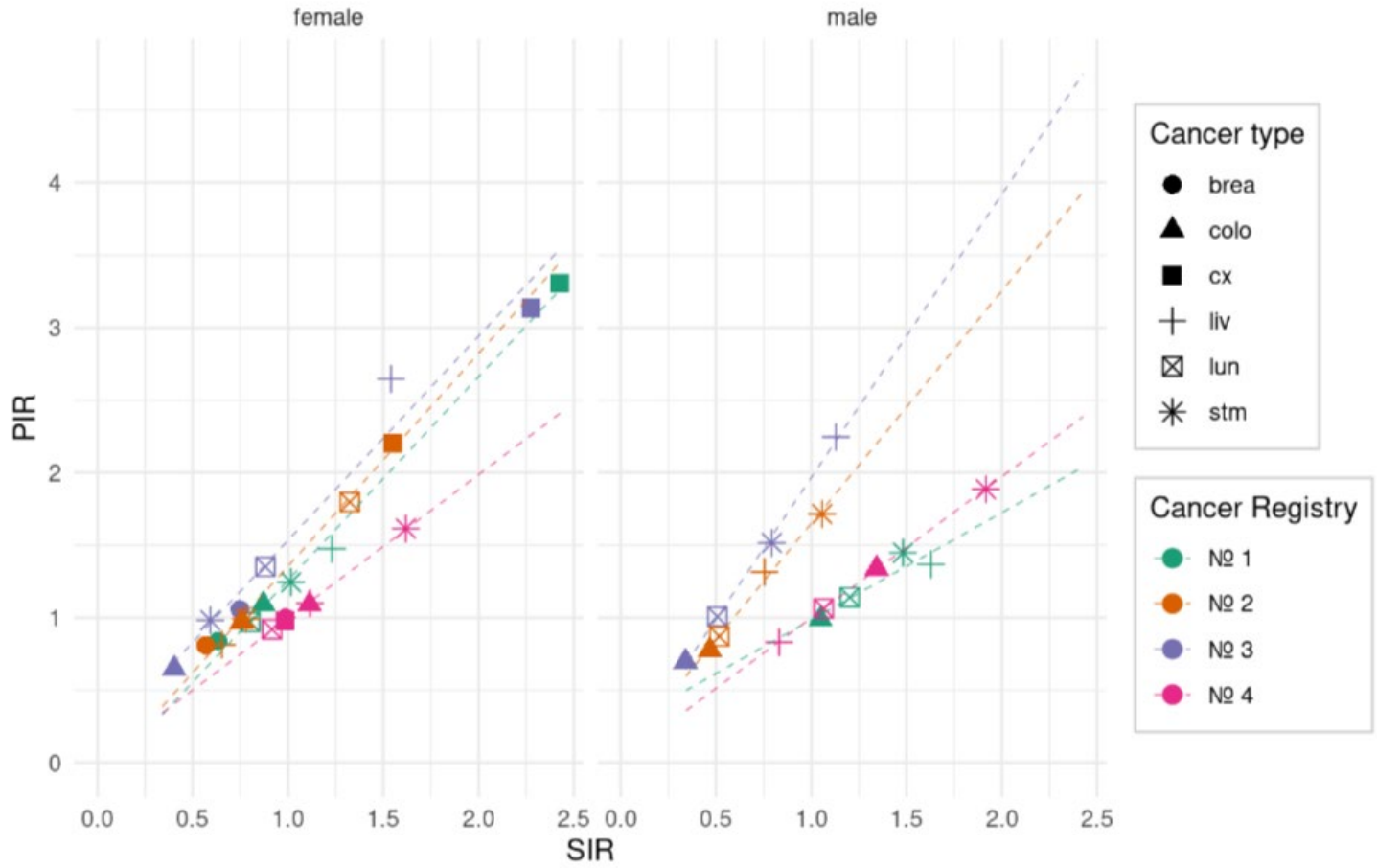
Stratified by birth country

PIR = Proportional incidence ratio

Source: P Boyle, D.M. Parkin, Ch11, IARC, 1995

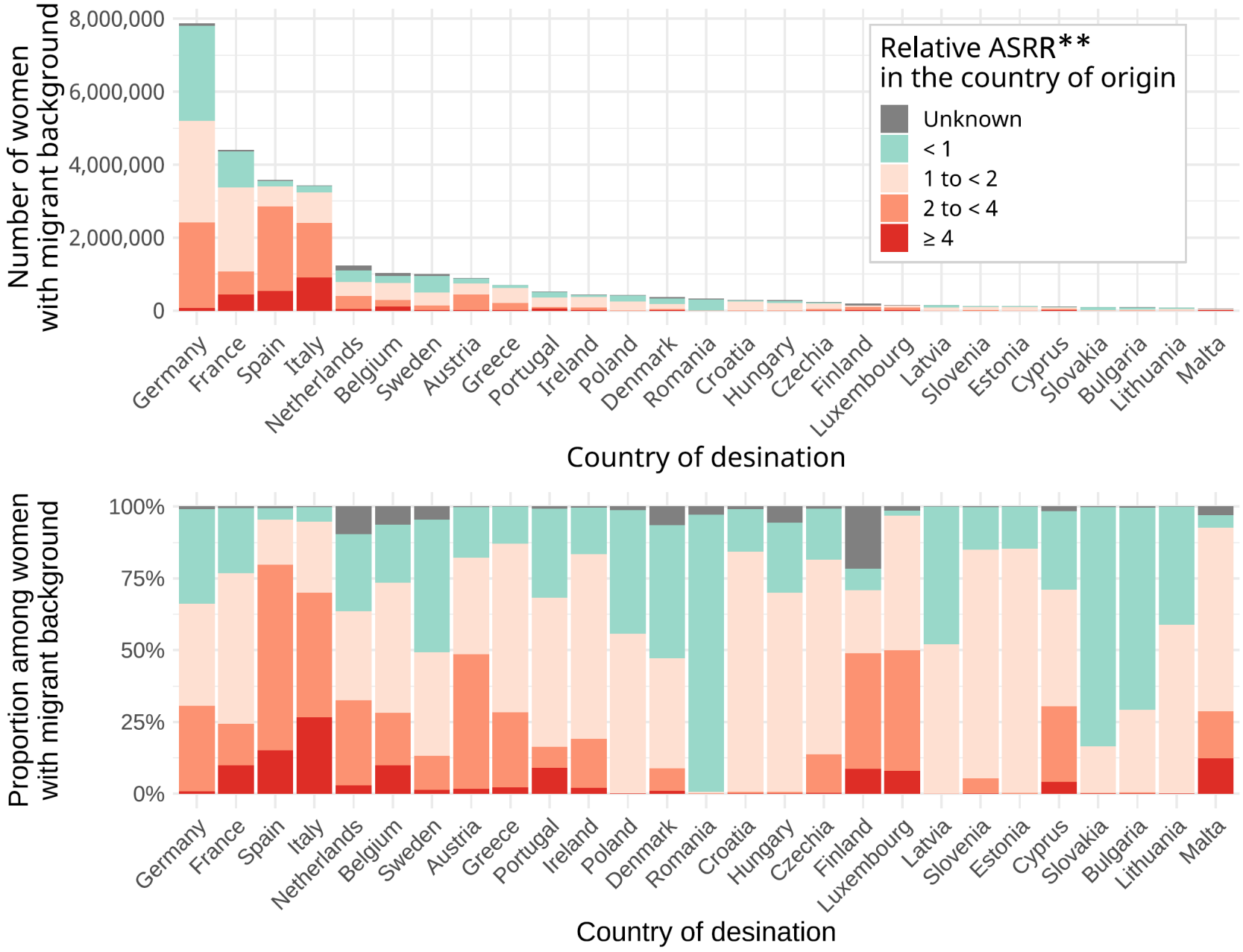
All

All cancers (C00-97/C44)



Population-at-risk

Cervical cancer



*Source = UN Migrant Stock 2020 + Globocan 2022

** Age standardized incidence rate ratio using the host population as a reference