



ELIMINATION OF CERVICAL CANCER AS A GLOBAL PUBLIC HEALTH PROBLEM

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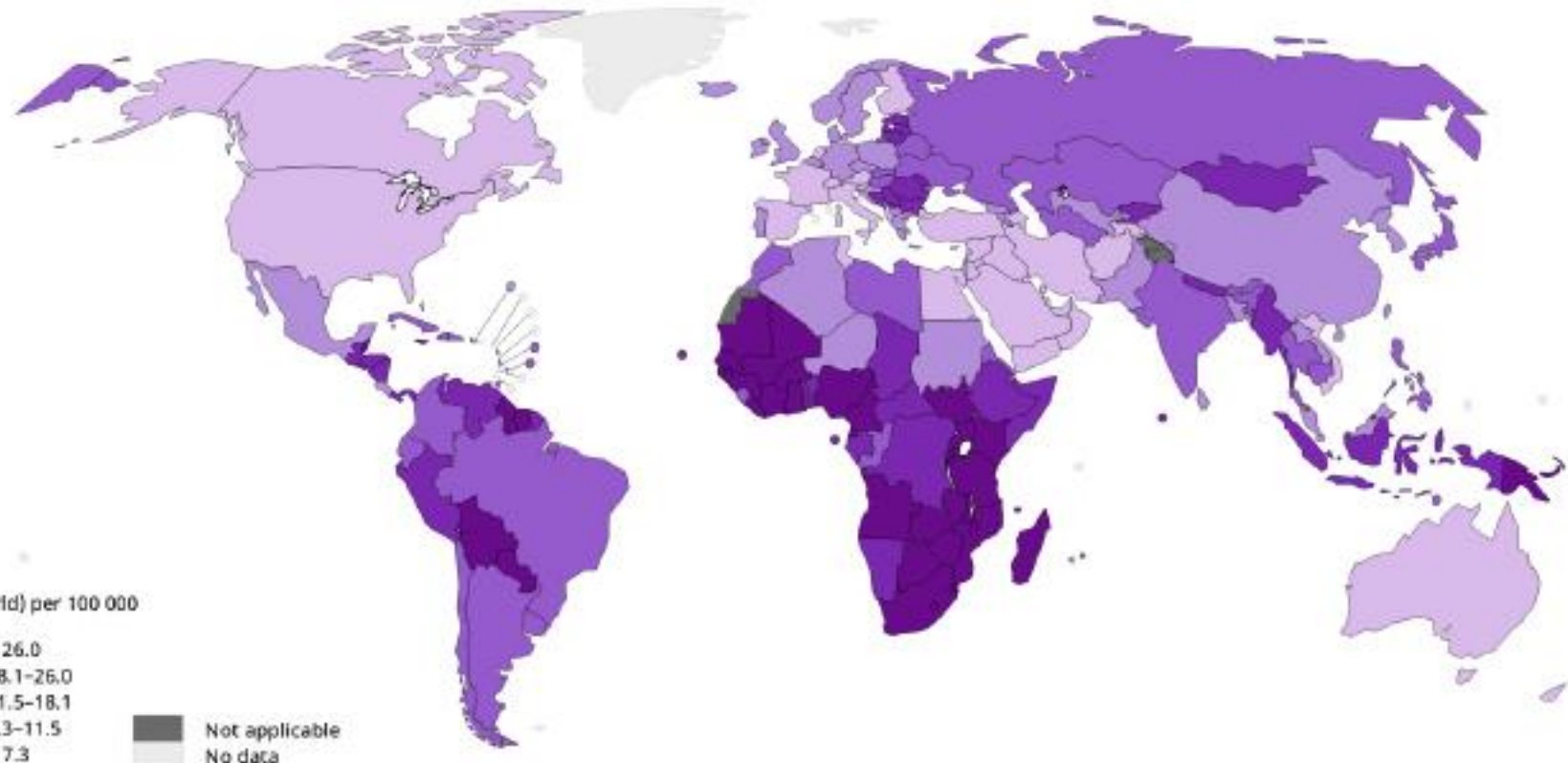
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World Health
Organization

GROWING INEQUITIES AND PUBLIC HEALTH THREAT OF CERVICAL CANCER (GLOBOCAN 2018)

Estimated age-standardized incidence rates (World) in 2018, cervix uteri, all ages



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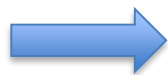
Data source: GLOBOCAN 2018
Graph production: IARC
(<http://gco.iarc.fr/today>)
World Health Organization

World Health Organization
International Agency for
Research on Cancer 2018

Worldwide in 2018:

570,000 new cases

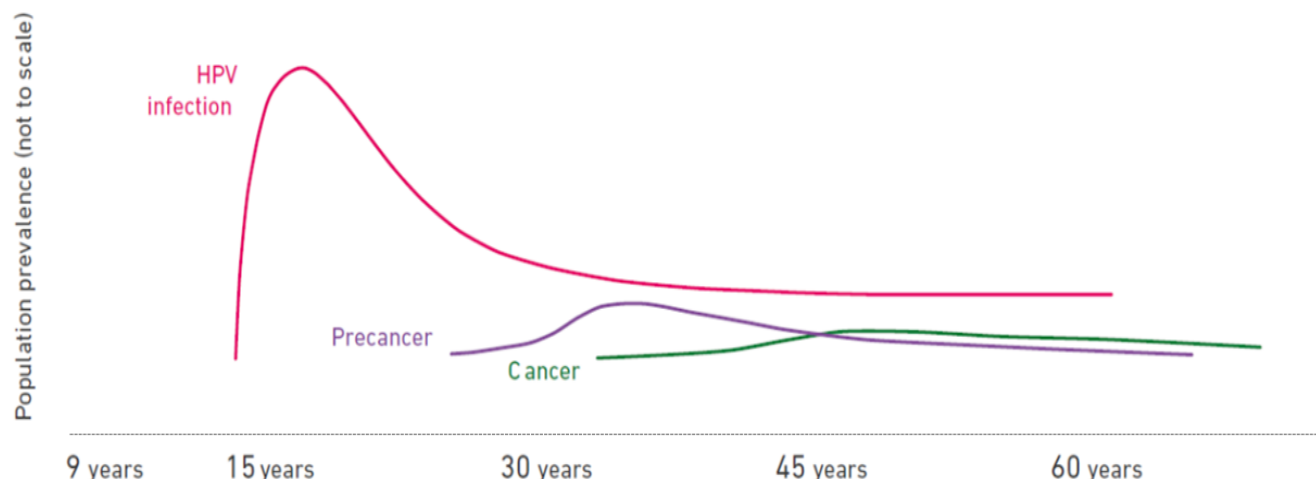
311,000 deaths



almost 460,000 deaths by 2040

World Health Organization

WHO LIFE COURSE APPROACH TO CERVICAL CANCER CONTROL



Primary Prevention

Girls 9-14 years

- HPV vaccination

Girls and boys, as appropriate

- Health information and warnings about tobacco use
- Sexuality education tailored to age & culture
- Condom promotion/provision for those engaged in sexual activity
- Male circumcision

Secondary Prevention

Women > 30 years of age

"Screen and treat" – single visit approach

- Point-of-care rapid HPV testing for high risk HPV types
- Followed by immediate treatment
- On site treatment

Tertiary Prevention and Palliative Care

All women as needed at any age

- Treatment of invasive cancer:
 - Surgery
 - Radiotherapy
 - Chemotherapy
- Palliative care

MAY 2018: WHO DIRECTOR-GENERAL'S CALL TO ACTION TO ELIMINATE CERVICAL CANCER



International Agency for Research on Cancer



JAN 2019: 144TH WHO EXECUTIVE BOARD

More than 70 countries supported the decision for WHO secretariat to develop a:

Global Strategy towards the Elimination of Cervical Cancer



Photo credit: Chris Black

DEFINITIONS ON CONTROL, ELIMINATION AND ERADICATION

The Dahlem Workshop in March 1997 discussed the hierarchy of possible public health interventions with infectious diseases

(Dowdle WR. The principles of disease elimination and eradication. Bull World Health Organ 1998;76 Suppl 2:23-51998).

<http://www.who.int/bulletin/volumes/84/2/editorial10206html/en/>

CONTINUUM OF CONTROL, ELIMINATION AND ERADICATION

Reduction in incidence, prevalence, morbidity or mortality to a locally acceptable level

of disease: incidence reduced to zero in a defined geographical area

of infection: incidence of infection caused by a specific agent reduced to zero.

as a public health problem: achievement of clear and commonly agreed target definitions



Eradication

Permanent reduction to zero of the worldwide incidence of infection



Continued intervention measures needed

*Intervention measures
no longer needed*

ELIMINATION AS A PUBLIC HEALTH PROBLEM

Elimination as a public health problem is a term related to both infection and disease. **It is defined by achievement of measurable global targets set by WHO in relation to a specific disease.** When reached, continued actions are required to maintain the targets and/or to advance the interruption of transmission. The process of documenting elimination as a public health problem is called validation.

http://www.who.int/neglected_diseases/resources/NTD_Generic_Framework_2015.pdf

KEY QUESTIONS THAT MUST BE ADDRESSED

What will the cervical cancer threshold be to achieve elimination as a public health problem?

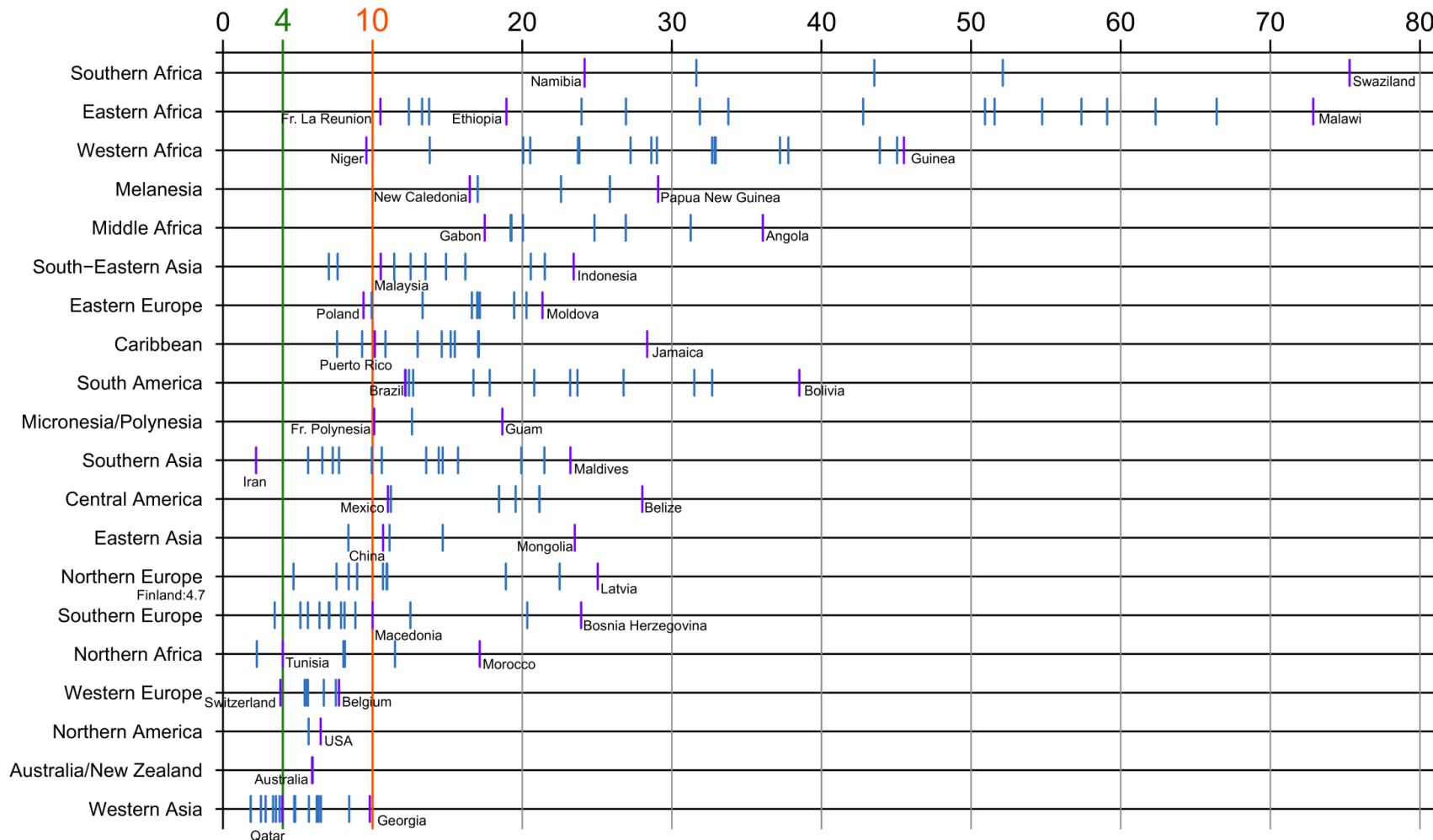
**What combination of screening and vaccination strategies can lead to elimination?
(for different thresholds)**

When could elimination be reached, for different strategies and countries?

What is the most efficient/cost-effective strategy to reach elimination?

VARIABILITY IN CERVICAL CANCER INCIDENCE RATES BY WORLD REGION

Age-standardized (W) rate per 100000



SYSTEMATIC COMPARATIVE MODELING APPROACH

- Model Selection
 - Dynamic model
 - Model includes vaccination & screening
 - Independent model that has been peer reviewed/published



- Policy 1 Model
 - Lead: Karen Canfell
 - Team: Kate Simms, Adam Keane, Megan Smith
 - Institution: Cancer Council NSW, Australia
- Harvard Model
 - Lead: Jane Kim
 - Team: Emily Burger, Stephen Sy, Catherine Regan
 - Institution: Harvard, USA
- HPV-ADVISE Model
 - Lead: Marc Brisson
 - Team: Mélanie Drolet, JF Laprise, Dave Martin, Élodie Bénard, Guillaume Gingras, Iacopo Baussano, Marie-Claude Boily, Mark Jit
 - Institution: U Laval, Canada; Imperial College, UK; LSHTM, UK; IARC, France
- Spectrum Model
 - Leads: Chaitra Gopalappa & Carel Pretorius
 - Institution: U Massachusetts & Avenir Health, USA

SYSTEMATIC COMPARATIVE MODELING APPROACH IN 2018

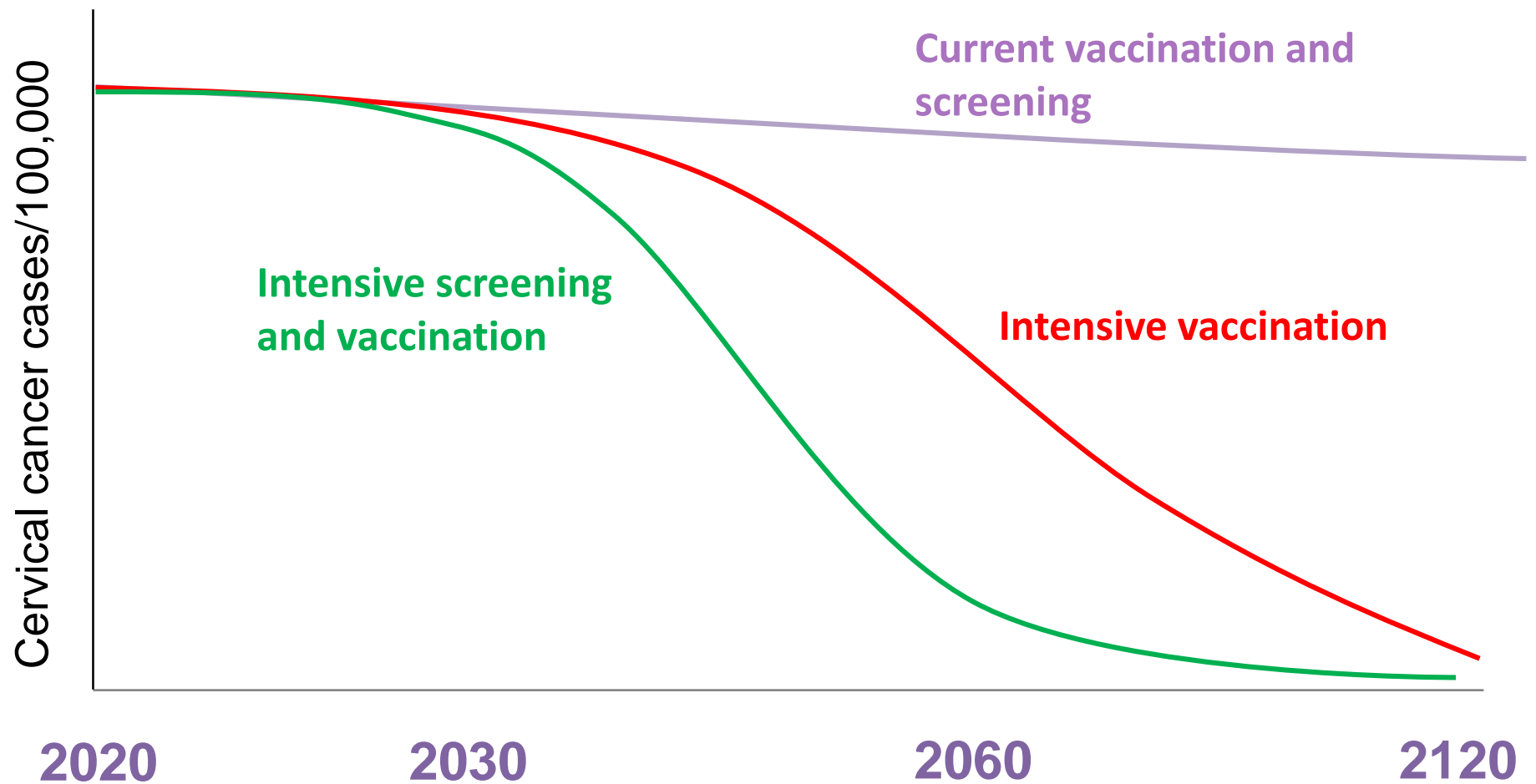
- Model Selection
 - Dynamic model
 - Model includes vaccination & screening
 - Independent model that has been peer reviewed/published
- Step 1: Understand Model differences/ Potential for elimination
 - Use the selected models
 - Examine 14 simplified screening & vaccination scenarios
 - Few countries
 - Compare model structures & results
- Step 2: Examine key questions for a selected set of countries
 - Use the selected models
 - Examine 26 realistic screening & vaccination scenarios
 - Wider range of countries
- Step 3: Estimate global model predictions
 - Use 3 of 4 selected models
 - Examine 3 screening & vaccination scenarios
 - Estimate global predictions



VACCINATION AND SCREENING SCENARIOS

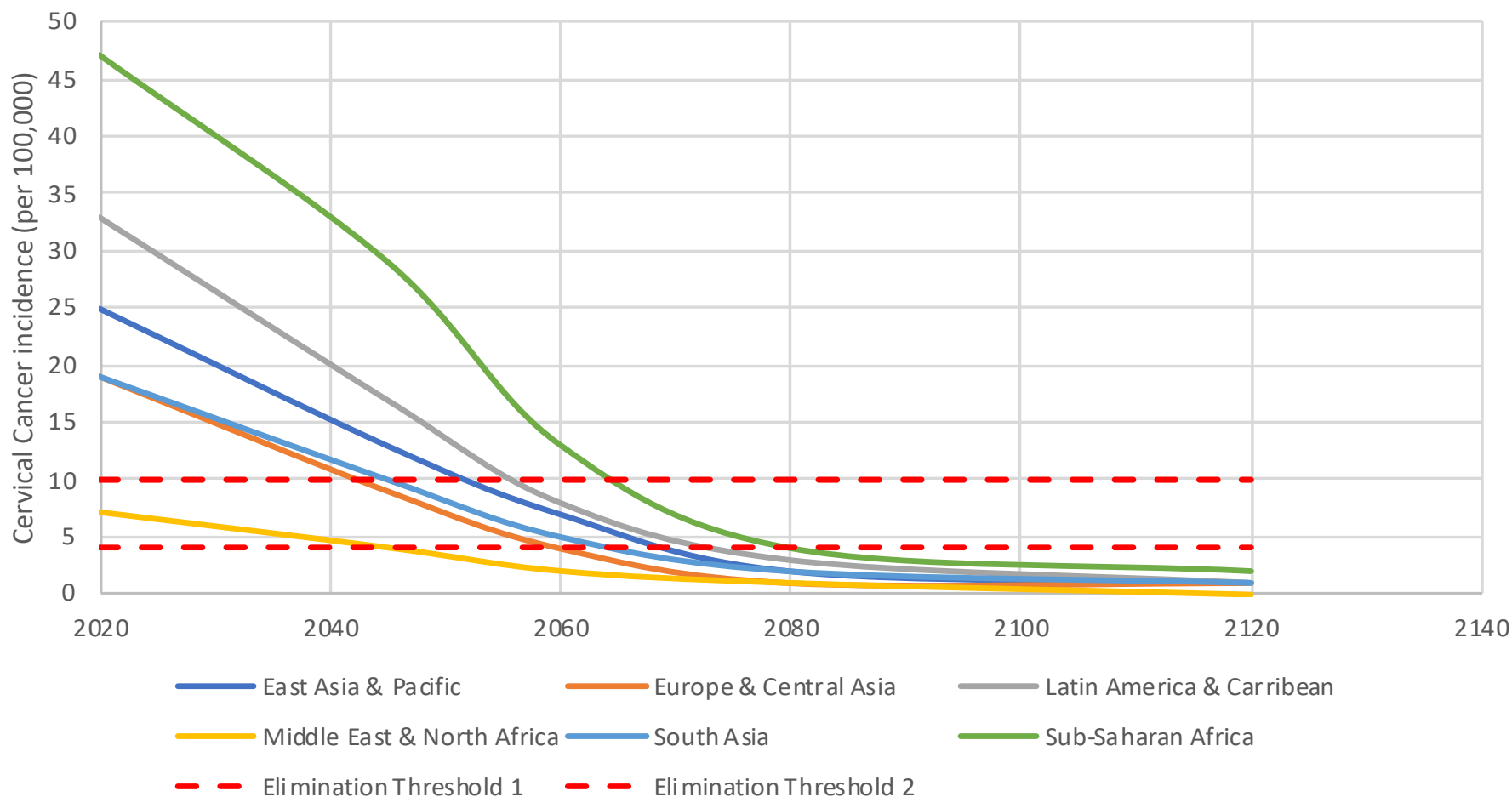
- S1 - Scenario 1:
 - Girls-only vaccination (90% coverage, 9-14 yr old)
 - No change in Screening
- S2 - Scenario 2:
 - Girls-only vaccination (90% coverage, 9-14 yr old)
 - 1 lifetime screen at 35 yrs old
 - High Screening ramp-up (45%, 70%, 90% in 2023, 2030, 2045, respectively)
- S3 - Scenario 3:
 - Girls-only vaccination (90% coverage, 9-14 yr old)
 - 2 lifetime screens at 35 and 45 yrs old
 - High Screening ramp-up (45%, 70%, 90% in 2023, 2030, 2045, respectively)
- All scenarios:
 - Screening: HPV testing, 100% treatment efficacy, 10% Lost to follow-up
 - Vaccine: Lifelong duration, 100% efficacy, HPV16/18/31/33/45/52/58

CERVICAL CANCER ELIMINATION: CONCEPTUAL FRAMEWORK



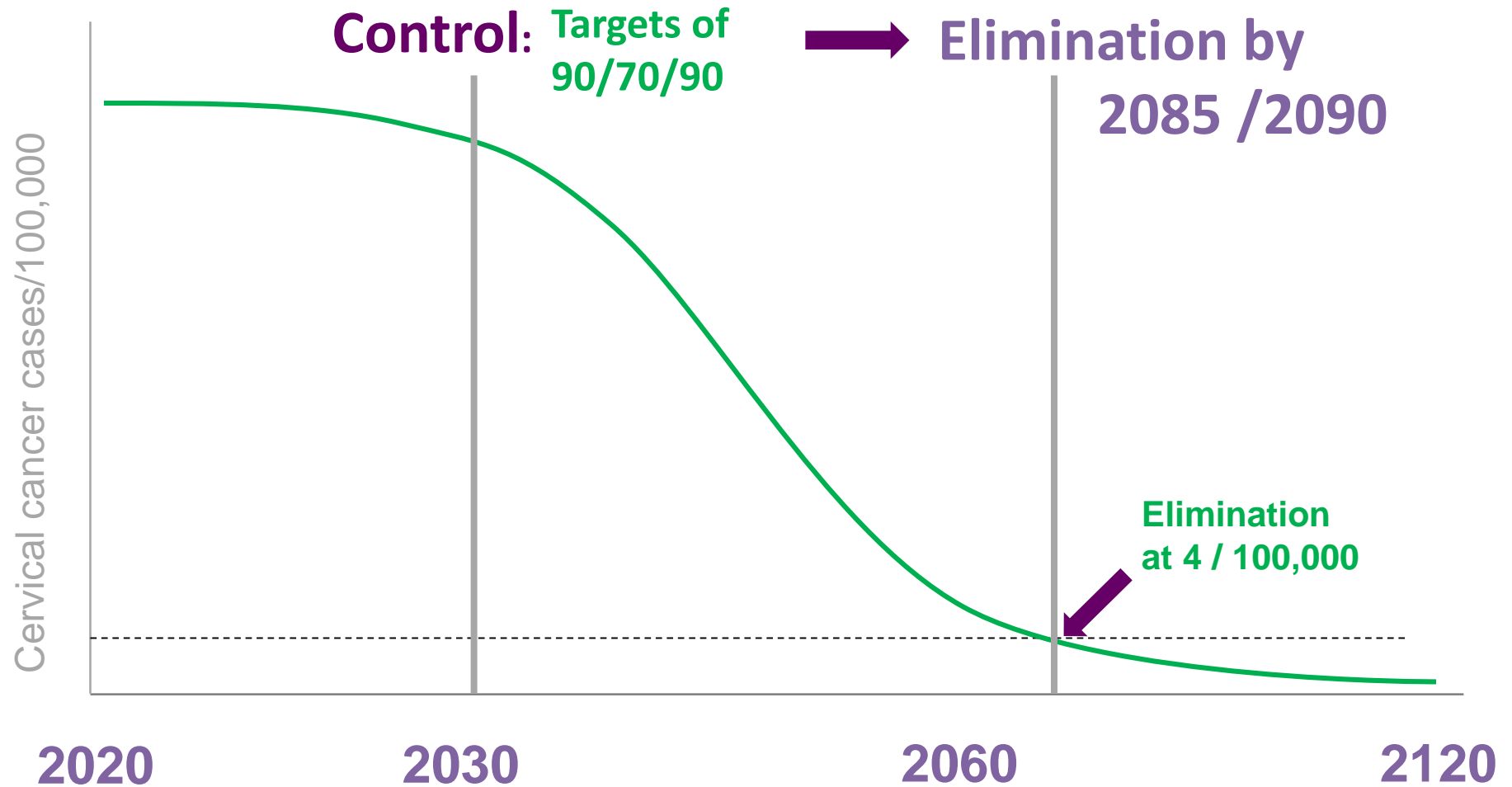
PATHWAYS TOWARDS ELIMINATION WITH GIRLS VACCINATION AND TWICE LIFE TIME HPV TESTING

Girl vaccination and 2-life time screening (S3)



Source: M. Brisson, J. Kim & K. Canfell et al. In publication

INCREASING ACCESS TO INTERVENTIONS 2030 VACCINATION, SCREENING & TREATMENT COVERAGE TARGETS



THE ARCHITECTURE TO ELIMINATE CERVICAL CANCER:

VISION: A world without cervical cancer

THRESHOLD: All countries to reach < 4 cases 100,000 women-years

2030 CONTROL TARGETS

90%

of girls fully vaccinated
with HPV vaccine by 15
years of age

70%

of women screened with an
high precision test at 35
and 45 years of age

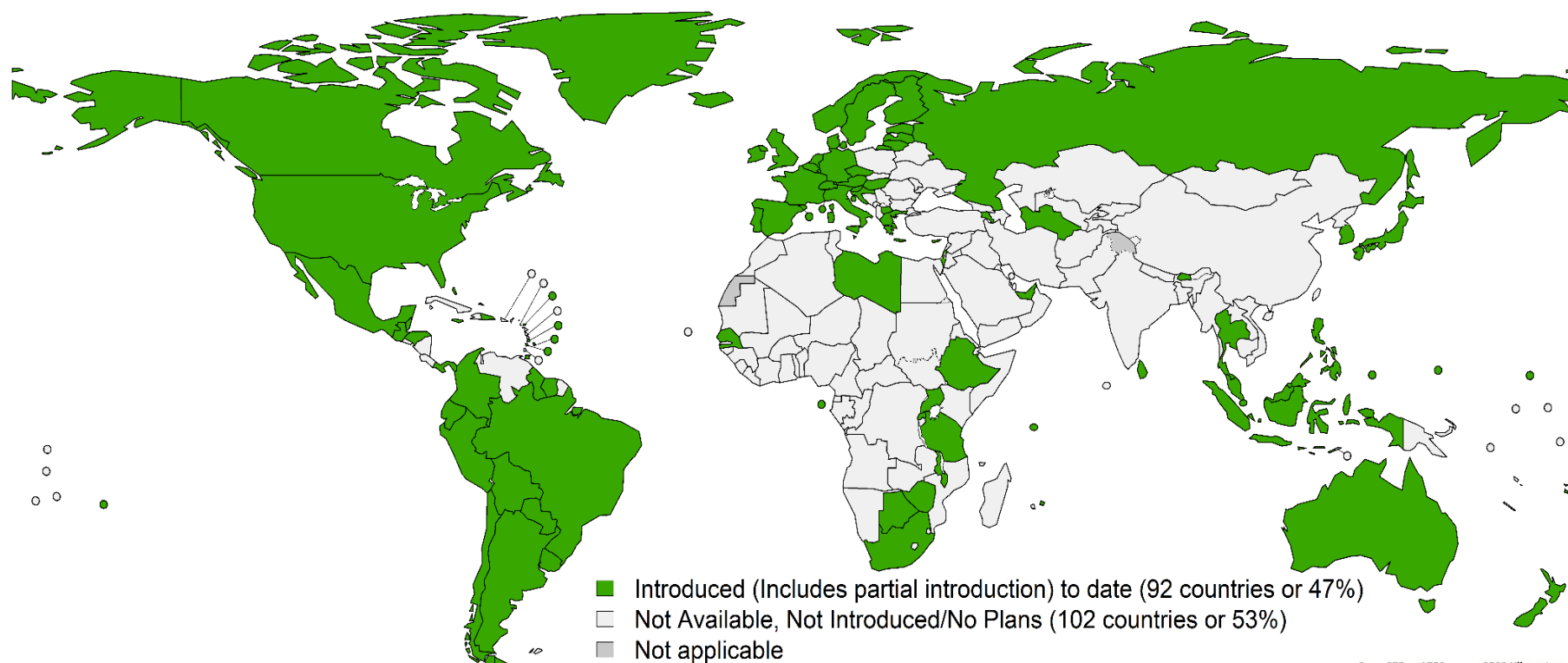
90%

of women identified with
cervical disease receive
treatment and care

SDG 2030: Target 3.4 – 30% reduction in mortality from cervical cancer

The 2030 targets and elimination threshold are subject to revision depending on the outcomes of the modeling and the WHO approval process

92 Countries included HPV vaccine in the national immunization programme Feb 2019



0 875 1750 3500 Kilometers



Date of slide: 2019-02-15

Map production: Immunization, Vaccines and Biologicals (IVB), World Health Organization (WHO)

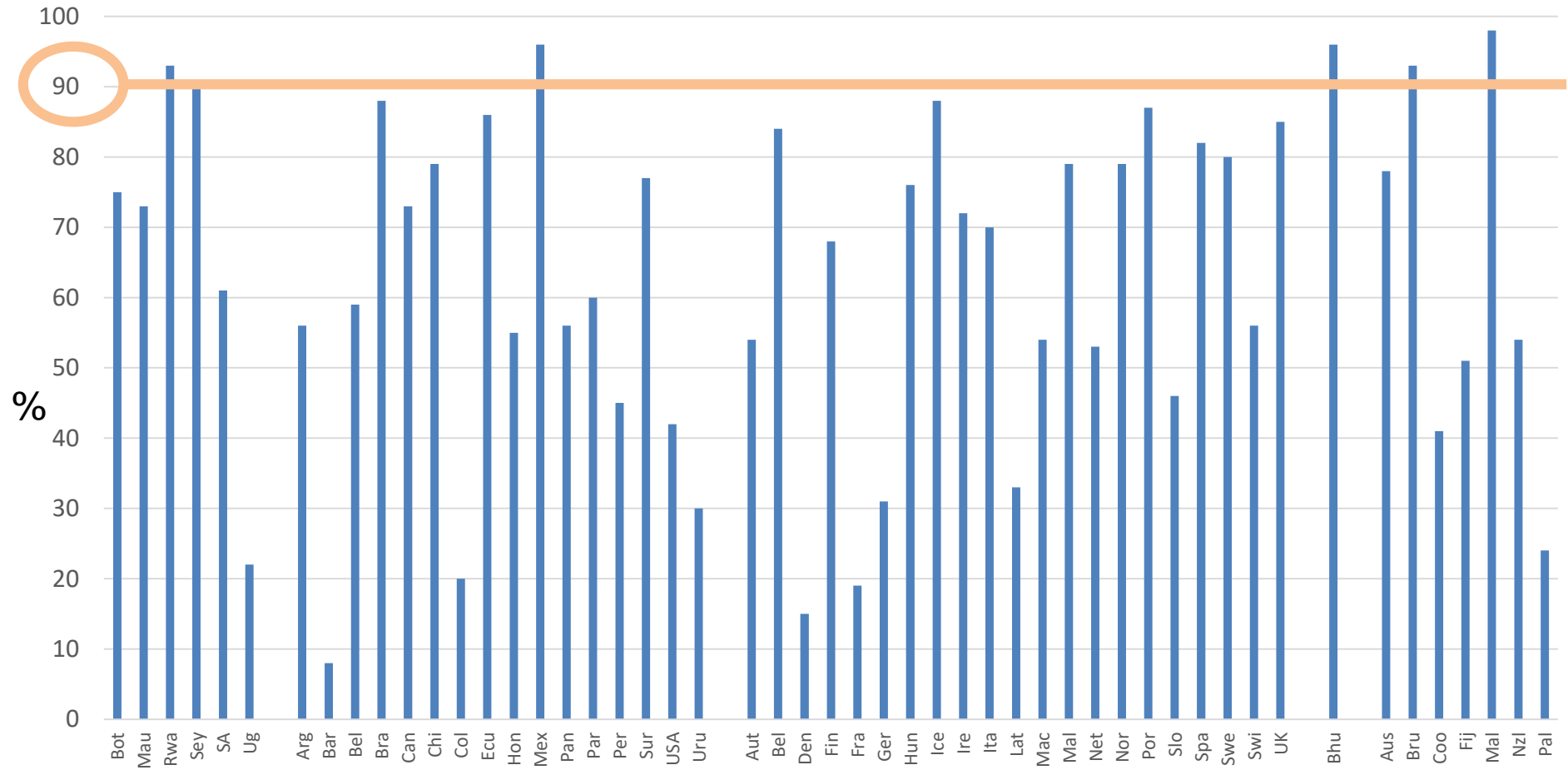
Data source: IVB database as at 14th February 2019

Disclaimer:

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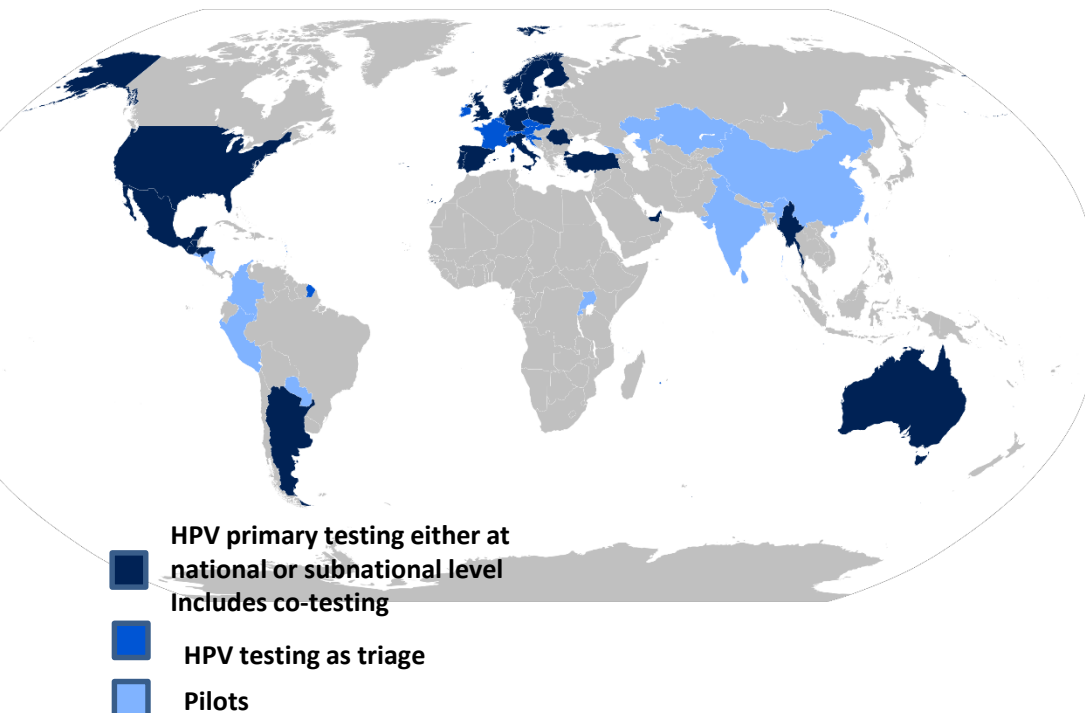
Reported HPV vaccine coverage of various ages, 2014-2016

90% coverage is achievable, but challenging for most countries



Countries Introducing Screening with HPV Testing and VIA Testing

Global Progress in **HPV DNA** Testing for Cervical Cancer Screening Status: June 2019



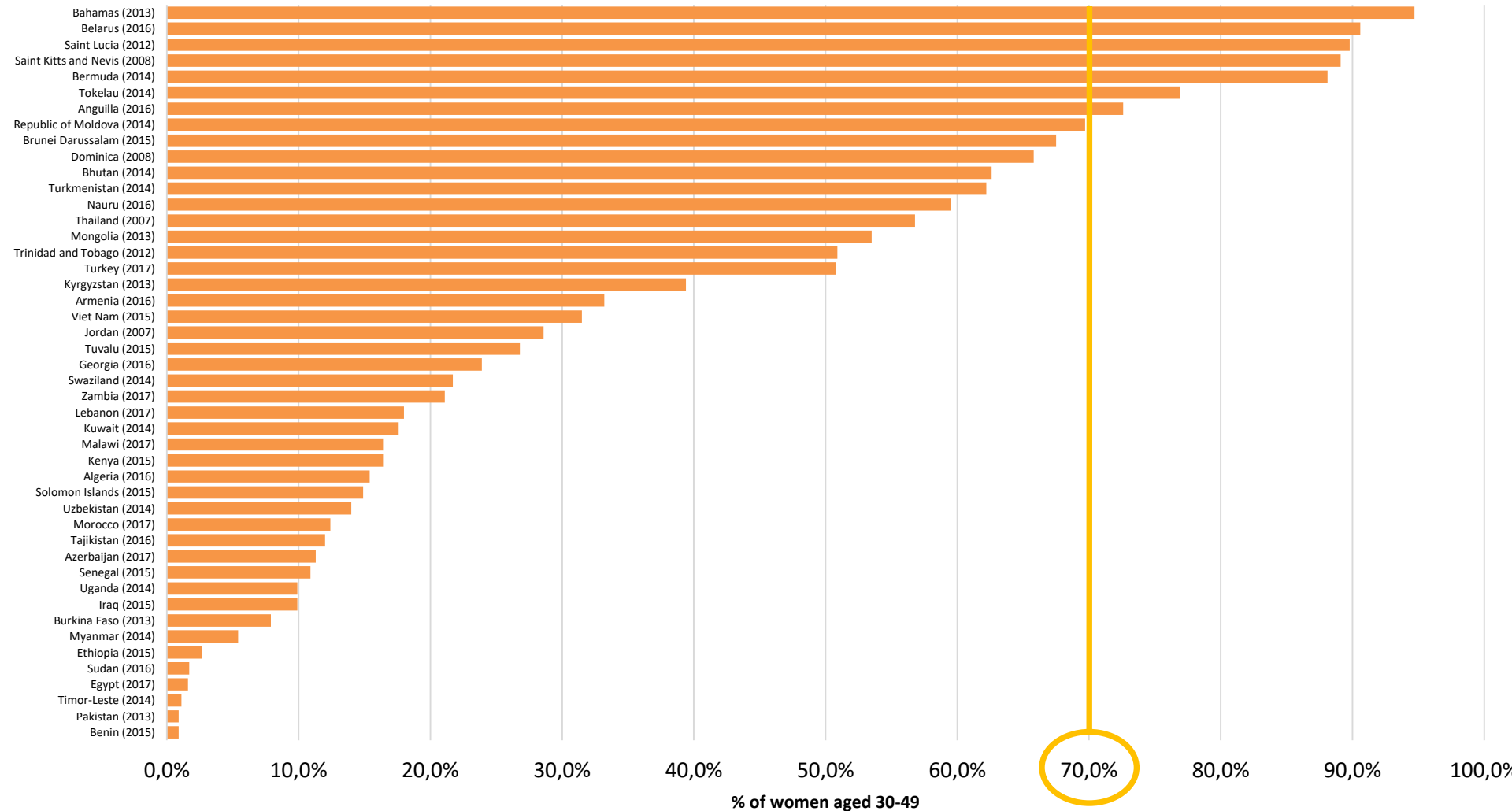
Global Progress in **Visual Inspection** (VIA) for Cervical Cancer Screening Status: June 2019



** Work in progress, some geographical regions not fully updated

Data sources: Cervical Cancer Action, HPV Information Centre, Chrysostomou 2018, Personal communications

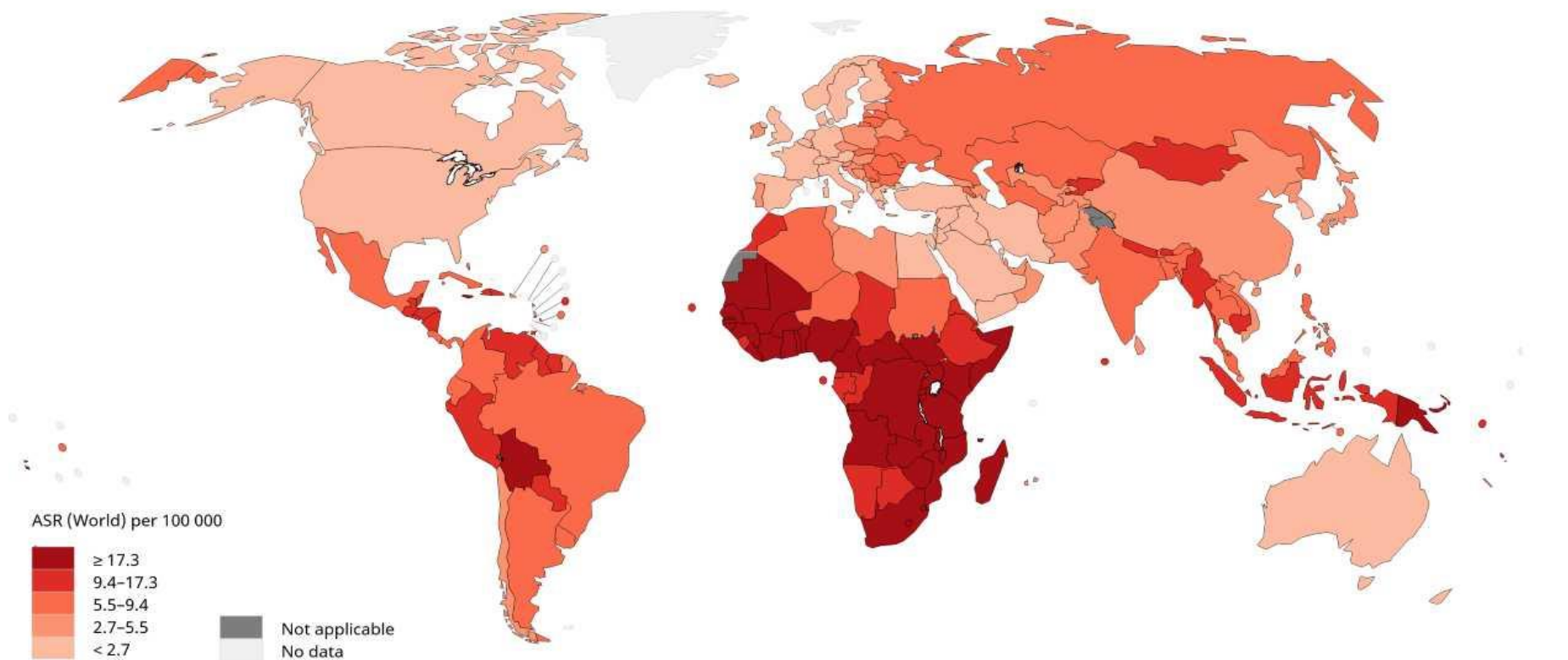
Cervical cancer screening: proportion of women between 30 – 49 screened for cervical cancer at least once



Source: WHO STEPS

Estimated age-standardized mortality rates

Estimated age-standardized mortality rates (World) in 2018, cervix uteri, all ages



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Graph production: IARC
(<http://gco.iarc.fr/today>)
World Health Organization

Strategy towards the elimination of cervical cancer as a global public health problem: key outputs

1

Guiding principles: life course and public health approach, social justice and equity, integrated people-centered health services

2

Increased
coverage of
HPV
vaccination

Increased
coverage of
screening &
treatment of
pre-cancer
lesions

Increased
coverage of
diagnosis &
treatment for
invasive
cancer and
palliative care

3

Accelerators

ORGANIGRAM: TAKING FORWARD THE ROADMAP OF ACTIVITIES AND STAKEHOLDER COORDINATION

Secretariat
Chair: Dr Simelela

Engagement
with private
sector

WHO: dedicated staff; working group representatives and Regional Offices
UN Agencies: IAEA, IARC, UNAIDS, UNFPA, UNWomen, UNICEF

Impact
Modeling,
Costing
and
Financing

Increasing
access to
Vaccines

Increasing
access to
Screening
and
Treatment

Increasing
access to
Cancer
Managemt

Monitoring
and
Surveillance

Research

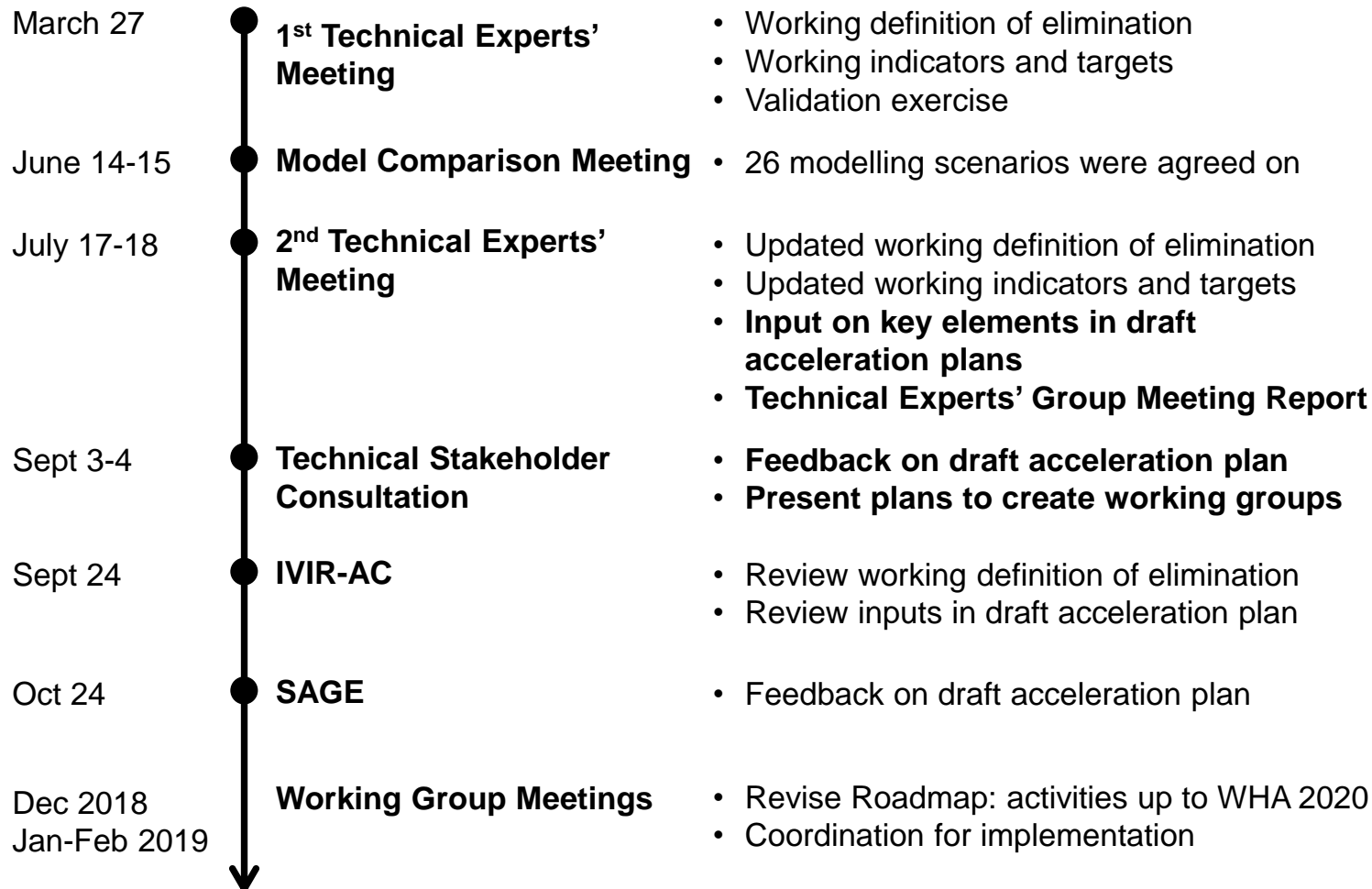
TOWARDS CERVICAL CANCER ELIMINATION STRATEGY: TIMELINE

Elimination Targets Proposed

Draft "Acceleration Plan" Development

Developed and reviewed to provide *strategies to achieve the targets*

Implementation Planning & Coordination



TOWARDS CERVICAL CANCER ELIMINATION STRATEGY: TIMELINE

Global consultation

- April– May ● **Web-based consultation** <https://www.who.int/cancer/cervical-cancer>
- May 13-15 ● **African regional consultation**
- June 18-20 ● **Eastern Mediterranean regional consultation**
- June 24-26 ● **Western Pacific regional consultation**
- June 27-28 ● **South East Asia regional consultation**
- Aug 01-02 ● **Americas regional consultation**

WHO Governing Bodies Meetings

- Aug-Sept ● **RCM agenda item**
- Jan 2020 ● **Executive Board Meeting**

May 2020 **World Health Assembly**