CBIG-SCREEN Project | A collaborative approach to cervical cancer screening

Considerations of HPV Faster strategy in at-risk populations

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Conflict of interest

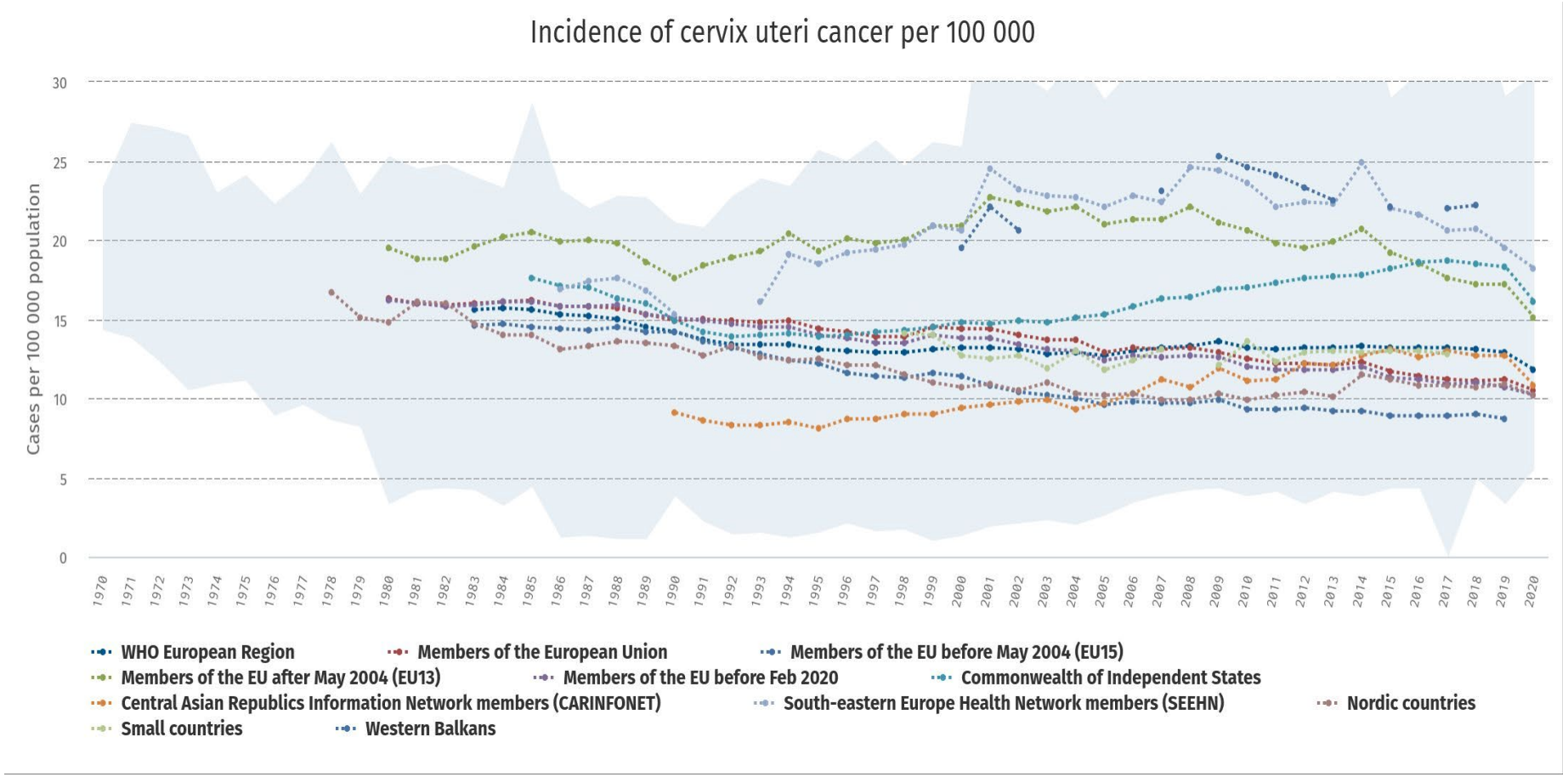
CBIG-SCREEN Project

Nothing to disclose relevant to this presentation

Except that I am coordinating the H2020 funded CBIG-SCREEN project aimed at improving cervical cancer screening efficacy in vulnerable women.

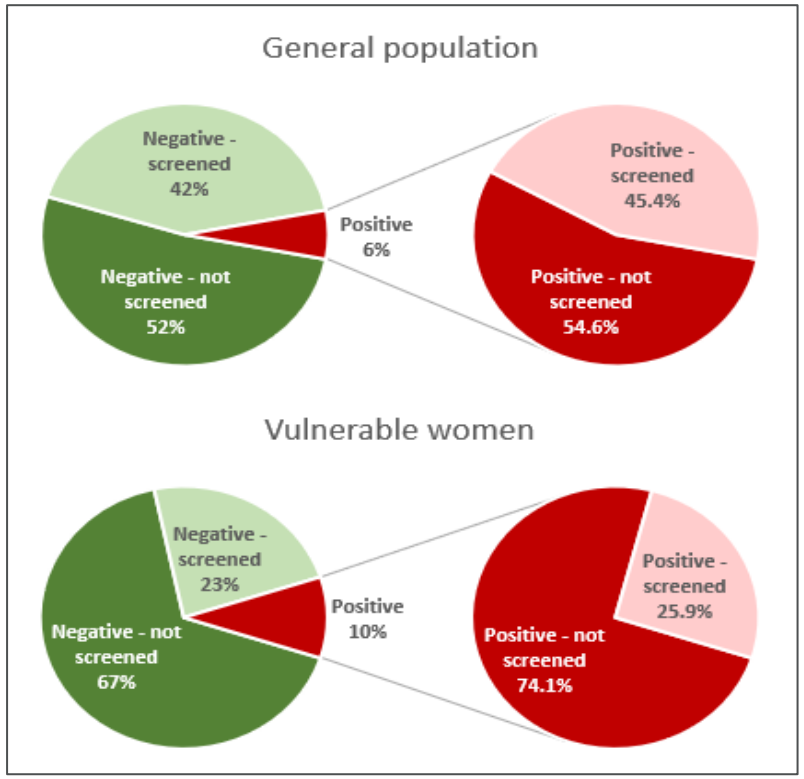
Cervical cancer is not a disease of the past—it is a disease of the poor

Screening policies appear to have reached a plateau after a clear initial benefit

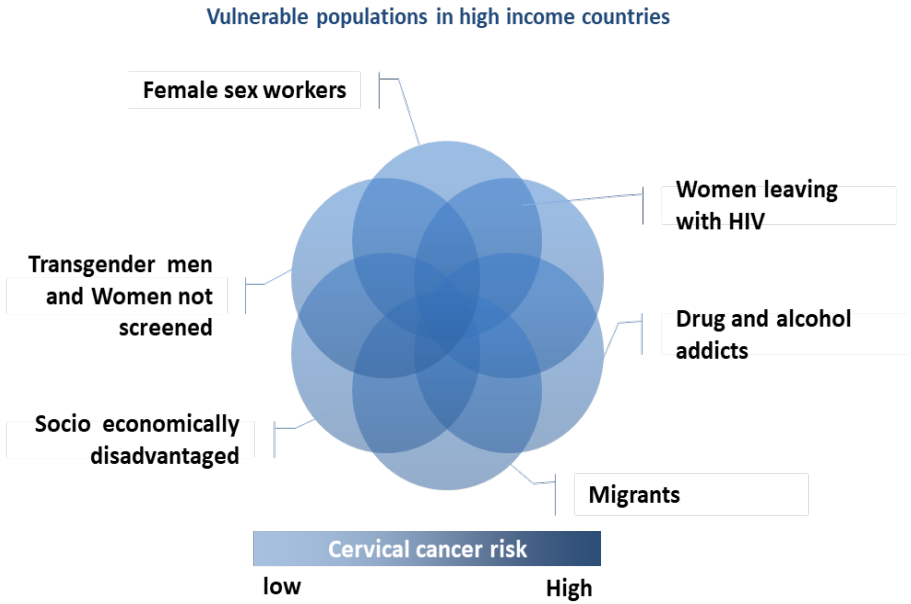


Regional incidence of cervical cancer over the past 40 years (source: WHO European Health information gateway, accessed March 6th, 2024)

How high is the risk of cervical cancer in vulnerable populations?



Vulnerable women face a 62% higher CC risk with lower screening rates, leading to more missed cases and avoidable deaths



Risk of cervical cancer according to the conjunction of several stratification groups

Suk R, et al. JAMA Netw Open 2022;**5:e2143582.**

What is our aim?

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Comment

LYNETTE DENNY

Oncologist Lynette Denny has spent 29 years working in the field of cervical cancer prevention.

The world must tackle cervical cancer faster – here's how

Lynette Denny, Ishu Kataria, Lisa Huang & Kathleen M. Schmeler

Without rapid change, the World Health Organization's goals for tackling cervical cancer by 2030 will be missed. Four specialists share ways to move the needle.

Cervical cancer can be prevented through vaccination and be cured if diagnosed early. Yet it still kills more than 300,000 people worldwide each year. Globally, only around 21% of women have had a vaccine against the human papillomaviruses (HPVs) that cause the disease.

That number needs to rise to 90% by 2030, if cervical cancer is to be eliminated in the next

LYNETTE DENNY
TARGET SCHOOLS FOR VACCINATION PROGRAMMES

Schools are the most effective place to roll out national HPV vaccination programmes. As long as enrolment levels in education are high, it's easier to reach young people at school than in health-care settings. Political will is crucial,

Cham S, et al *JAMA Oncol 2022;**8:159-61.***

What intervention are we speaking about?

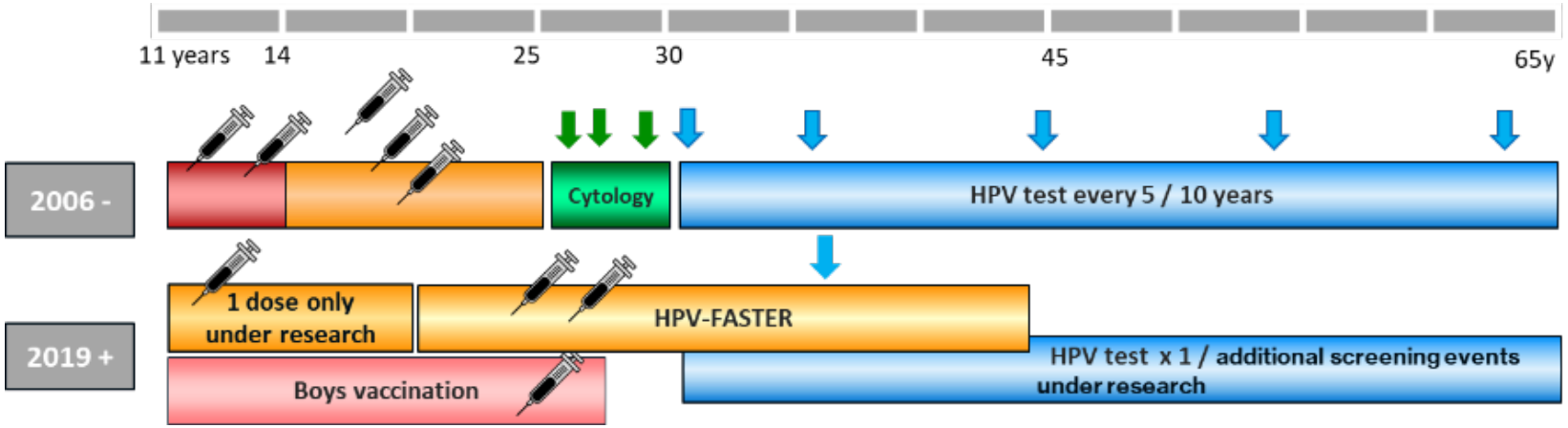

Figure 1: (adapted from Bosch, F X et al. Nat Rev Clin Oncol 2016). Current and in-planning HPV vaccination and cervical cancer screening strategy in developed countries. Green arrow indicates cytology testing, blue arrow HPV testing.

Cham S, et al *JAMA Oncol 2022;**8:159-61.***

Vaccination and screening: a virtuous couple caught in a vicious circle.

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Table 2 Unadjusted And Adjusted Odds Ratios With 95% Confidence Intervals (CIs) For Not Participation In Cervical Cancer Screening

	Odds Ratio	95% CI
Unadjusted model		
HPV vacinations status		
Vaccinted	Reference	
Un-vaccinated	2.5	(2.3-2.7)
Adjusted model[a]		
HPV vacinations status		
Vaccinted	Reference	
Un-vaccinated	2.1	(1.9-2.3)
Socio-economic factors[b]		
Parental civil status		
Married/cohabiting	Reference	
Single	1.0	(0.9-1.1)
Individual area of residence		
Densley populated	Reference	
Intermediate populated	0.9	(0.9-1.0)
Thinly populated	0.8	(0.8-0.9)
Individual country of origin		
Denmark	Reference	
Western countries	1.4	(1.0-1.8)
Non-western countries	3.6	(3.2-4.0)
Parents highest education		
High	Reference	
Middle	1.1	(1.0-1.2)
Low	1.3	(1.2-1.5)
Family income		
High	Reference	
Middle	1.2	(1.2-1.3)
Low	1.5	(1.4-1.6)
Parents higest occupation		
Working	Reference	
Temporarely not working	1.3	(1.3-1.5)
Permenantly not working	1.2	(1.0-1.4)

Notes: [a]Odds ratios are adjusted for parental civil status, highest parental educational level, highest parental occupation, family disposable income, area of residence, and country of origin. [b]Socio-economic factors used in the adjusted model, with OR for each variable's association with non-participation in cervical cancer screening.

Badre-Esfahani S, *et al. Clin Epidemiol 2019;**11:969-80.***

What are the barriers towards cervical cancer screening for vulnerable women?

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Table 4 Barriers elicited by the stakeholders in each country

Barriers	Bulgaria	Denmark	Estonia	France	Italy	Portugal	Romania
Themes	**Subthemes**						
Individual level							
Beliefs	Shame and fear. Previous bad experience.	Shame and fear. Previous bad experience. Fear of stigma. Fear of results. Waiting time is anxiety provoking.	Shame and fear. Fear of the test. Fear of stigma. Fear of results. CCS is associated with sexual activity.	Shame and fear. Previous bad experience. Fear of results.	Shame and fear. Previous bad experience. Fear of the test. Fear of stigma.	Shame and fear. Fear of stigma. Fear of result.	Shame and fear. Fear of results.
Behaviour	Prevention is not a priority. Ignoring symptoms and reluctance to approach healthcare services.	Prevention is not a priority.	Prevention is not a priority.	Prevention is not a priority.	Prevention is not a priority.	Prevention is not a priority.	Prevention is not a priority. Ignoring symptoms and reluctance to approach healthcare services. Attending screening is forbidden by husbands.
Invitation		The invitation is incomprehensible and anxiety provoking. Not a priority to open E-health mail from authorities.	The invitation is incomprehensible. The word screening is uninviting. Invitations through adverts are impersonal.	The invitation is incomprehensible and anxiety provoking. Invitation not received. Language barriers.	Invitations are written in a complex language. Invitations translated by family members. Do not open email from authorities. Language barriers.		
Knowledge, health literary and information and technology (IT) literacy	Spreading false information due to lacking knowledge.	Lack of knowledge. Lacking ability to understand messages from health authorities. Lack of IT literacy.	Lack of knowledge. Opposing information on the internet. Lack of IT literacy.	Lack of knowledge. Lack of health literacy.	Lack of knowledge. Lack of health literacy.	Lack of knowledge. Lack of health literacy.	CCS is perceived as a complicated and bureaucratic process.
Practical barriers	Logistics, time. Living in remote areas.		Logistics, living in remote areas. Asking permission from work.	Logistics. Living in remote areas. Women have to deliver the sample to the laboratory.	Logistics, time. Asking permission from work.	Logistics, time. Problems with the booking system to make appointments.	Logistics, time, no baby-sitter.
Financial barriers	Lack of health insurance.						Lack of health insurance.
Provider level							
Access to medical doctors and operators	Lack of medical doctors in remote areas and access to gynaecologists/ pathologists. Lack of involved general practitioners. Unevenly distributed health mediators.		Lack of medical doctors.		Lack of healthcare staff working in prisons.		Lack of involved general practitioners.

Boje RB, Bardou M, Mensah K, *et al. BMJ Open 2024;14:e079921*.

What are the barriers towards cervical cancer screening for vulnerable women?

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Table 4 Continued

Barriers	Bulgaria	Denmark	Estonia	France	Italy	Portugal	Romania
Themes	**Subthemes**						
Relational and cultural competencies and resources		Health professionals' paternalistic approach. Relational work is not prioritised.	Health professionals' paternalistic approach and lacking skills to take care of people with special needs.	Health professionals' paternalistic approach. Prejudices. Providing the results without consideration of literacy.	Social workers lack time to inform. Front officers lack competence to communicate with vulnerable women.	Health professionals' lack of competencies in their approach to vulnerable people. Lacking resources to provide support.	
Experience and competence to perform test				Medical doctors and midwives lack competence to perform the test.	Lack of continuous training of staff to perform the test.		
Task responsibility	The test is performed without explanation.				Medical doctors do not promote CCS.	Family doctors do not provide the results despite responsibility.	
System level							
Organisation of cervical cancer screening	No organised screening programme. Data reported on do not reflect reality. Lack of screening registry.	Complex CCS pathway.	Opportunistic—interferes with organised screening.	Complex CCS pathway.	Difficult to monitor uptake with the interference of private offers of testing.		No integrated organised screening programme.
Access	Lack of functioning population registry.	Incorrect or no registration of address.	Incorrect or no registration of address.	Incorrect or no registration of address.	Incorrect or no registration of address. Inflexible appointment system.	Incorrect or no registration of address.	Lack of linkage between health insurance organisations and population registries.
Awareness		Lacking knowledge of women's perception of invitation letter.	Unsuccessful information strategy.		Lacking mediation in awareness work.		
Test results and follow-up	Lacking follow-up from mobile units. Lack of follow-up treatment.			False-negative results from HPV tests. Lost results.	Complicated follow-up at hospitals. Unequal distribution of colposcopy.		
Healthcare and society	Prevention is not a priority politically by providers or in the general population.	Lack of individualised care/ medicine.	Lack of individualised care/medicine. Mistrust in 'system'. E-health impedes human contact.		Lack of individualised care/medicine. Lack of environment adapted to the needs of women.	Lack of individualised care/ medicine. Lacking integration of healthcare services.	
Funding	Partly funding. A high number of uninsured vulnerable people.			Partly funding. Partly reimbursement for colposcopy.		Lacking funding for unregistered women.	Partly funding. A high number of uninsured vulnerable people.

CCS, cervical cancer screening; HPV, human papillomavirus.

Boje RB, Bardou M, Mensah K, *et al. BMJ Open 2024;14:e079921*.

Who and where are the vulnerable women?

Table 2 Categories and ranking of vulnerable women for cervical cancer screening (CCS) as identified by respondents in $n = 22$ countries classified by EuroVoc region

Countries by EUROVOC region	Central and Eastern Europe ($n = 7$)	Northern Europe ($n = 4$)	Southern Europe ($n = 4$)	Western Europe ($n = 7$)	Total ($n = 22$)
Category	***n* (%)**	***n* (%)**	***n* (%)**	***n* (%)**	***n* (%)**
Proportion of vulnerable groups					
Women living in poverty in socially deprived areas	6 (85.71)	3 (75.00)	2 (50.00)	7 (100.00)	18 (81.82)
Women attending HIV/STI clinics	2 (28.57)	0 (0.00)	0 (0.00)	4 (57.14)	6 (27.27)
Drug or alcohol addicted women attending drop-in centres	3 (42.86)	1 (25.00)	2 (50.00)	4 (57.14)	10 (45.45)
Sex workers	2 (28.57)	1 (25.00)	2 (50.00)	5 (71.43)	10 (45.45)
Migrants from high HPV prevalence areas living in deprived areas	2 (28.57)	3 (75.00)	3 (75.00)	7 (100.00)	15 (68.18)
Prison inmates	2 (28.57)	0 (0.00)	3 (75.00)	4 (57.14)	9 (40.91)
Homeless people	4 (57.14)	1 (25.00)	2 (50.00)	6 (85.71)	13 (59.09)
Indigenous populations	1 (14.29)	1 (25.00)	0 (0.00)	3 (42.86)	5 (22.73)
Women with disabilities	0 (0.00)	0 (0.00)	1 (25.00)	4 (57.14)	5 (22.73)
LGBTQI+ populations	0 (0.00)	0 (0.00)	0 (0.00)	3 (42.86)	3 (13.64)
Other[a]	5 (71.43)	1 (25.00)	2 (50.00)	3 (71.43)	11 (50.00)
Ranking of vulnerable groups					
First place	Women living in poverty in socially deprived areas	*Tie between:* Women living in poverty in socially deprived areas *AND* Sex workers *AND*	Prison inmates	Homeless people	Homeless people
Second place	Homeless people		Migrants from high HPV prevalence areas living in deprived areas	Migrants from high HPV prevalence areas living in deprived areas	*Tie between:* Women living in poverty in socially deprived areas *AND* Migrants from high HPV prevalence areas living in deprived areas
Third place	Drug or alcohol addicted women attending drop-in centers	Migrants from high HPV prevalence areas living in deprived areas	*Tie between:* Homeless people *AND* Women with disability	Women living in poverty in socially deprived areas	

Mallafre-Larrosa M, *et al. Eur J Public Health 2023;**33:502-8***.

A lack of dedicated screening policies in Europe

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Table 3 Stratified analysis of survey domains by EuroVoc region, presence of population-based cervical cancer screening programme, cervical cancer incidence and Human Development Index

	Presence of vulnerable groups (VG) (Q1) *n* (%)	Existence of a policy for VG (Q7) *n* (%)	Dedicated CCS M&E among VG (Q6.1) *n* (%)	Invitation strategy for VG (Q9.1) *n* (%)	Awareness raising governmental (Q12) *n* (%)	Awareness raising non-governmental (Q13) *n* (%)	Client-directed interventions (Q14) *n* (%)
EuroVoc Region (total category)							
Central and Eastern Europe ($n=7$)	6 (85.71)	2 (28.57)	2 (28.57)	1 (14.29)	4 (57.14)	3 (42.86)	5 (71.43)
Northern Europe ($n=4$)	3 (75.00)	1 (25.00)	0 (0.00)	0 (0.00)	1 (25.00)	2 (50.00)	3 (75.00)
Southern Europe ($n=4$)	4 (100.00)	0 (0.00)	1 (25.00)	2 (50.00)	3 (75.00)	0 (0.00)	3 (75.00)
Western Europe ($n=7$)	7 (100.00)	3 (42.86)	2 (28.57	2 (28.57)	5 (71.43)	4 (57.14)	5 (71.43)
Presence of a population-based programme[a]							
Yes ($n=18$)	16 (88.89)	5 (27.78)	4 (22.22)	5 (27.78)	12 (66.67)	7 (38.89)	14 (77.78)
No ($n=4$)	4 (100.00)	1 (25.00)	1 (25.00)	0 (0.00)	1 (25.00)	2 (50.00)	2 (75.00)
Cervical cancer incidence (median 9.6)							
Below median ($n=11$)	11 (100.00)	1 (9.09)	2 (18.18)	2 (18.18)	6 (54.55	3 (27.27	7 (63.64)
Above median ($n=11$)	9 (81.82)	5 (45.45)	3 (27.27)	3 (27.27)	7 (63.64)	6 (54.55)	9 (81.82)
Human development index							
High (0.8–0.9) ($n=12$)	10 (83.33)	4 (33.33)	4 (33.33)	4 (33.33)	7 (58.33)	5 (41.67)	10 (83.33)
Very high ($\geq$0.9) ($n=10$)	10 (100.00)	2 (20.00)	1 (10.00)	1 (10.00)	6 (60.00)	4 (40.00)	6 (60.00)
Total ($n=22$)	20 (90.91)	6 (27.27)	5 (22.73)	5 (22.73)	13 (59.09)	9 (40.91)	16 (72.73)

CCS, cervical cancer screening; M&E, monitoring and evaluation; VG, vulnerable group; Q, question item.
a: The presence of a population-based program does not derive from the survey, but from the EUSR17.[21]

Mallafre-Larrosa M, *et al. Eur J Public Health 2023;**33:502-8***

A use case: the migrant population

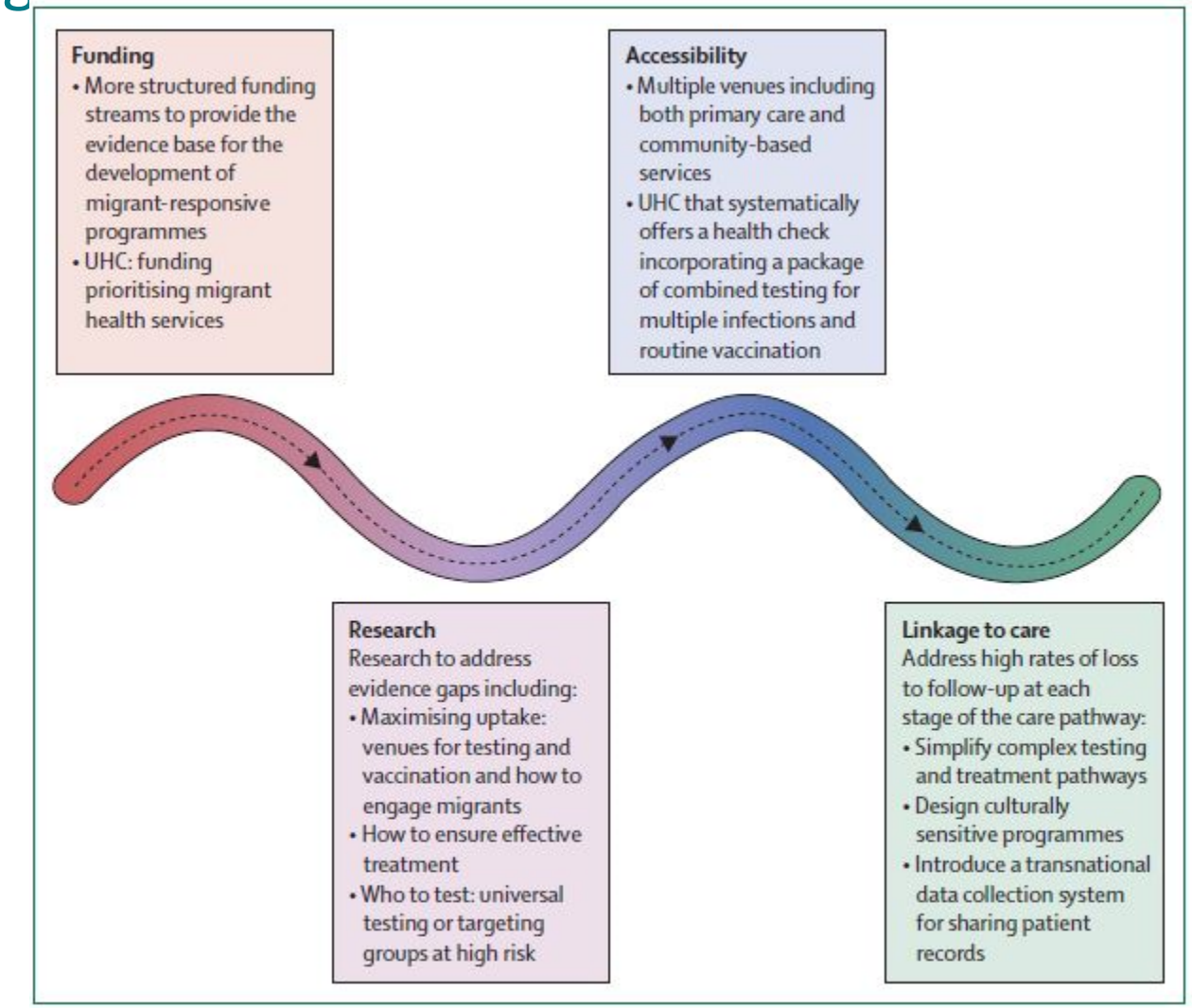
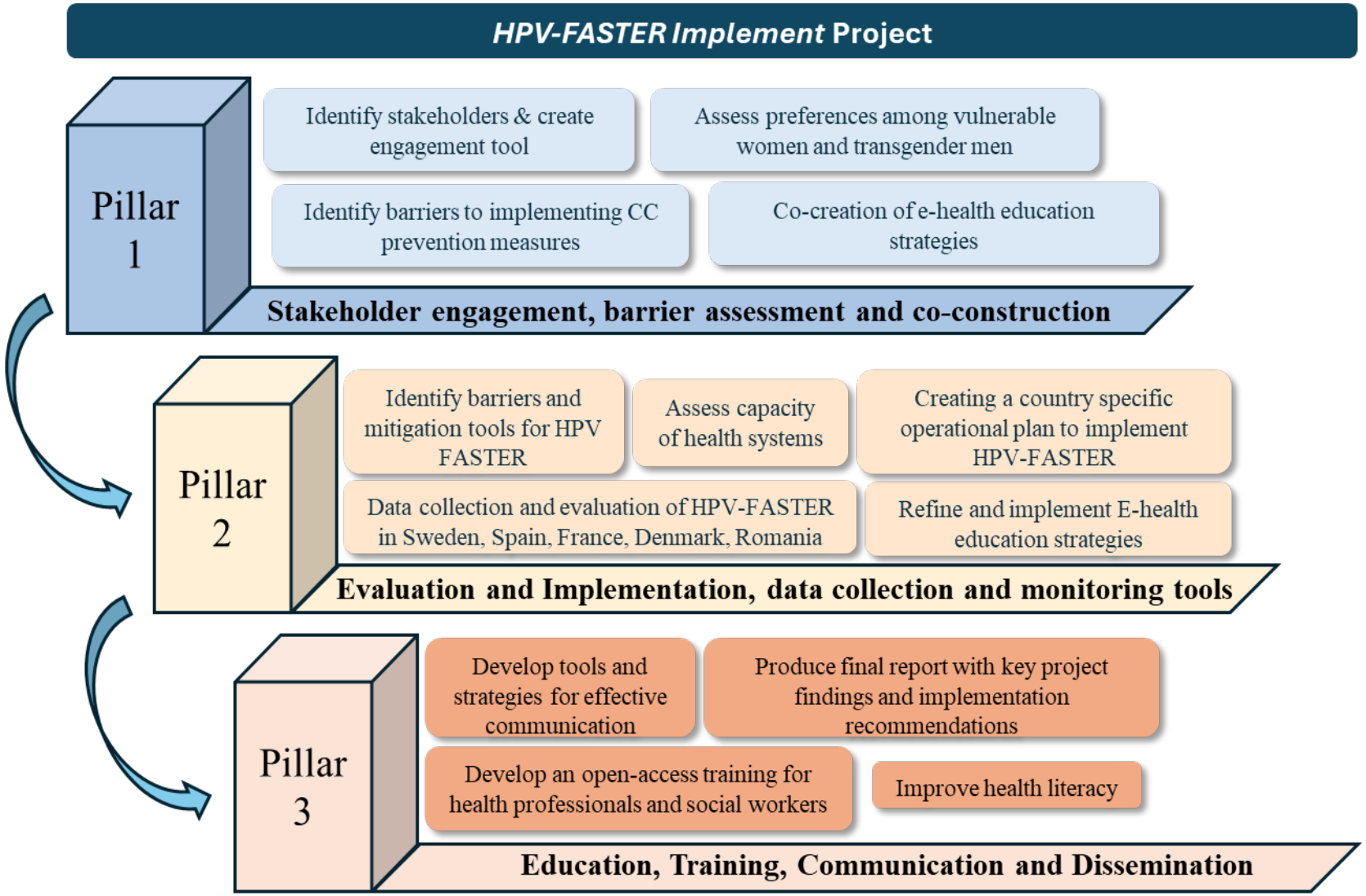


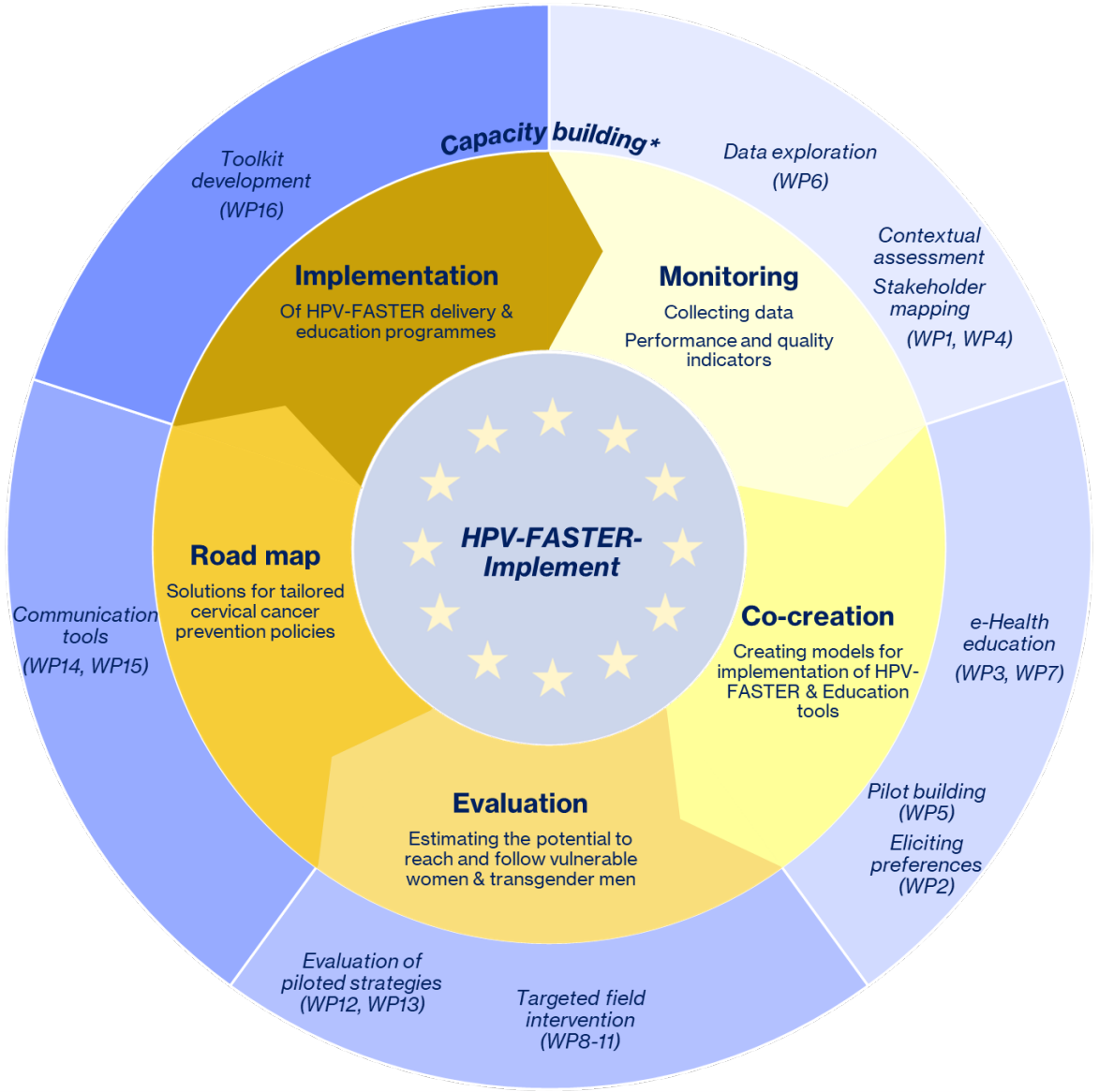
Figure: **A roadmap for integrated infectious diseases screening and vaccination of migrants**
UHC=universal health coverage.

Baggaley RF, *et al. Lancet Public Health 2022;7:e876-e84.*

Proposing a strategy to implement and manage HPV-FASTER for vulnerable populations



HPV-FASTER-implement project as a health policy cycle.



We will build capacity for tailored CC prevention implementation and monitoring throughout the project.

In conclusion

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- The HPV FASTER approach represents a new opportunity to achieve the goal of cervical cancer elimination.
- There are many barriers to equitable cervical cancer screening, and the addition of vaccination makes the approach even more complex (financial and logistical constraints, vaccine hesitancy).
- Implementing an HPV FASTER campaign means working with stakeholders to co-construct approaches based on the needs of vulnerable groups, and these needs are not necessarily the same depending on the type of vulnerability.
- The evaluation of a programme to deliver the HPV FASTER intervention to vulnerable populations must take into account individual and contextual barriers to the greatest extent possible.
- There is an urgent need to develop real political and societal knowledge and understanding of vulnerable populations and the difficulties they face in their prevention efforts.