

# How To Close The GAP?

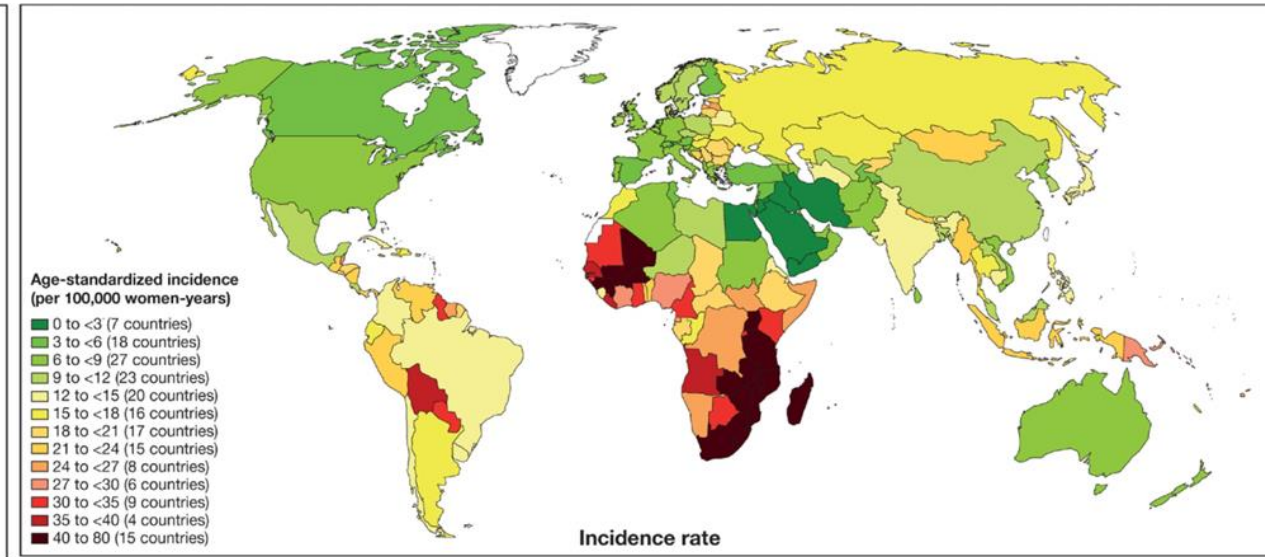
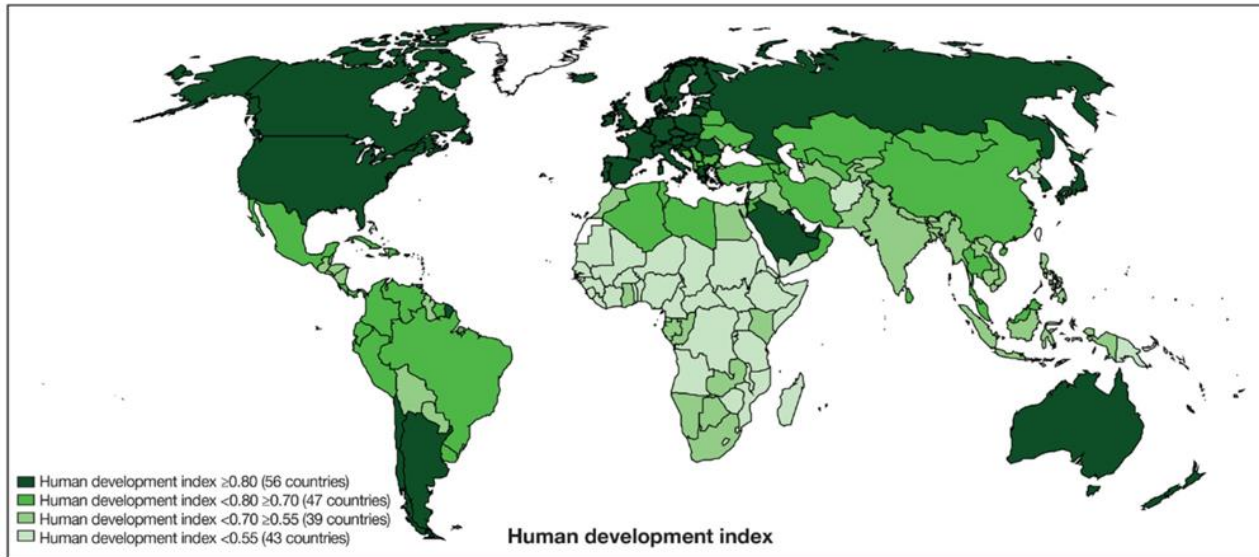
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# Conflict Of Interest

*No disclosure*

# Relation of human development index to cervical cancer incidence

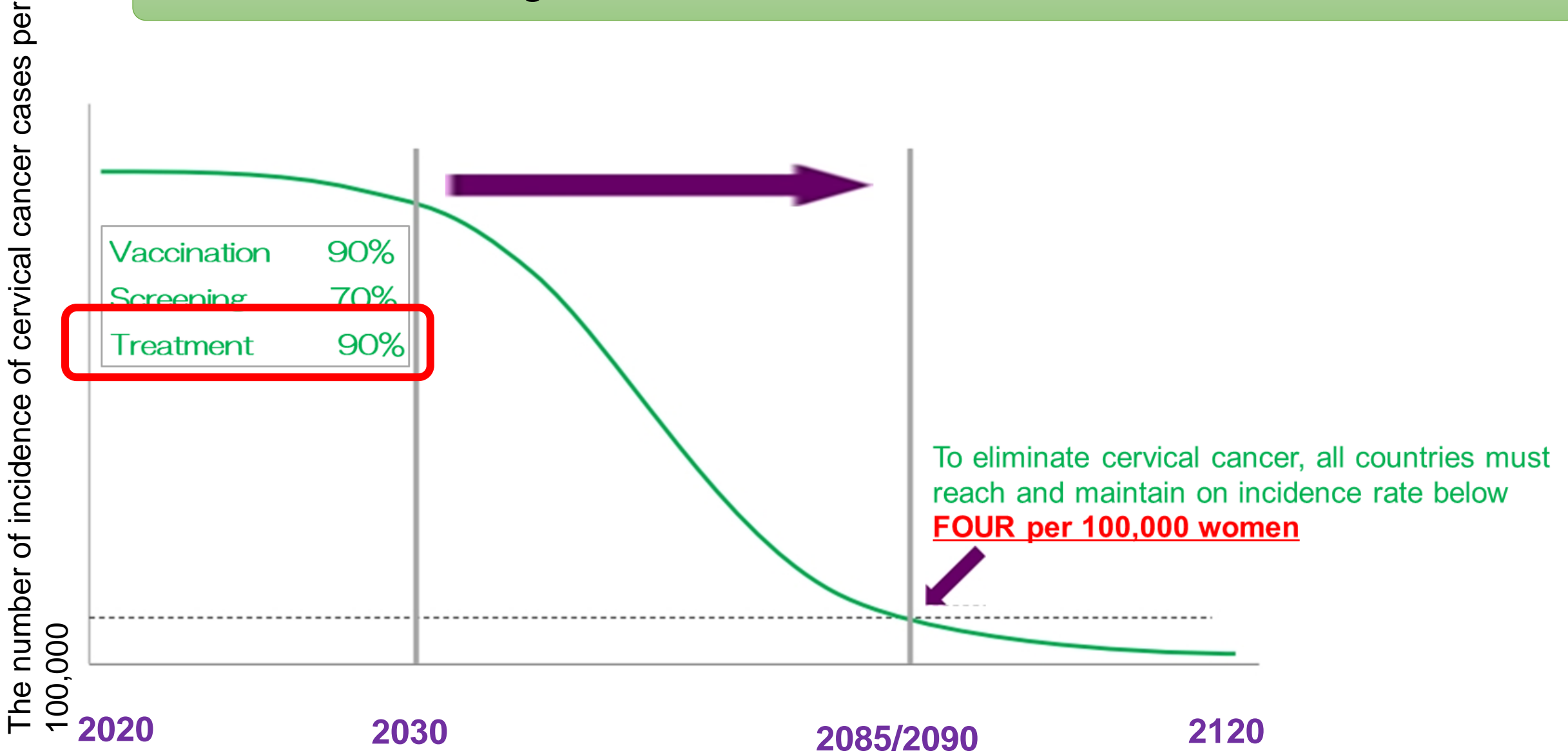


**Human development index**

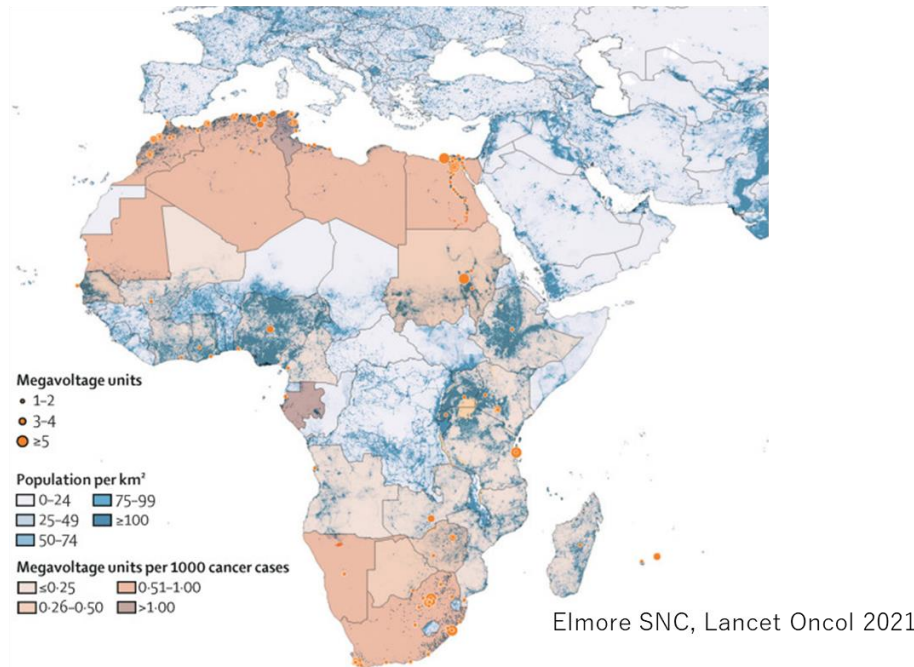
**Incidence rate**

Countries with a lower human development index also tend toward higher cervical cancer incidence

The WHO launched a global initiative to accelerate the elimination of cervical cancer



## Distribution of radiotherapy facilities in Africa



## Radiotherapy access in Asia

Data and calculations relevant to external beam radiotherapy in Asia and the Pacific

Asia and the Pacific		Total	LIC	L-MIC	U-MIC
Number of countries		30	6	15	9
Population (million)	A	3847.0	304.6	1960.6	1581.8
%		100%	8%	51%	41%
New cancer cases/year	B	5 416 398	295 700	1 766 798	3353 900
Number of radiotherapy courses/year	$C = B \times 0.4949 \times 1.25$	3 350 411	182 911	1 092 885	2074 616
Number of radiotherapy fractions/year	$D = C \times 16.29$	54 570 598	2 979 199	17 800 617	33 790 783
% of countries without radiotherapy		23%	17%	27%	22%
Number of existing machines	E	2541	44	702	1795
Number of LINAC	F	1845	18	379	1448
Number of Co <sup>60</sup> machines	G	696	26	323	347
% of Co <sup>60</sup> machines	G/E	27%	59%	46%	19%
Machines/million population	E/A	0.661	0.144	0.358	1.135
Radiotherapy courses/machine (450/year – 8 h/day)	C/E	1319	4157	1557	1156
Fractions/machine (9600/year – 10 h/day)	D/E	21 476	67 709	25 357	18 825
Total machines needed (1 x 450 courses/year – 8 operating hours/day)	$H = C/450$	7445	406	2429	4610
Additional machines needed	$I = H - E$	4904	362	1727	2815
% of needs currently covered	E/H	34%	11%	29%	39%
Total machines needed (1 x 9600 fractions/year – 10 operating hours/day)	$J = D/9600$	5684	310	1854	3520
Additional machines needed	$K = J - E$	3143	266	1152	1725
% of needs currently covered	E/J	45%	14%	38%	51%

LIC, low income countries; L-MIC, lower-middle income countries; U-MIC, upper-middle income countries.

Zubizarreta et al, Clin Onc 2015

# Availability of HDR afterloaders in LMICs

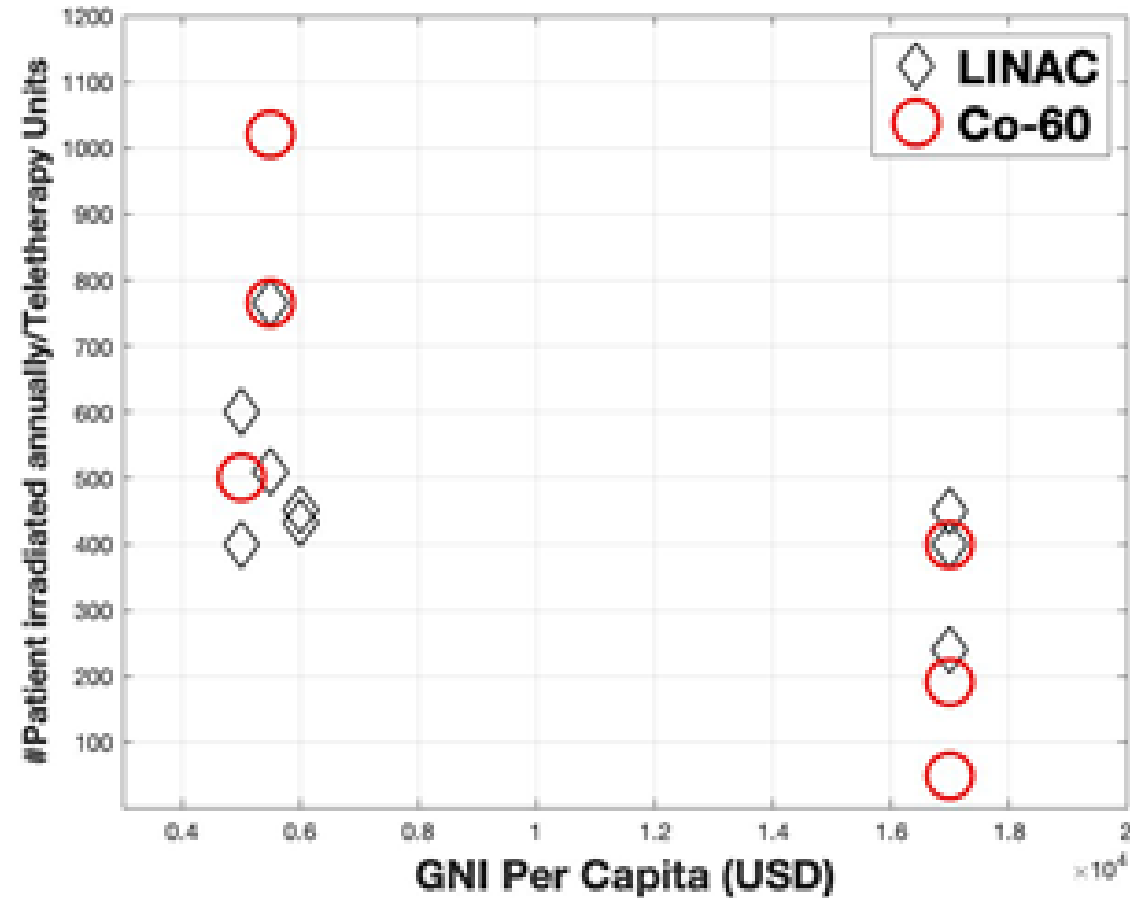
	HDR available	HDR needed	Needs covered
Africa	40	105	38%
Latin America	156	68	228%
Asia-Pacific	108	242	45%
Europe-Central Asia	98	24	407%
Total	402	440	91%



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# Quality assurance: Review of global needs

- Survey sent to radiotherapy centers in 6 countries
  - South Africa, Trinidad/Tobago, Bahamas, Ghana, Barbados, Jamaica
- 12 responses (92% response rate)
  - 4 (HIC), 5 (UMIC), 3 (LMIC)



# The WHO launched a global initiative to accelerate the elimination of cervical cancer

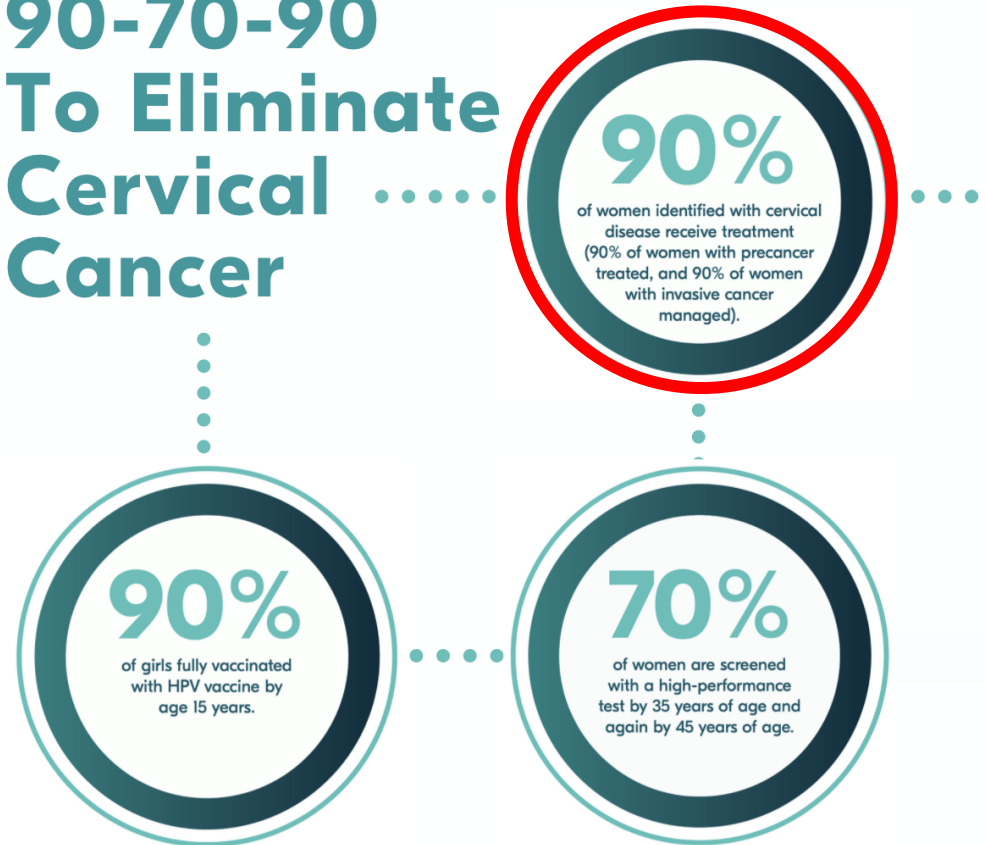


The World Health Assembly adopted the global strategy to accelerate the elimination of cervical cancer as a public health problem by 2030.

## WHO'S ELIMINATION STRATEGY 3 PILLARS\*

- 1 Prevention through vaccination**  
HPV vaccination offers long-term protection against cervical cancer.
- 2 Screening and treatment of precancerous lesions**  
can prevent pre-cancer from developing into cancer.
- 3 Timely treatment and palliative care for invasive cervical cancer**  
can save lives and palliative care can greatly reduce pain and suffering.  
\*To eliminate cervical cancer, all countries must reach and maintain an incidence rate below four per 100 000 women.

## 90-70-90 To Eliminate Cervical Cancer



#GlowTeal

GET INFORMED. GET SCREENED. GET VACCINATED.  
LEARN MORE AT [WWW.WHO.INT](http://WWW.WHO.INT)



# How To Close The GAP?



- **Government investment in radiotherapy infrastructure**
- **Education and training to perform radiotherapy procedures and maintain facilities**
- **Development of a multidisciplinary network of experts**
- **...**

## **What I am concerned about is...**

- **How about the condition of Vaccination or Cancer screening in each country?**
- **The issues of a shortage of other resources  
(number of beds, staff, agents, equipment of diagnosis, etc..)**

# Future Option...?

## Non-inferiority Trial

**Stage IB-IIb Cervical cancer**  
After radical hysterectomy, margin negative  
High risk: LN metastasis(+) and/or parametrial invasion

**Randomization**

### CCRT

- Whole pelvis irradiation 50.4Gy (3DRT or IMRT)
- CDDP: 40mg/m<sup>2</sup> /w IV max 6 cycles every week

### Chemotherapy

#### 1) TP

Paclitaxel: 175 mg/m<sup>2</sup> 3hr IV d1  
Cisplatin: 50mg/m<sup>2</sup> IV d1

#### 2) TC

Paclitaxel: 175 mg/m<sup>2</sup> 3hr IV d1  
Carboplatin: AUC=6 IV d1

6cycles every 3 weeks

### Balancing factors

- Faculty
- Stage
- Pathological subtype (SCC or non-SCC)

# Thank you !!

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