

# **Research priorities for cervix cancer control in low resource settings**

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# Acknowledgements

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COMMENTARY

**Does human papillomavirus cause cervical cancer? The state of the epidemiological evidence**

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# **Cervix cancer control: The knowledge base in 2011**

- Highly effective vaccine
- Highly effective screening and treatment
- Constant technological improvements
- Historically low rates of cervix cancer
- But only in rich countries

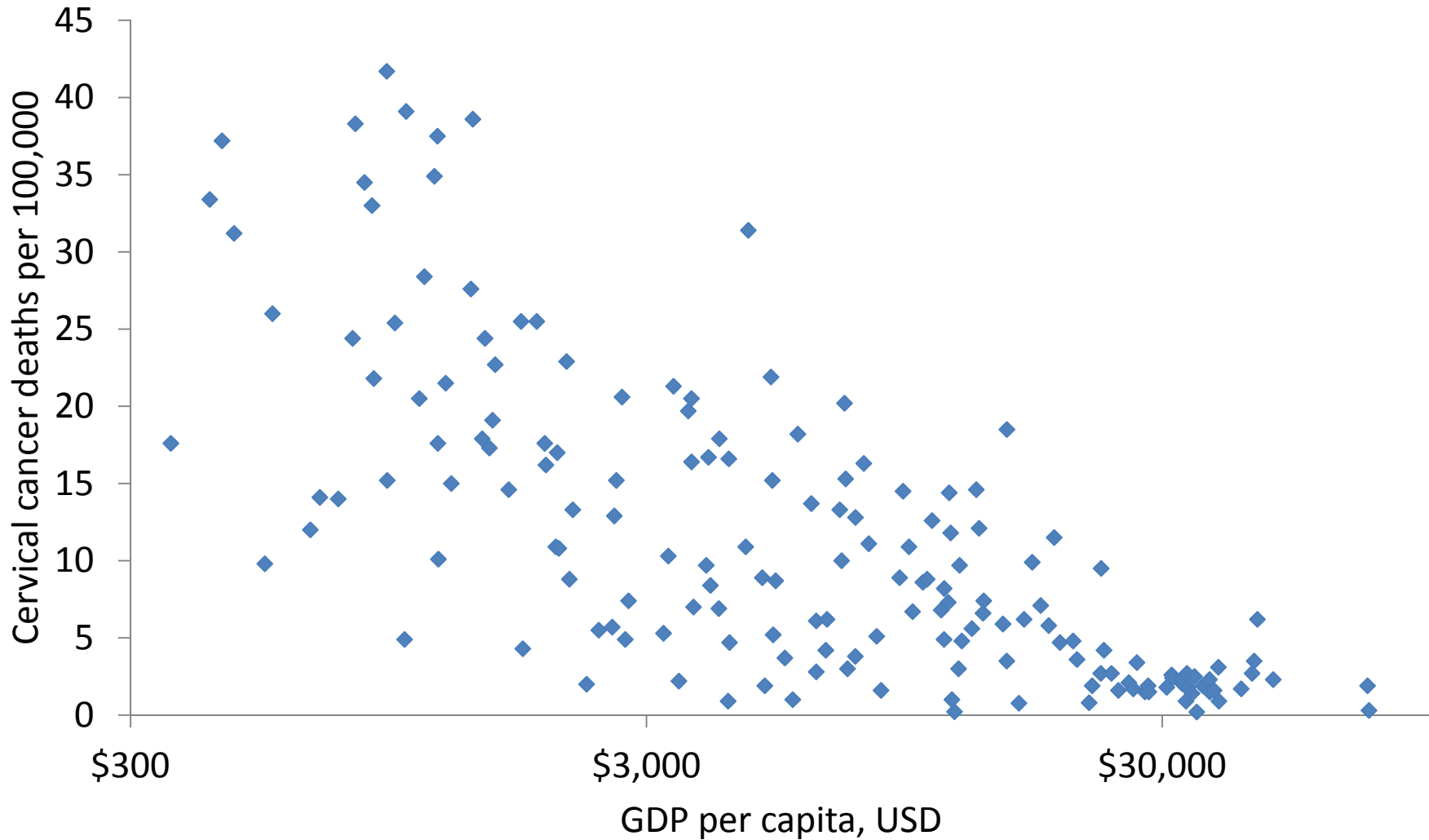
# Two striking examples

- Papua New Guinea
- Cambodia

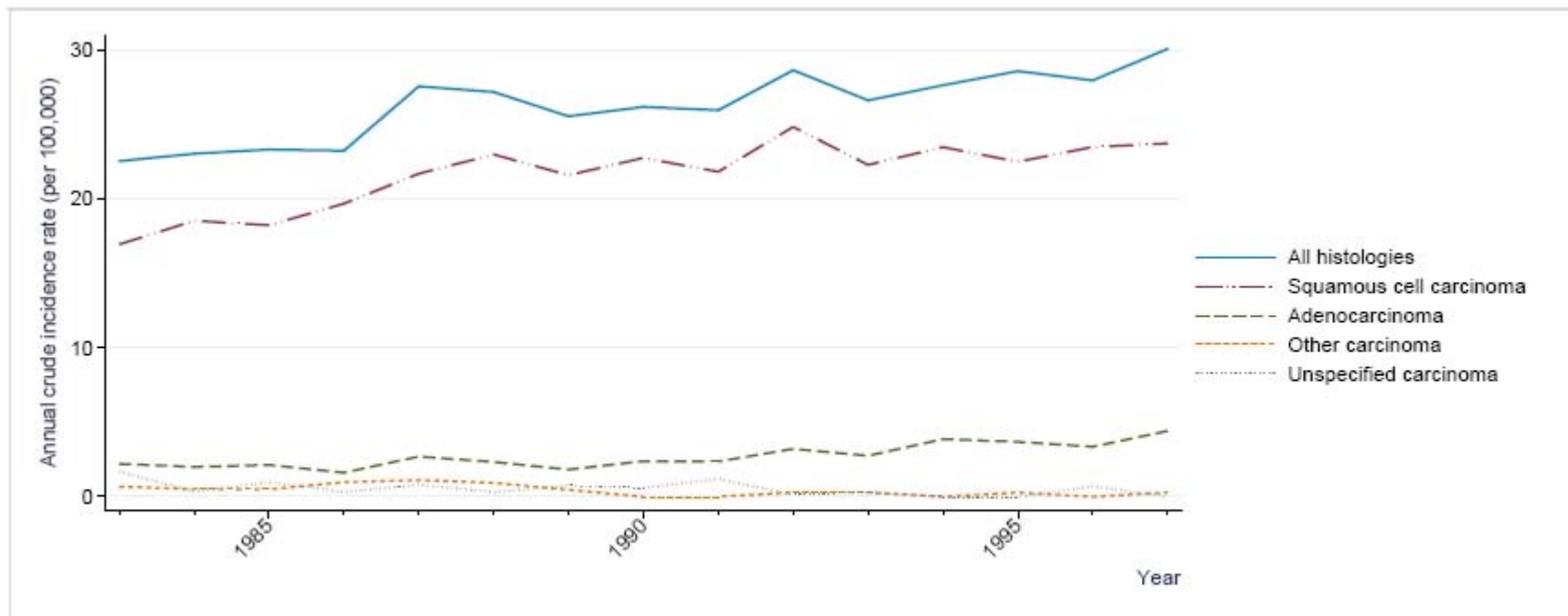
# Cervix cancer in poor countries

- Top 2-3 cancers in many countries
- Strong inverse correlation with GDP
- No evidence for impact
- Major barriers to implementing control

# Cervical cancer deaths and GDP, 2008



# Cervical cancer incidence in Thailand



Data source:  
IARC, Cancer Incidence in 5 Continents, Vol I-VIII  
1983-1997: Chiang Mai;



# The vaccine solution

- Cost
  - Delivery infrastructure
  - Coverage
  - Effectiveness
  - Time lag
- ....Political priority?

# Cost of the vaccine

- Cost effective but...
  - Still expensive at \$15 GAVI price
  - Many high risk countries may not qualify
- ....Political priority?

# Screening and treatment solution

- Cost
  - Clinical expertise
  - Coverage
  - Effectiveness of current VIA strategies
- ....Political priority?

# Cambodia

- Population 15m
- Highest estimated rate of cervical cancer in region
- No published HPV data
- Some limited vaccine access
- No screening
- Radiotherapy limited
- Reasonable access to pain control

# Papua New Guinea

- Population 6 million
- High estimated rates of cervical cancer
- No published population HPV data
- No vaccine
- GAVI eligibility may be lost soon
- No screening
- Radiotherapy sporadic to unavailable
- Pain control often in short supply

# How can research help?

- Expose the problem
  - Measure and reinforce program successes
  - Learn from less effective activities
  - Link into the international agenda
- ....Political support and legitimacy

# Exposing the problem

Do we need to measure cancer occurrence?

Options

- *Registries*
- *Surveys of facilities*
- *Surveys of people*

Repeatability more important than accuracy

How local?

# Type specific prevalence

Fundamental measurements needed for control

- *Planning*
- *Monitoring and evaluation*
- *Cost effectiveness*

Should be routine, and standardised

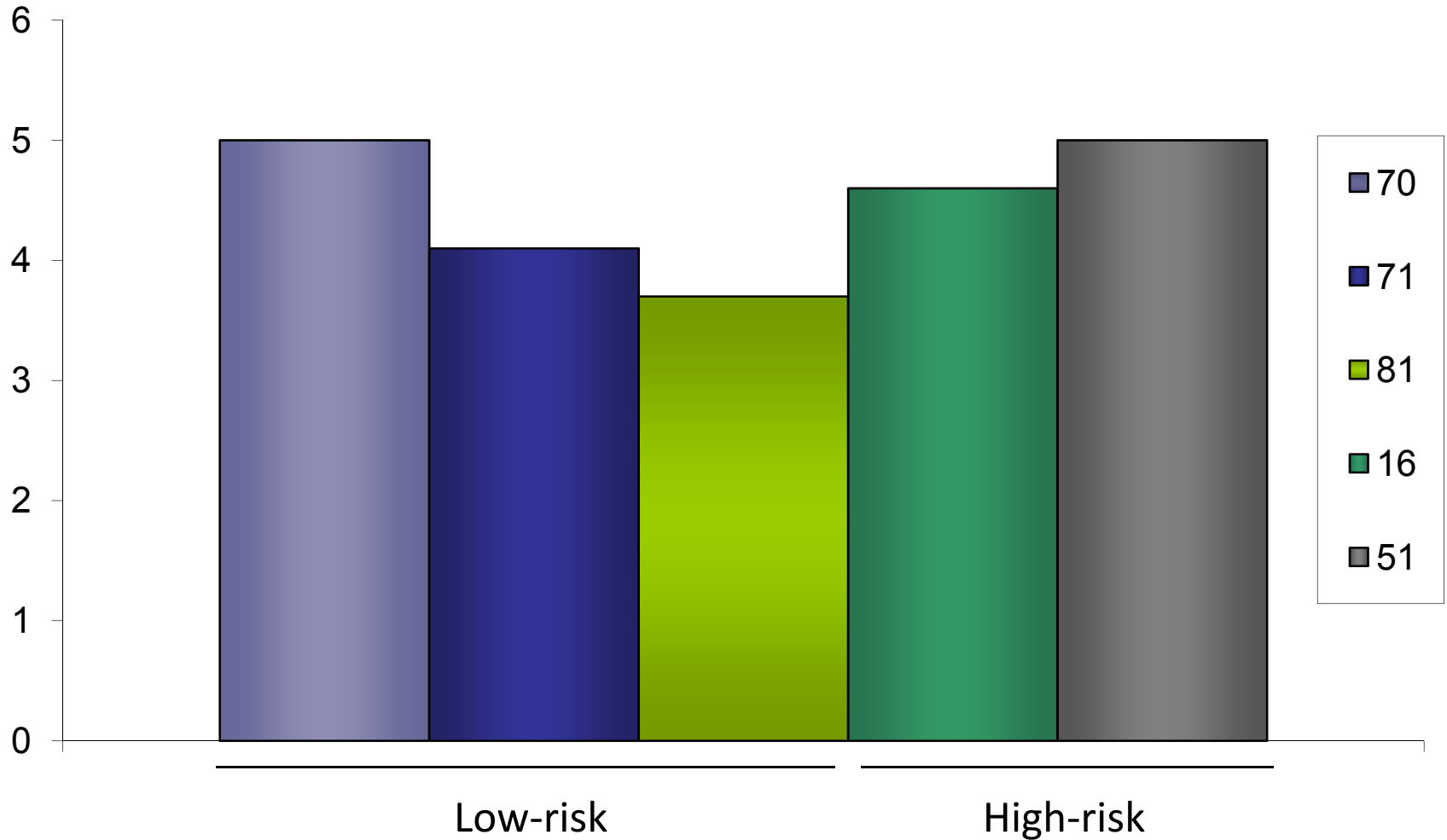
No longer view as a “research project”

Internationally agreed protocols

Transfer of technology



# HPV subtype prevalence among young women engaged in sex work in Phnom Penh



# HPV in women who do sex work in Phnom Penh

Characteristics	Prevalence of HPV infection		
	N	%	p-value
<b>Overall</b>	90/219	41.1%	
<b>Age</b>			0.907
16-18	5	35.7	
19-24	29	40.9	
25-29	56	41.8	
<b>Education (years)</b>			0.127
None	23	46.9	
Primary (1-6 years)	54	43.6	
Secondary (7+ years)	13	28.3	
<b>Sex partners (last month)</b>			<0.001
≤5	31	31.3	
6-15	27	38.0	
≥16	32	65.3	
<b>Condom use (last partner)</b>			0.011
Consistent (always)	66	47.5	
Inconsistent	24	30.0	
<b>HIV serology</b>			<0.001
Negative	64	34.4	
Positive	26	78.8	

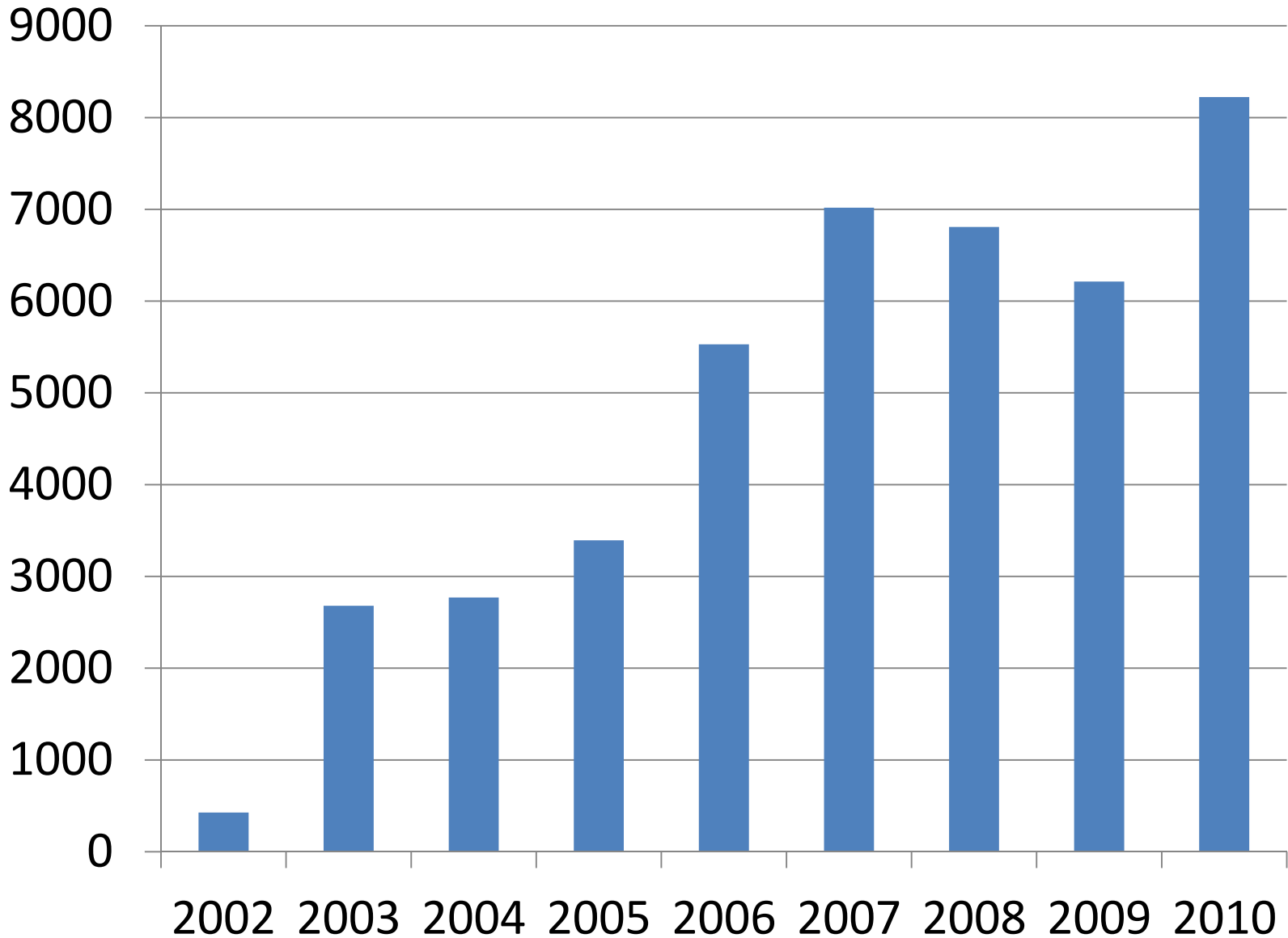
# Program-based research

- Programs often motivated by “need to act”
- Incorporate research from the start
- Clear and relevant end points
- Especially for pilot or demonstration projects
  - *Coverage?*
  - *Performance?*
  - *Outcomes?*
- Aim for generalisability

# Meripath Program PNG

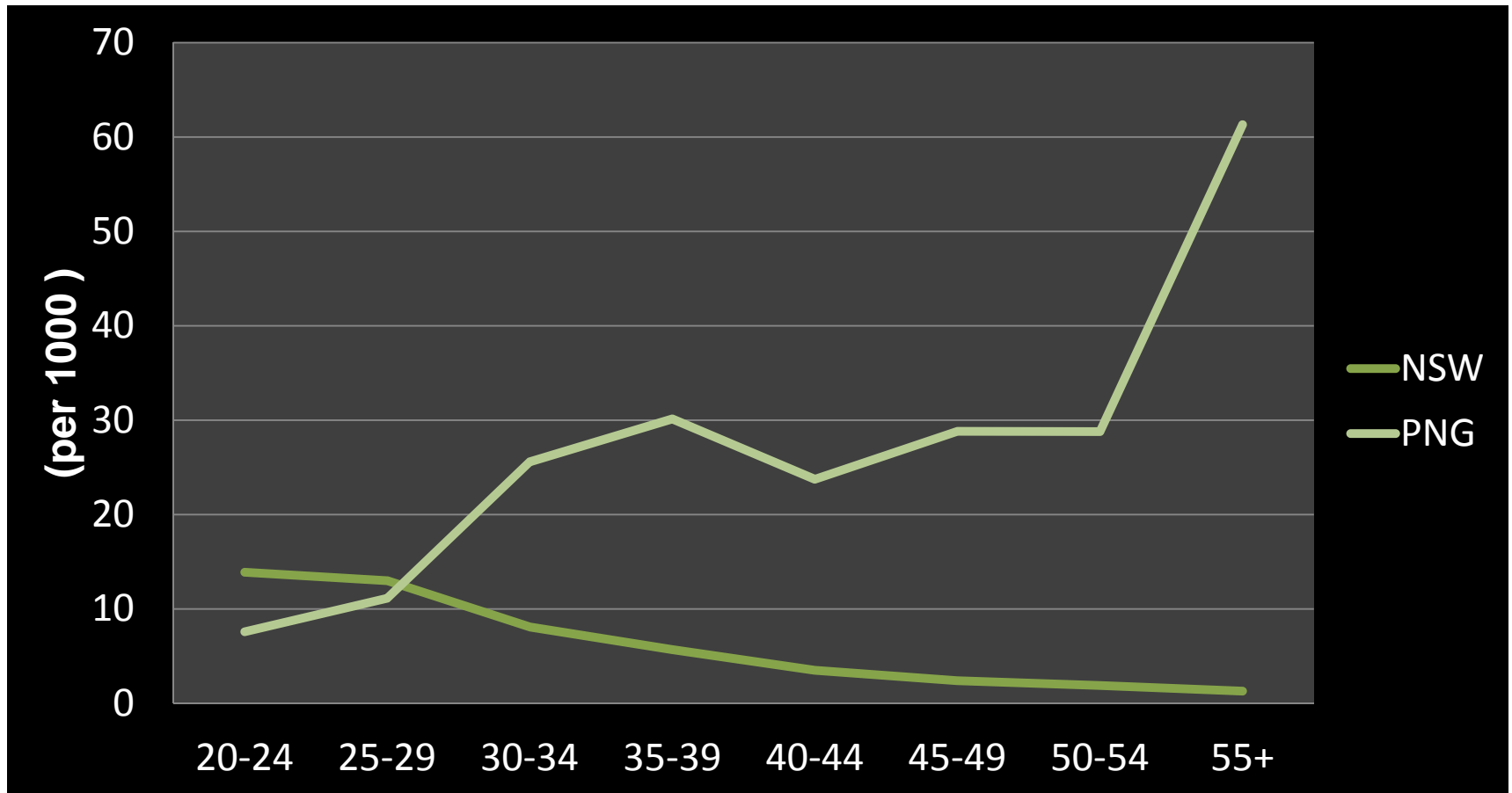
- Begun in 2002 following pilot work
- Supported by Caritas Australia in collaboration with PNG Obstetrics and Gynaecology Society
- Government endorsed
- **SHORT-TERM GOAL:** training and support for the collection and clinical management of pap tests and follow-up biopsies in PNG
- **LONG-TERM GOAL:** establish cytology laboratory in PNG, provide training and ongoing support

# Meripath cervical cytology program





# Meripath 2002-9: Proportion of high grade abnormalities



# Driving the international agenda

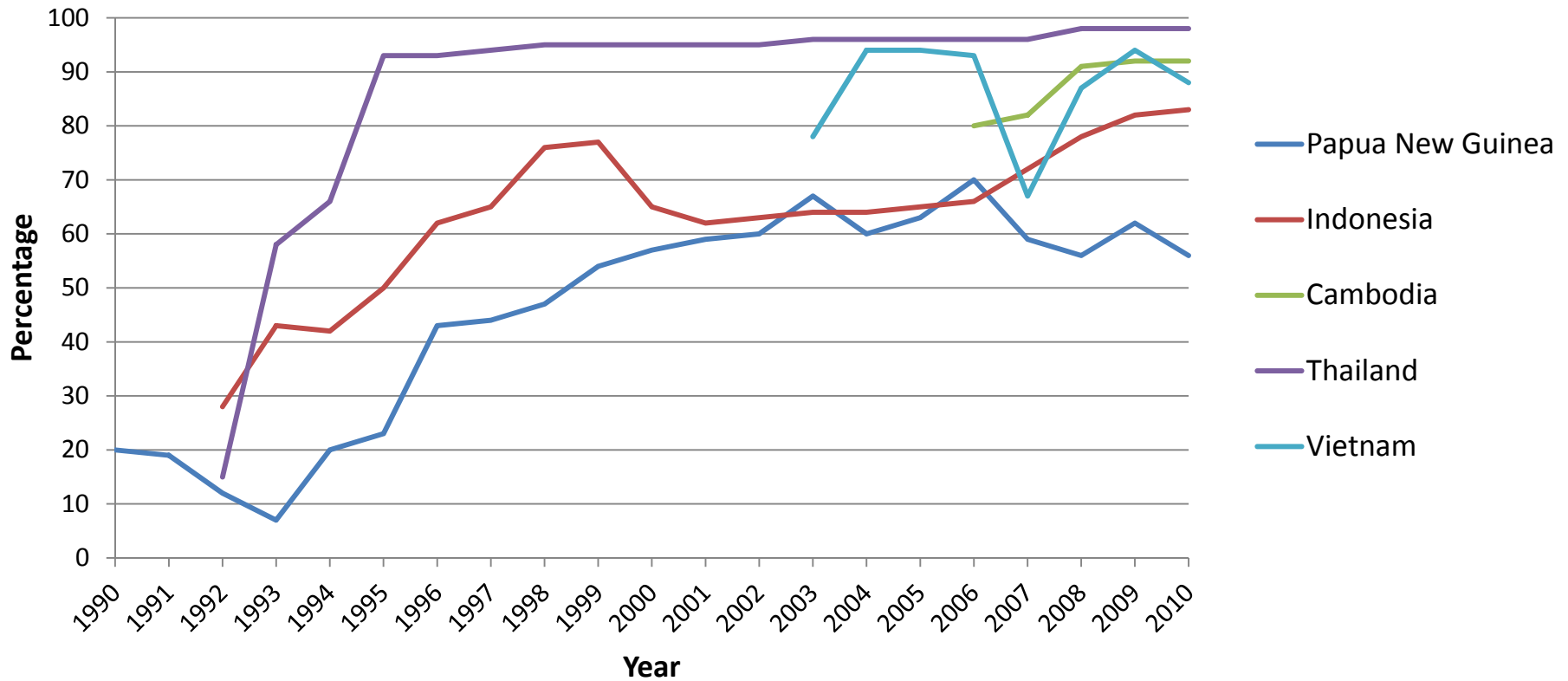
- HPV testing that can be done cheaply on site?
- A vaccine that is safe and effective for infants?
- Technology to improve accuracy of local treatment?



# Are there lessons from other fields?

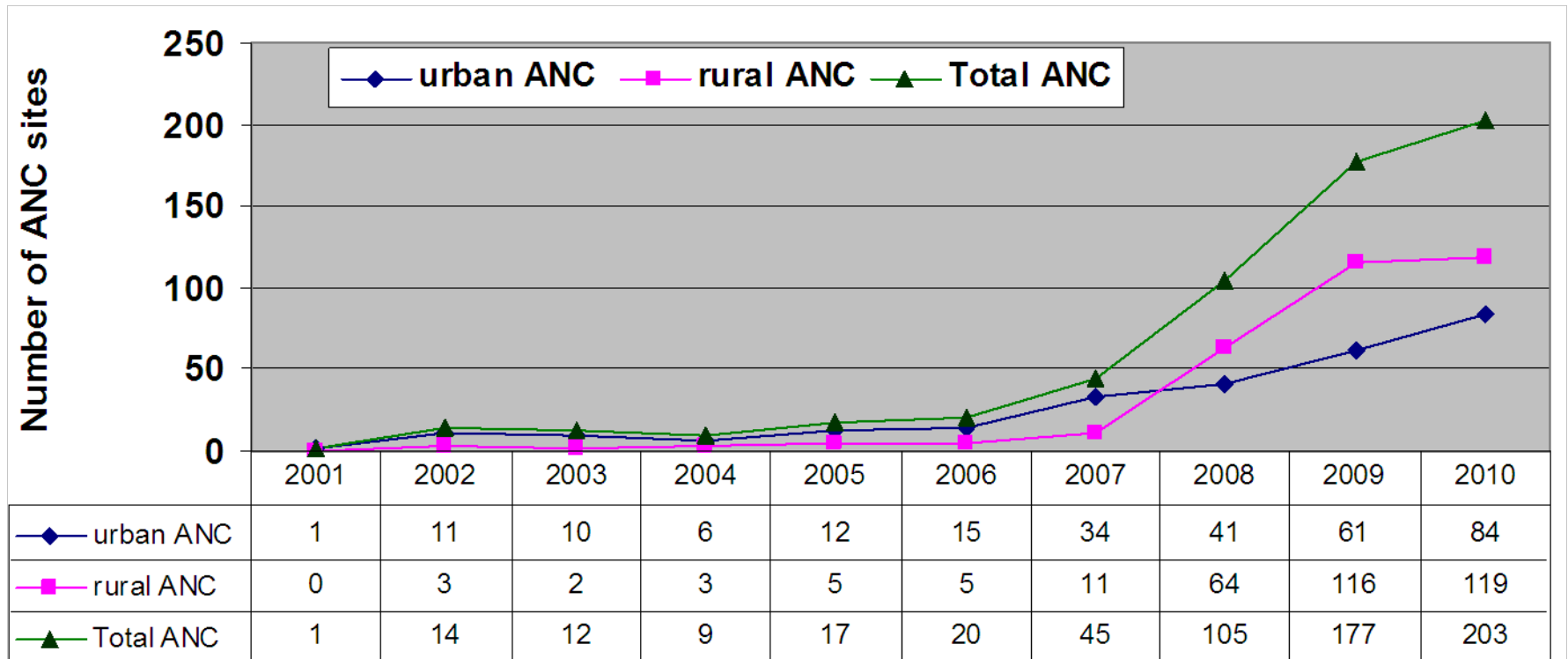
- Hepatitis B vaccination
- HIV testing and treatment
- Male circumcision for HIV prevention

# Hepatitis B vaccine coverage

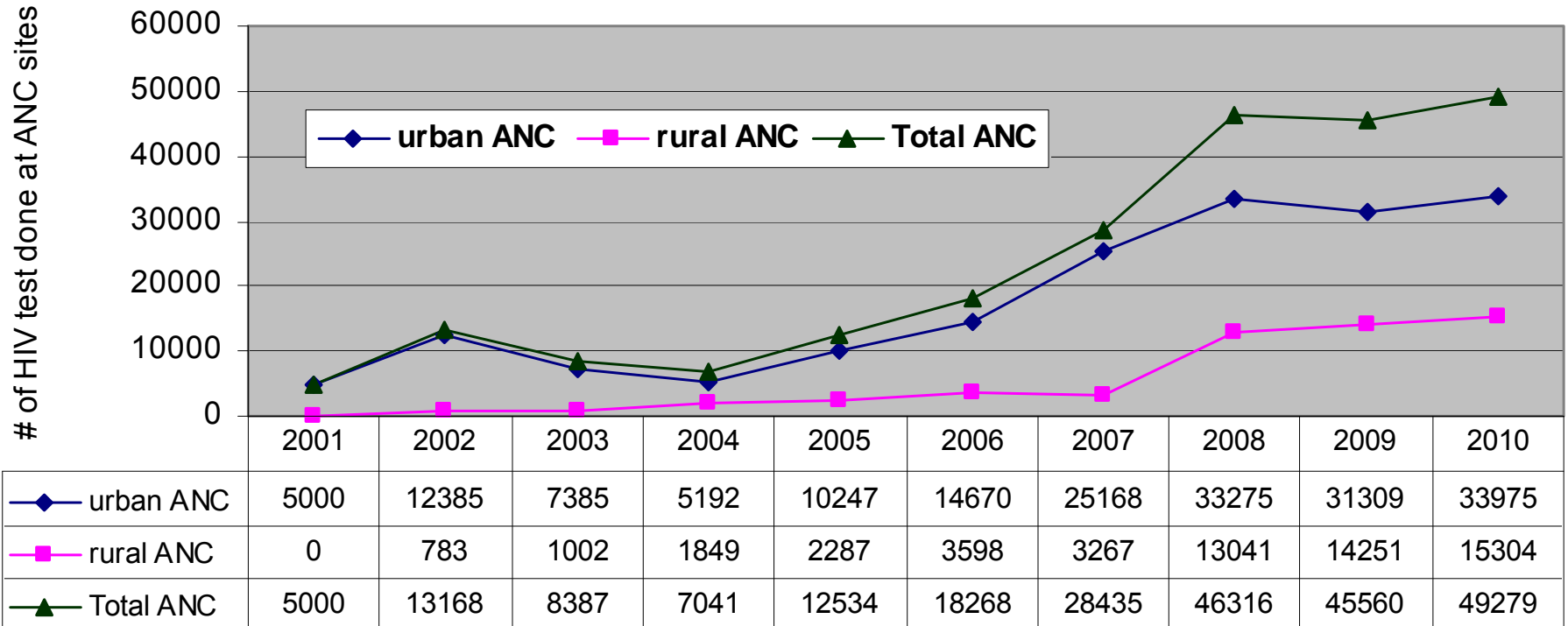


# Male circumcision scale up

# Antenatal clinics and HIV testing in Papua New Guinea

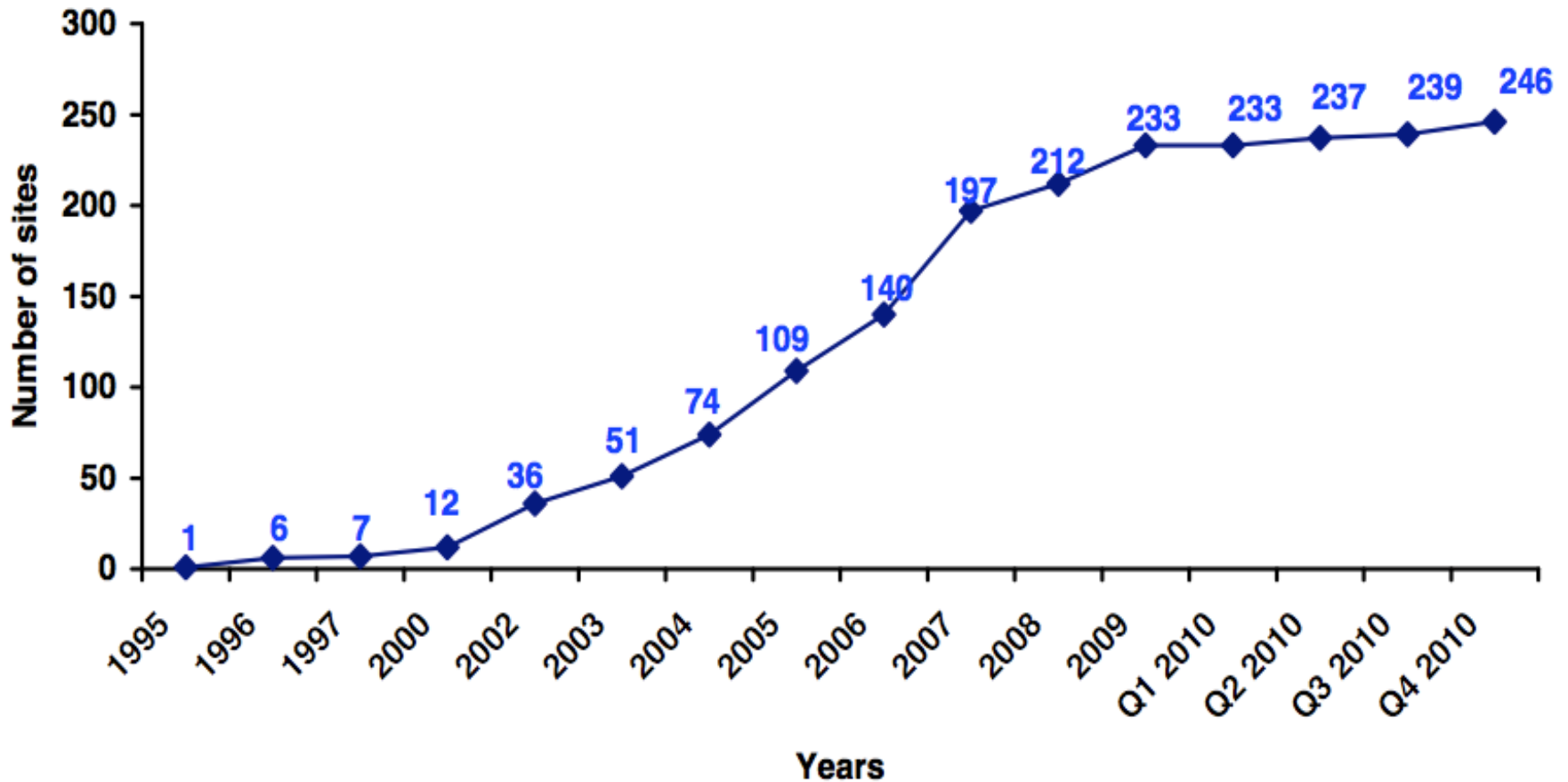


# HIV testing at antenatal clinics in Papua New Guinea

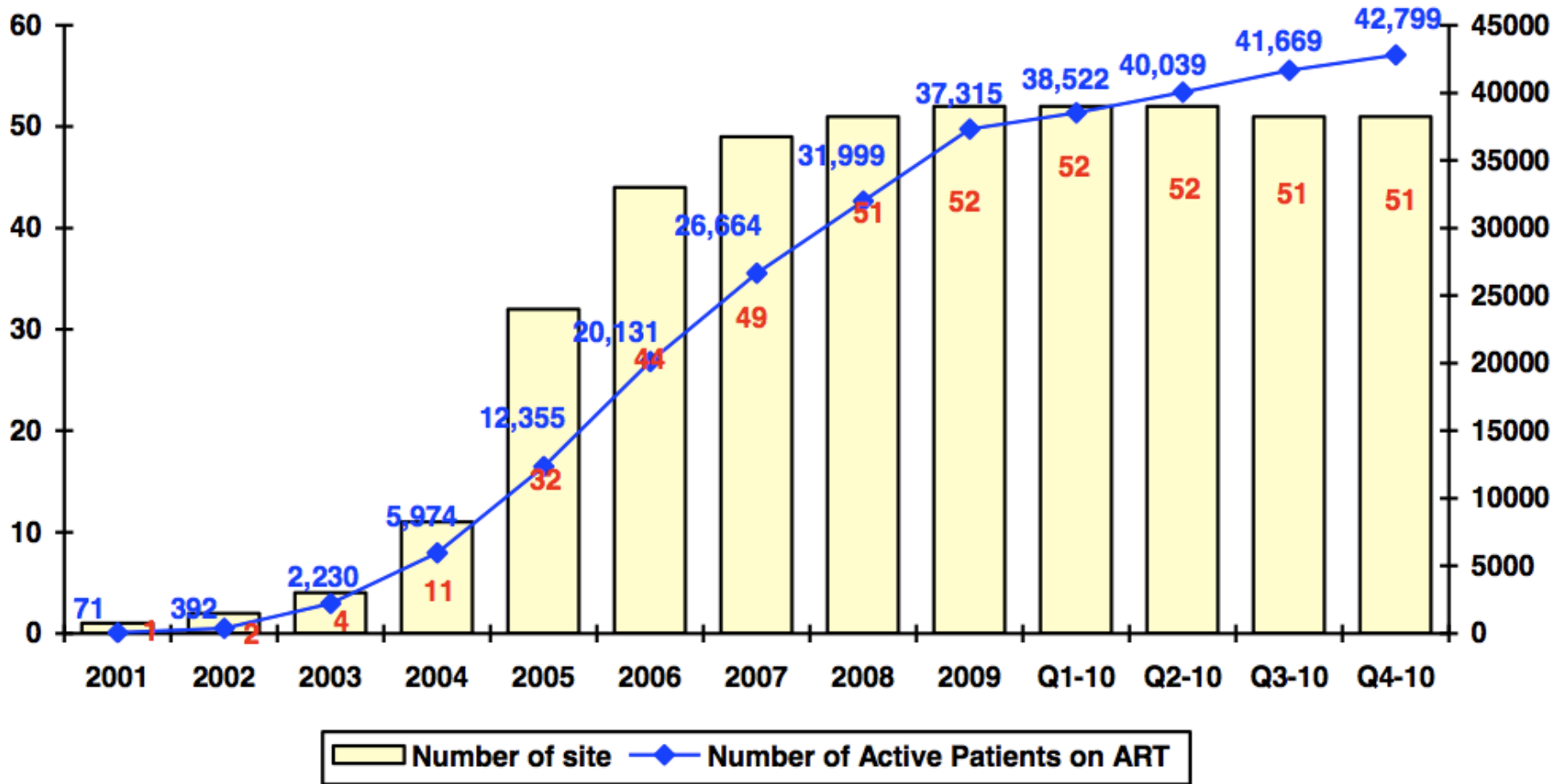


49279 in 2010 include 217 tests which were done for male clients (male partners or husbands). Remaining 49,062 tests were done for pregnant women.

# HIV testing sites in Cambodia



# Antiretroviral treatment in Cambodia



# HPV/cervix cancer research agenda in Papua New Guinea

- Led by PNG Institute of Medical Research
- HPV prevalence and risk factors in antenatal women (N = 1200, four sites)
- HPV prevalence and risk factors at STI clinic attenders (N = 1000, two sites)
- VIA pilot (N = 1000, two sites)
- Qualitative research on understandings of cervix cancer (mixed methods, four sites)



# VIA Study objectives

1. Measure prevalence of VIA-detectable lesions, CIN and HPV among women attending Well Woman clinics
2. To investigate the behavioural and biological risk factors
3. To determine the acceptability of VIA plus cryotherapy among women and their partners, and among health care providers
4. To determine the feasibility of clinical follow-up and review procedures for women who undergo VIA and cryotherapy

# Sik bilong bel study

1. Traditional and contemporary perceptions and beliefs relating to cervical cancer causation, prevention and treatment
2. Knowledge, perceptions and understandings of screening, prevention and treatment for cervical cancer
3. Experiences of women and their families of participating in screening, prevention and treatment programs
4. Acceptability of HPV vaccination for cervical cancer.