

# **Visual inspection is more cost-effective than Pap smears for cervical cancer screening in Honduras**

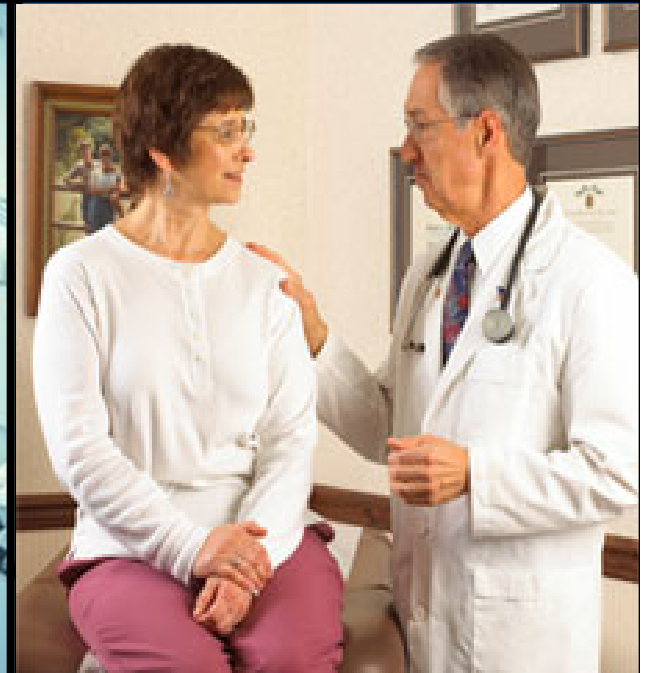
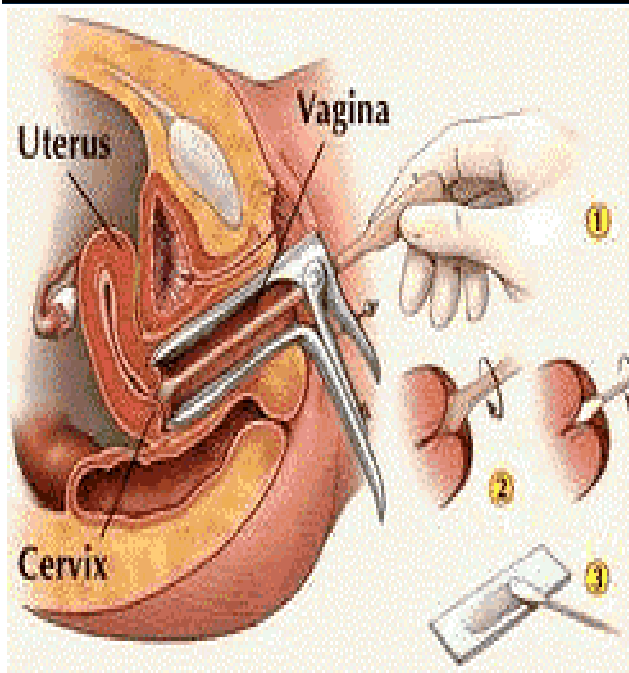
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# Setting: Honduras



- **Second poorest country in Western Hemisphere**
- **Cervical cancer commonest female cancer**
  - **Poor quality screening**
  - **Lack of follow-up**

# Limitations of Pap smears in developing countries



**Clinic**



**Laboratory**



**Patient**

**Expensive**

**Complex  
infrastructure**

**Loss to  
follow-up**

# Visual inspection



**Negative**



**Positive**

Photo source: JHPIEGO

# Visual inspection

## Strengths

- High sensitivity
- Inexpensive
- Combine with immediate treatment

## Limitations

- Low specificity
- Over-referral or over-treatment
- Provider dependent

*Is visual inspection more cost-effective than Pap smears?*

# Cost-Effectiveness Analysis

- Simulated three identical populations of 35 year-old women:
  - Never-screened
  - Visual inspection
  - Pap smears
- Primary outcome variable
  - Cancer prevalence over 10 years
- Computer model

# Parameters from screening study

	<b>Sensitivity</b>	<b>Specificity</b>	<b>Adherence to follow-up</b>	<b>Cost</b>
<b>Visual Inspection</b>	<b>70%</b>	<b>96%</b>	<b>84%</b>	<b>\$0.22</b>
<b>Pap Smear</b>	<b>4%</b>	<b>100%</b>	<b>38%</b>	<b>\$4.06</b>

# Parameters from literature

- **11.5% prevalence of cervical dysplasia**
- **Progression of dysplasia to cancer**
  - **Low-grade: 2.4%**
  - **High-grade: 18%**
- **10% disease recurrence following treatment**



# Results

## Visual Inspection

- Reduced cancer rate by 42%
  - (5.7 vs 3.3/1000)
- \$4,297 per cancer case avoided

## Pap smears

- Reduced cancer rate by 2%
  - (5.7 vs. 5.6/1000)
- \$46,434 per cancer case avoided

# Sensitivity analysis: Pap smear

	<b>Sensitivity</b>	<b>Specificity</b>	<b>Adherence to follow-up</b>	<b>Cost</b>
<b>Baseline rate</b>	4%	100%	38%	\$4.06
<b>Range</b>	4% - 100%	80% - 100%	33% - 100%	\$0.22 - \$4.06

# Sensitivity analysis

- **Pap smear more cost-effective if**
  - 100% sensitivity and specificity
  - 80% adherence to follow-up
- **Visual inspection more cost-effective in all other scenarios**

# Conclusions

**Visual inspection is more cost-effective than Pap smears in developing countries**

**Visual inspection should be supported by local governments and international aid organizations**

# THANK YOU!

