

# **How Research Can Lead to Implementation in Limited Resource Settings: The Case of El Salvador**

IARC - International Agency for Research on Cancer  
Lyon, France June 2016

Mauricio Maza MD, MPH  
Basic Health International

# Conflict of Interest



- I have no commercial relationship with any corporate entity that produces or sells products related to HPV
- Basic Health International has an agreement with the Ministry of Health of El Salvador, to oversee donation program for the QIAGENcares, careHPV implementation program
- Basic Health is Sub grantee of PATH's Scale Up project in Central America

Our Vision: To live in a World where no woman dies of cervical cancer, a preventable disease

Mission: To eradicate cervical cancer globally

THESE ARE COUNTRIES WE HAVE CONSULTED / WORKED ON /SHARED EXPERIENCES  
WE ARE CONSTANTLY TRYING TO LEARN ABOUT PROGRAMS  
EVERY COUNTRY IS DIFFERENT



VIETNAM



DOMINICAN REPUBLIC



NICARAGUA



HONDURAS



MALAWI



RWANDA



INDIA



PERU



HAITI



GUATEMALA



BRAZIL



ANTIGUA AND BARBUDA



CHINA





IDEAL - PRACTICAL - REAL



# VIA screening



Hard to Scale Up and have good QC when considering population based screening

March 2009

WHO guidelines  
Use of cryotherapy for  
cervical intraepithelial neoplasia



The *care*HPV™ Test

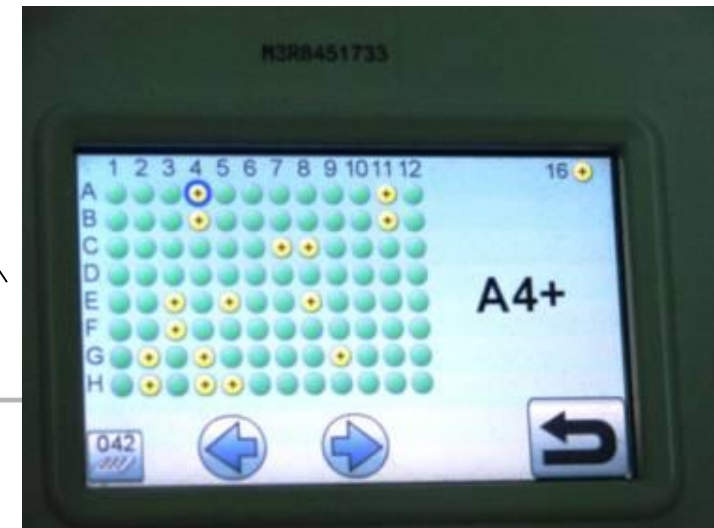
QIAGEN*cares*



BILL & MELINDA  
GATES *foundation*



# Equipment





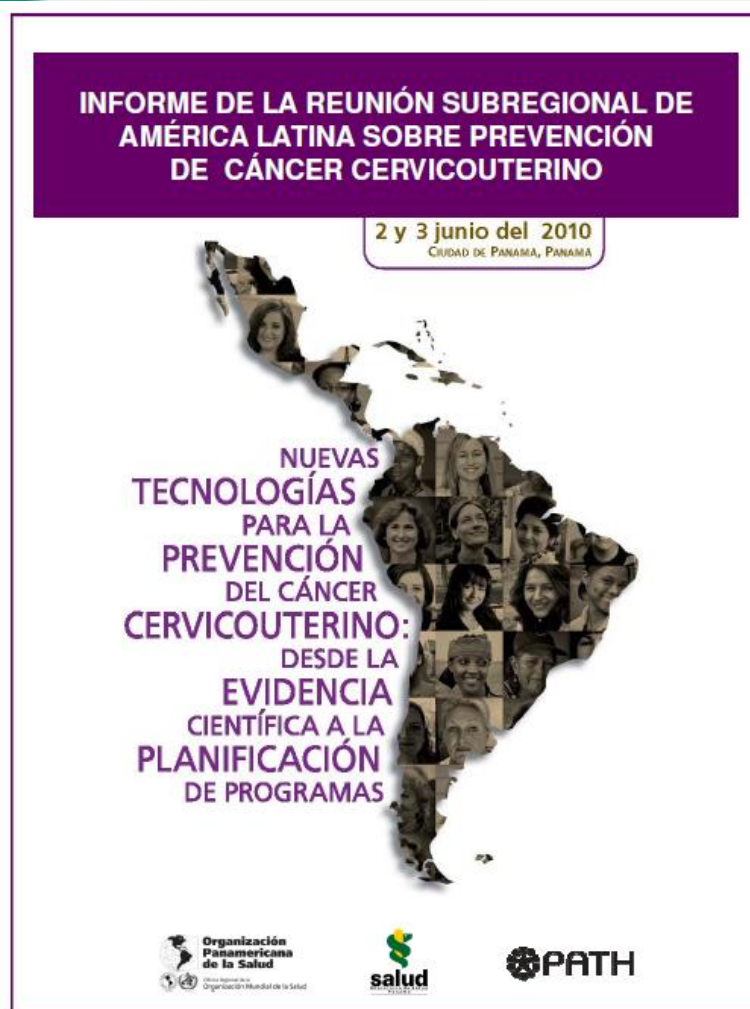
July 2009



February 2010

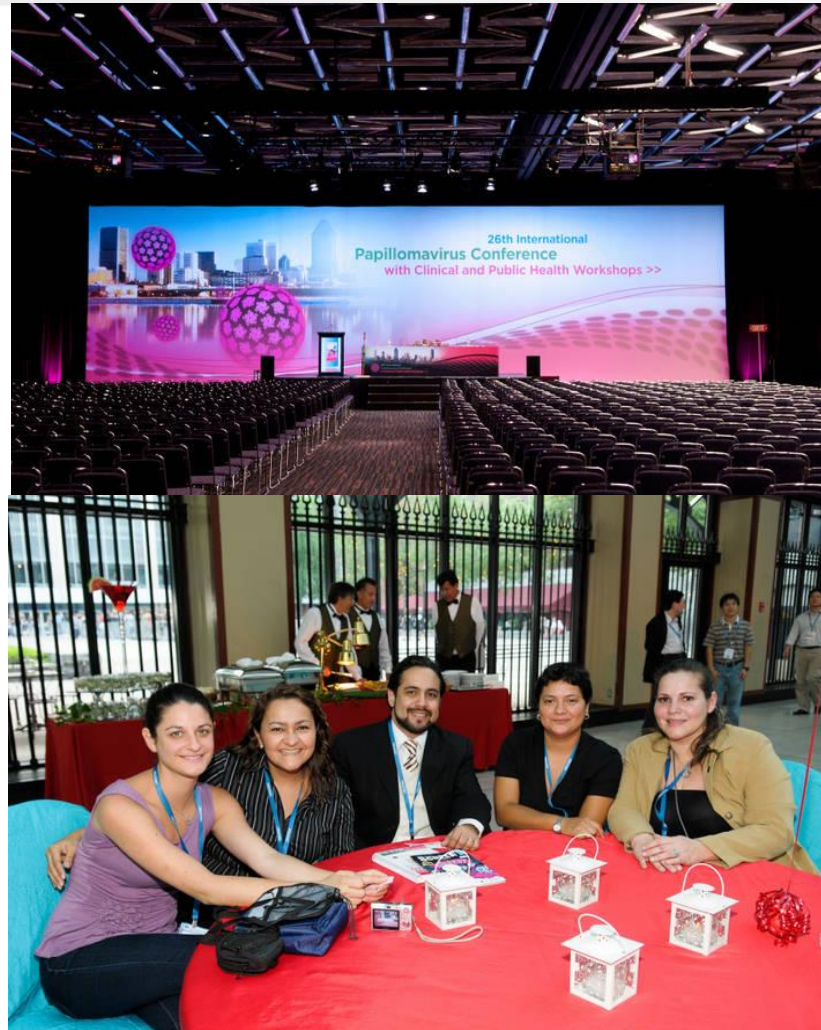


# June 2010



- Argentina, Bolivia y Costa Rica consideraron la puesta en marcha a corto plazo de proyectos demostrativos sobre el test de ADN del VPH, mientras que El Salvador y Honduras plantearon su introducción a medio plazo (2-5 años). México propuso la institucionalización a medio plazo de la estrategia de tamizaje primario mediante detección de VPH y Colombia el establecimiento de un laboratorio de referencia para la prueba.

# July 2010



IDEAL - PRACTICAL - REAL

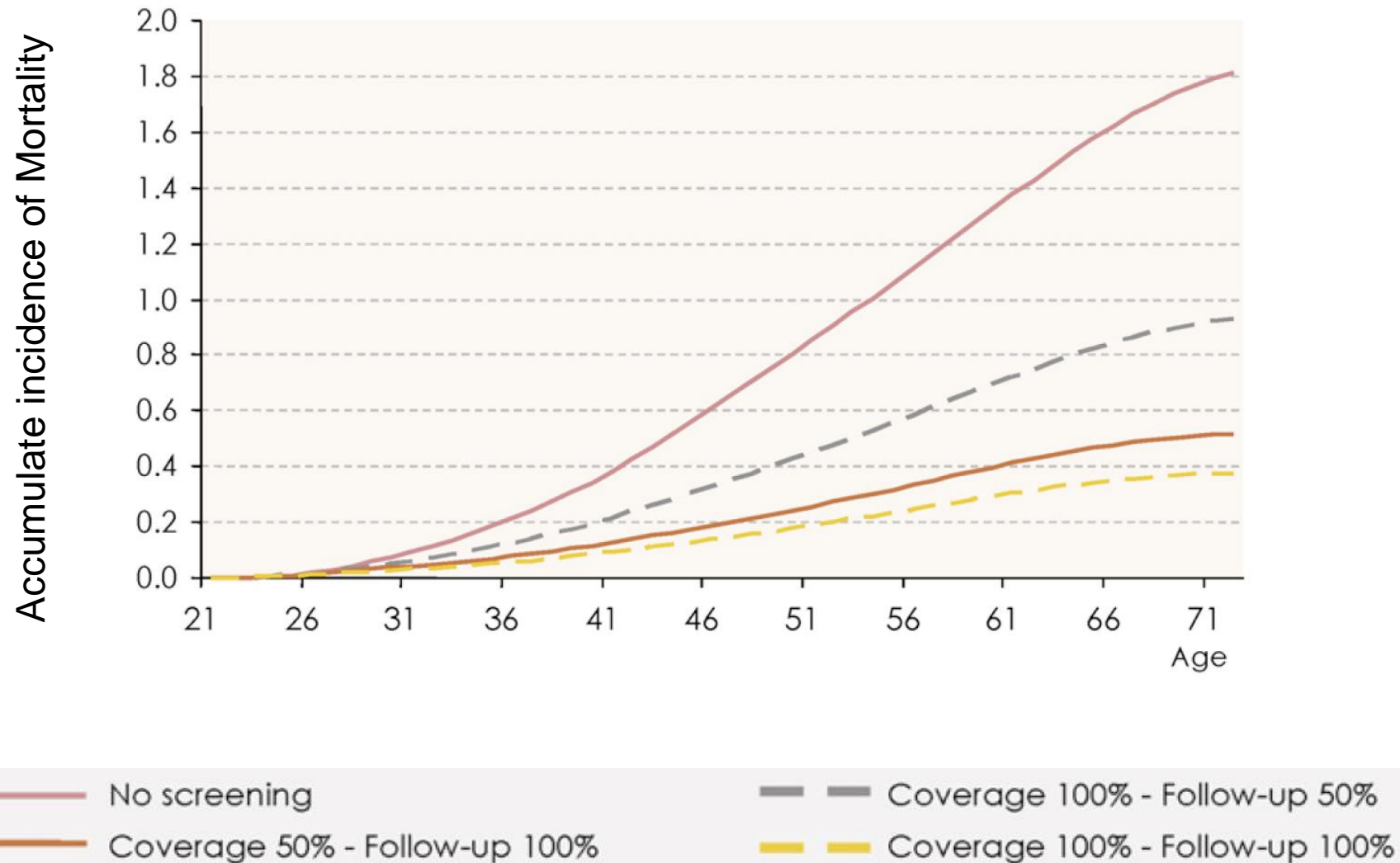




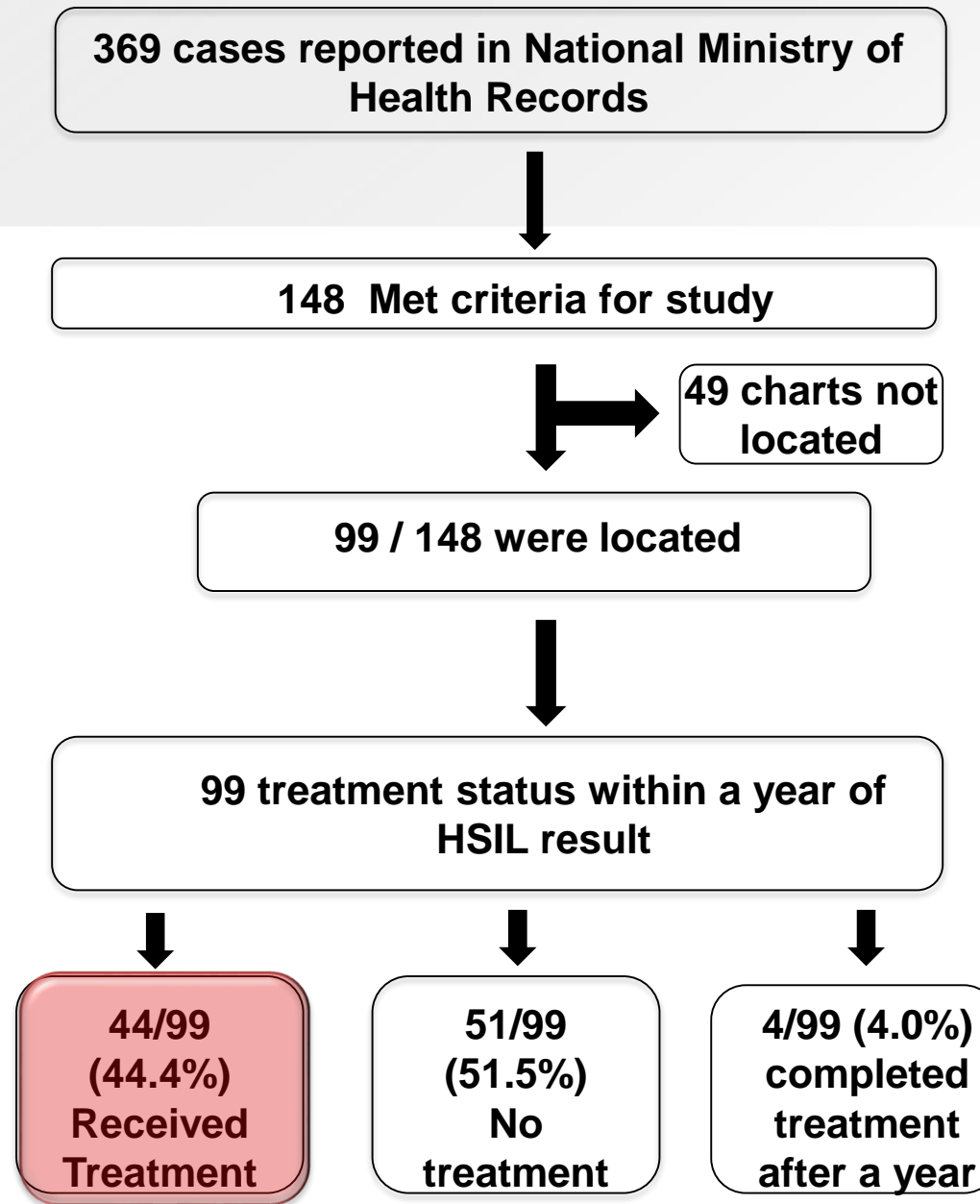
**Table 4**  
Cytological screening coverage in Latin America and the Caribbean

Target population			Women interviewed		Screening		Method of estimation
Country	Year	Region or city	Number of women	Age (years)	Coverage (%)	Interval (years)	
Argentina	2005	National	NS	>18	51.6	2	Survey
Belize <sup>a</sup>	1999	National	4,164	13–49	13.4	1	Survey
Brazil	2002–2005	Capital cities	13,282	25–59	63.4	1	Survey
	2003	National	NS	>24	68.7	3	Survey
	2002	National	2,577	18–69	64.8	3	Survey
	2002	Pelotas	1,198	25–59	68.8	3	Survey
	2000	Sao Paulo	1,050	15–49	77.3	3	Survey
Chile	2003	National	27,000	>15	51.4	3	Survey
	2003	National	–	25–64	66.0	1	SP
	2000	National	–	25–64	64.0	3	SP
	2000	Araucania Sur	–	25–64	56.2	3	SP
Colombia	2005	National	34,674	25–69	50.6	1	Survey
Costa Rica	1999–2000	National	1,612	18–44	37.0	1	Survey
	1991	National	NS	25–58	51.3	1	Survey
Cuba	1993–1994	National	–	>20	54.2	2	SP
Dominican Republic	2002	National	1,389	18–69	54.4	3	Survey
Ecuador	2004	National	10,813	15–49	31.0	2	Survey
		Urban	5,876		35.6		
		Rural	4,938		24.9		
El Salvador	2002	National	10,689	15–49	47.0	1	Survey
	1998	National	–	NS	19.0	3	SP

# Cervical Cancer Reduction



## At 1 year Follow-up



Adherence to recommended follow-up care after high-grade cytology in El Salvador

# Adherence to recommended follow-up care after high-grade cytology in El Salvador

**Table 2.** Step in cervical cancer screening and precancer treatment process where loss to follow-up occurred (n=55)

	n (%)
Did not schedule colposcopy appointment	34 (61.8)
Did not receive Pap results	11 (20.0)
Did not return for biopsy results after abnormal colposcopy	5 (9.1)
Did not complete treatment within 1 year	4 (7.3)
Did not attend colposcopy appointment	1 (1.8)



# EVIDENCE

## A new HPV-DNA test for cervical-cancer screening in developing regions: a cross-sectional study of clinical accuracy in rural China

You-lin Qiao, John W Sellors, Paul S Eder, Yan-ping Bao, Jeanette M Lim, Fang-hui Zhao, Bernhard Weigl, Wen-hua Zhang, Roger B Peck, Ling Li, Feng Chen, Qing-jing Pan, Attila T Lorincz



ORIGINAL CONTRIBUTION

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812

APRIL 2, 2009

VOL. 360 NO. 14

### HPV Screening for Cervical Cancer in Rural India

Rengaswamy Sankaranarayanan, M.D., Bhagwan M. Nene, M.D., F.R.C.P., Surendra S. Shastri, M.D., Kasturi Jayant, M.Sc., Richard Muwonge, Ph.D., Atul M. Budukh, Ph.D., Sanjay Hingmire, B.Sc., Sylla G. Malvi, M.Sc., Ph.D., Ranjit Thorat, B.Sc., Ashok Kothari, M.D., Roshan Chinoy, M.D., Rohini Kelkar, M.D., Shubhada Kane, M.D., Sangeetha Desai, M.D., Vijay R. Keskar, M.S., Ragheendra Rajeshwarkar, M.D., Nandkumar Panse, B.Com., and Ketayun A. Dinshaw, M.D., F.R.C.R.

### SPECIAL ARTICLE

## Cost-Effectiveness of Cervical-Cancer Screening in Five Developing Countries

Sue J. Goldie, M.D., M.P.H., Lynne Gaffikin, Dr.P.H., Jeremy D. Goldhaber-Fiebert, A.B., Amparo Gordillo-Tobar, M.D., Ph.D., Carol Levin, Ph.D., Cédric Mahé, Ph.D., and Thomas C. Wright, M.D., for the Alliance for Cervical Cancer Prevention Cost Working Group\*

## Screen-and-Treat Approaches for Cervical Cancer Prevention in Low-Resource Settings: A Randomized Controlled Trial

Lynette Denny, MD, PhD  
Louise Kuhn, PhD  
Michelle De Souza, MD  
Amy E. Pollack, MD, MPH  
William Dupree, MD  
Thomas C. Wright, Jr, MD

**Context** Non-cytology-based screen-and-treat approaches for cervical cancer prevention have been developed for low-resource settings, but few have directly addressed efficacy.

**Objective** To determine the safety and efficacy of 2 screen-and-treat approaches for cervical cancer prevention that were designed to be more resource-appropriate than conventional cytology-based screening programs.

**Design, Setting, and Patients** Randomized clinical trial of 6555 nonpregnant women, aged 35 to 65 years, recruited through community outreach and conducted between June 2000 and December 2002 at ambulatory women's health clinics in Khayelitsha, South Africa.

**Interventions** All patients were screened using human papillomavirus (HPV) DNA testing and visual inspection with acetic acid (VIA). Women were subsequently randomized to 1 of 3 groups: cryotherapy if she had a positive HPV DNA test result; cryotherapy if she had a positive VIA test result; or to delayed evaluation.

**Main Outcome Measures** Biopsy-confirmed high-grade cervical cancer precursor lesions and cancer at 6 and 12 months in the HPV DNA and VIA groups compared with the delayed evaluation (control) group; complications after cryotherapy.

**Results** The prevalence of high-grade cervical intraepithelial neoplasia and cancer (CIN 2+) was significantly lower in the 2 screen-and-treat groups at 6 months after randomization than in the delayed evaluation group. At 6 months, CIN 2+ was diagnosed in 0.80% (95% confidence interval [CI], 0.40%-1.20%) of the women in the HPV DNA group and 2.23% (95% CI, 1.57%-2.89%) in the VIA group compared with 3.55% (95% CI, 2.71%-4.39%) in the delayed evaluation group ( $P<.001$  and  $P=.02$  for the HPV DNA and VIA groups, respectively). A subset of women underwent a second colposcopy 12 months after enrollment. At 12 months the cumulative detection of CIN 2+ among women in the HPV DNA group was 1.42% (95% CI, 0.88%-1.97%), 2.91% (95% CI, 2.12%-3.69%) in the VIA group, and 5.41% (95% CI, 4.32%-6.50%) in the delayed evaluation group. Although minor complaints, such as discharge and bleeding, were common after cryotherapy, major complications were rare.

**Conclusion** Both screen-and-treat approaches are safe and result in a lower prevalence of high-grade cervical cancer precursor lesions compared with delayed evaluation at both 6 and 12 months.

**Trial Registration** Clinicaltrials.gov Identifier: NCT00233727.

JAMA. 2009;294:2182-2191.

www.jama.com

**Author Affiliations:** Department of Obstetrics and Gynecology, University of Cape Town, Cape Town, South Africa (Dr Denny and Dr Kuhn); Corrado H. Saragovitz Center and Departments of Epidemiology (Dr Kuhn) and Pathology (Dr Weigl), Columbia University, New York, NY; EngenderHealth, New York, NY (Dr Pollack); and HealthNetwork Laboratory, Allentown, Pa (Dr Dupree).  
**Corresponding Author:** Thomas C. Wright, Jr, MD, Department of Pathology, Room 16-404, P&S Bldg, 620 W 168th St, New York, NY 10032 (tcw1@columbia.edu).

See also pp 2182, 2210, and 2225.

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(Reprinted) JAMA, November 2, 2005—Vol 294, No. 17 2173

## Human Papillomavirus–Based Cervical Cancer Prevention: Long-term Results of a Randomized Screening Trial

Lynette Denny, Louise Kuhn, Chih-Chi Hu, Wei-Yann Tsai, Thomas C. Wright Jr

# DEMONSTRATION PROJECT

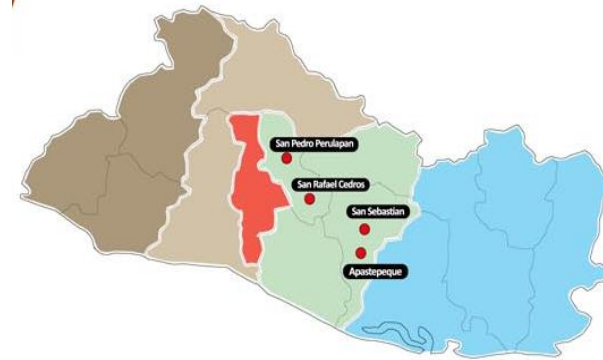


Propuesta para la Implementación de  
**careHPV**  
en El Salvador:  
Fase 1. Definiendo el Algoritmo de Tratamiento

**PRESENTADO POR:**  
UNIDAD DE ATENCIÓN INTEGRAL E INTEGRADA A LA SALUD SEXUAL Y REPRODUCTIVA  
MINISTERIO DE SALUD DE EL SALVADOR

# Background

- CAPE PROJECT (Cervical Cancer Prevention in El Salvador)
- Project is 3 phases which will screen 30,000 women between 2012 y 2015
  - Phase 1:
    - October 2012 - March 2013
    - 2,000 women, 4 municipalities / main health clinics
  - Phase 2:
    - September 2013 - May 2014
    - 8,000 women, 4 municipalities, 16 additional health houses or community clinics
  - Phase 3:
    - July 2014 – December 2015
    - 20,000 women, 1/5 of country

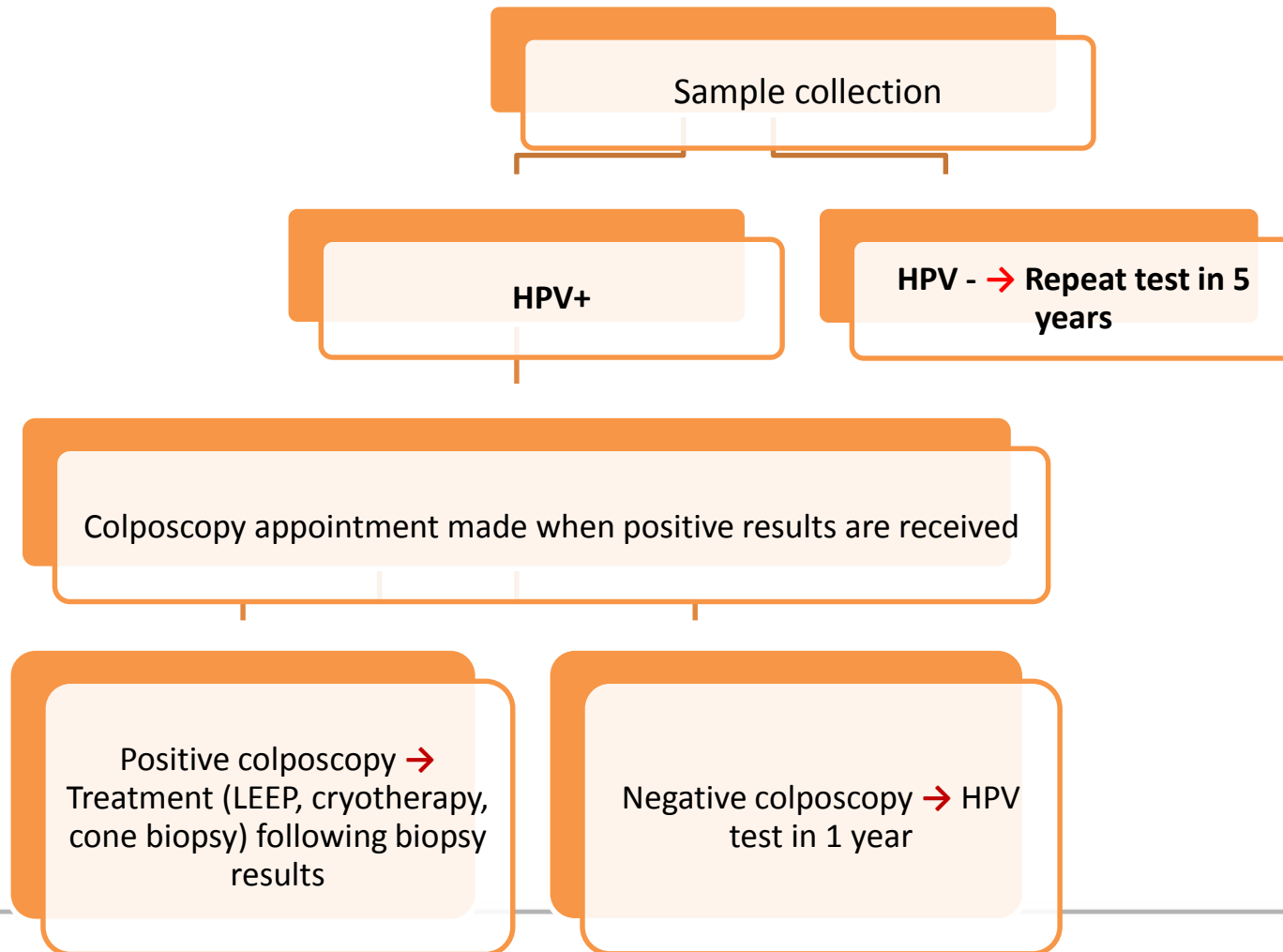


# October 2012

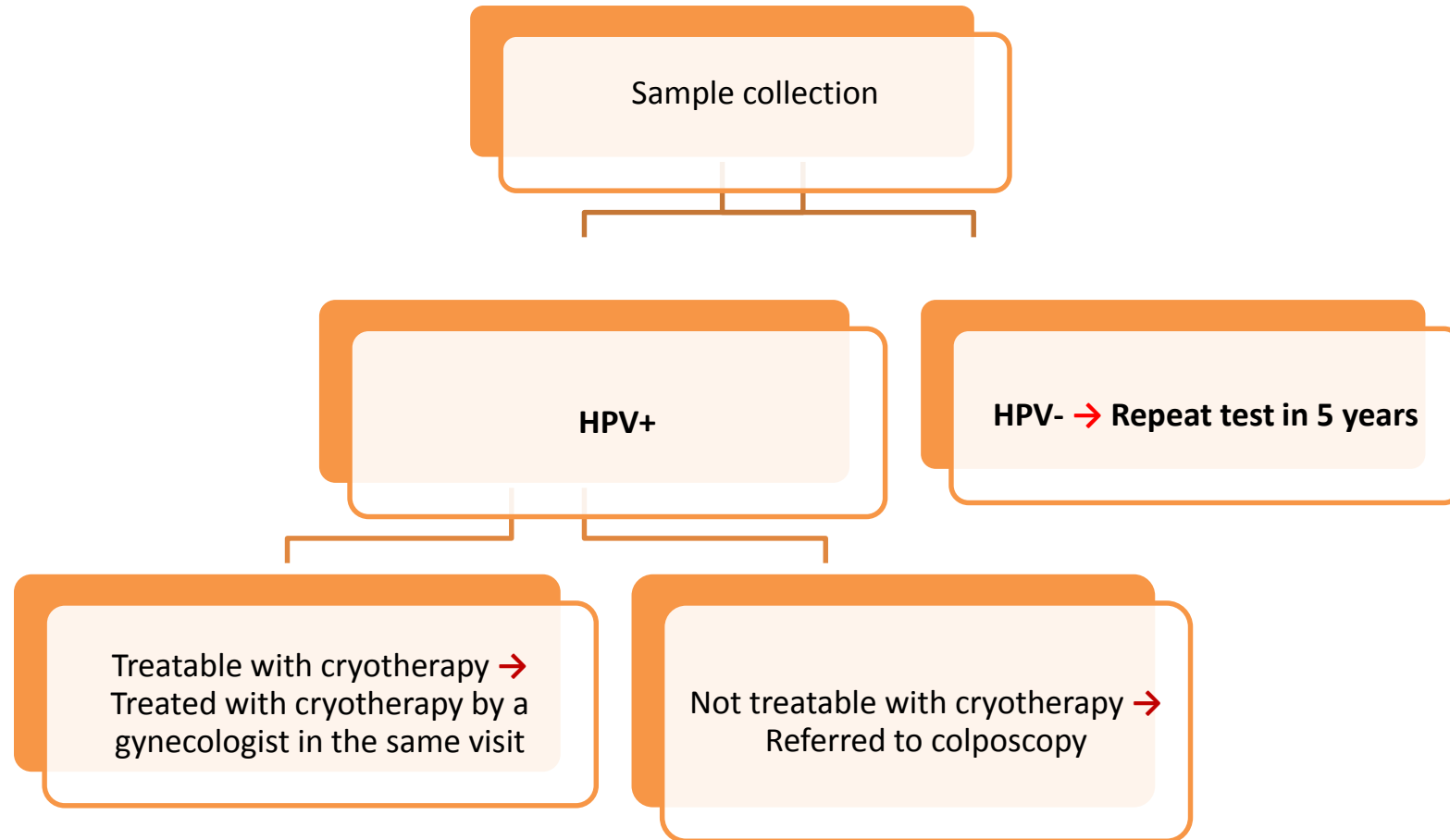




# Cohort A: Colposcopy referral (standard of care)



# Cohort B: Screen and Treat (Innovation)



# RESULTS

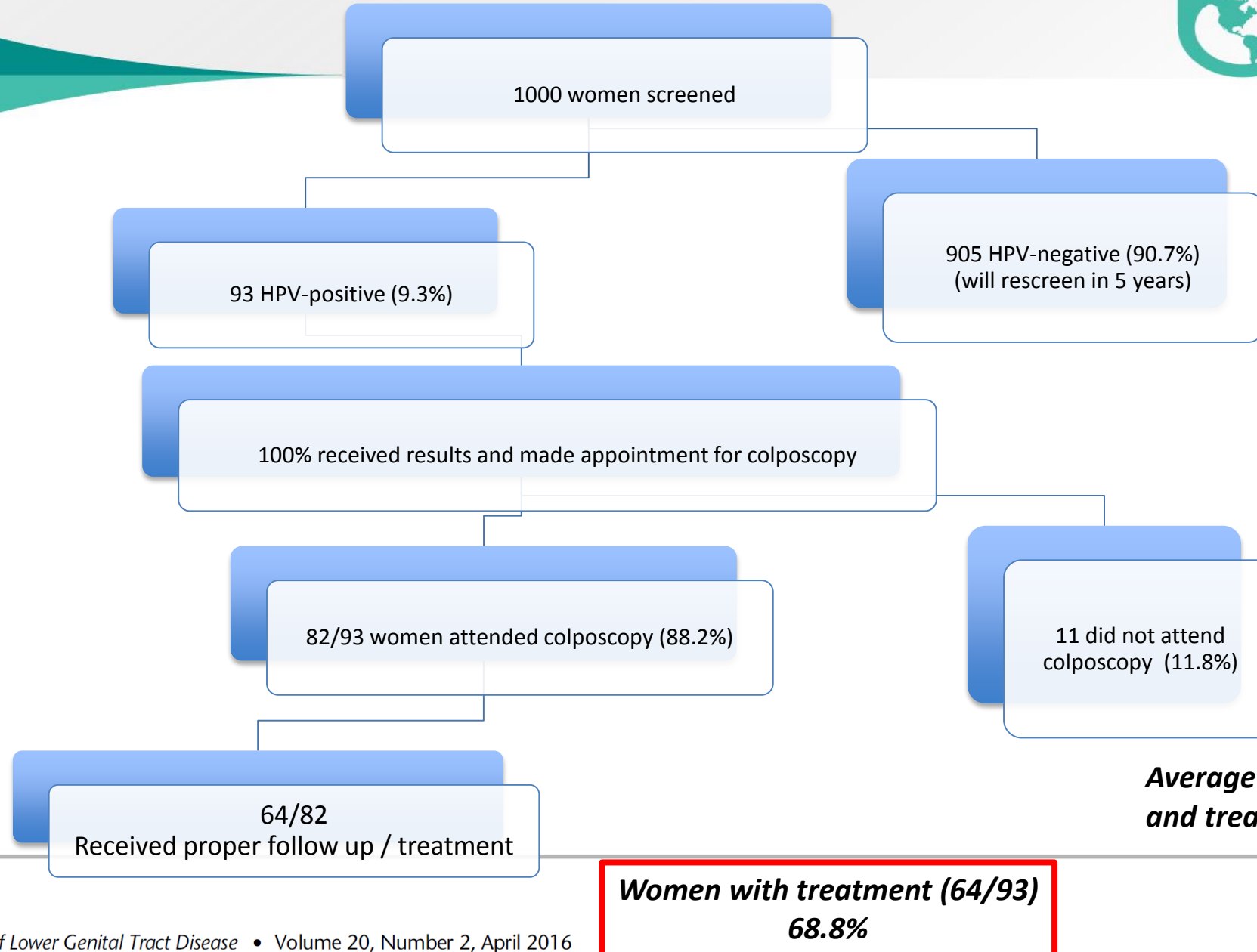


**Average time between  
results and colpo= 50 days**

## COHORT A (Screen and Refer to Colposcopy)



**At 6 Month Follow-up**

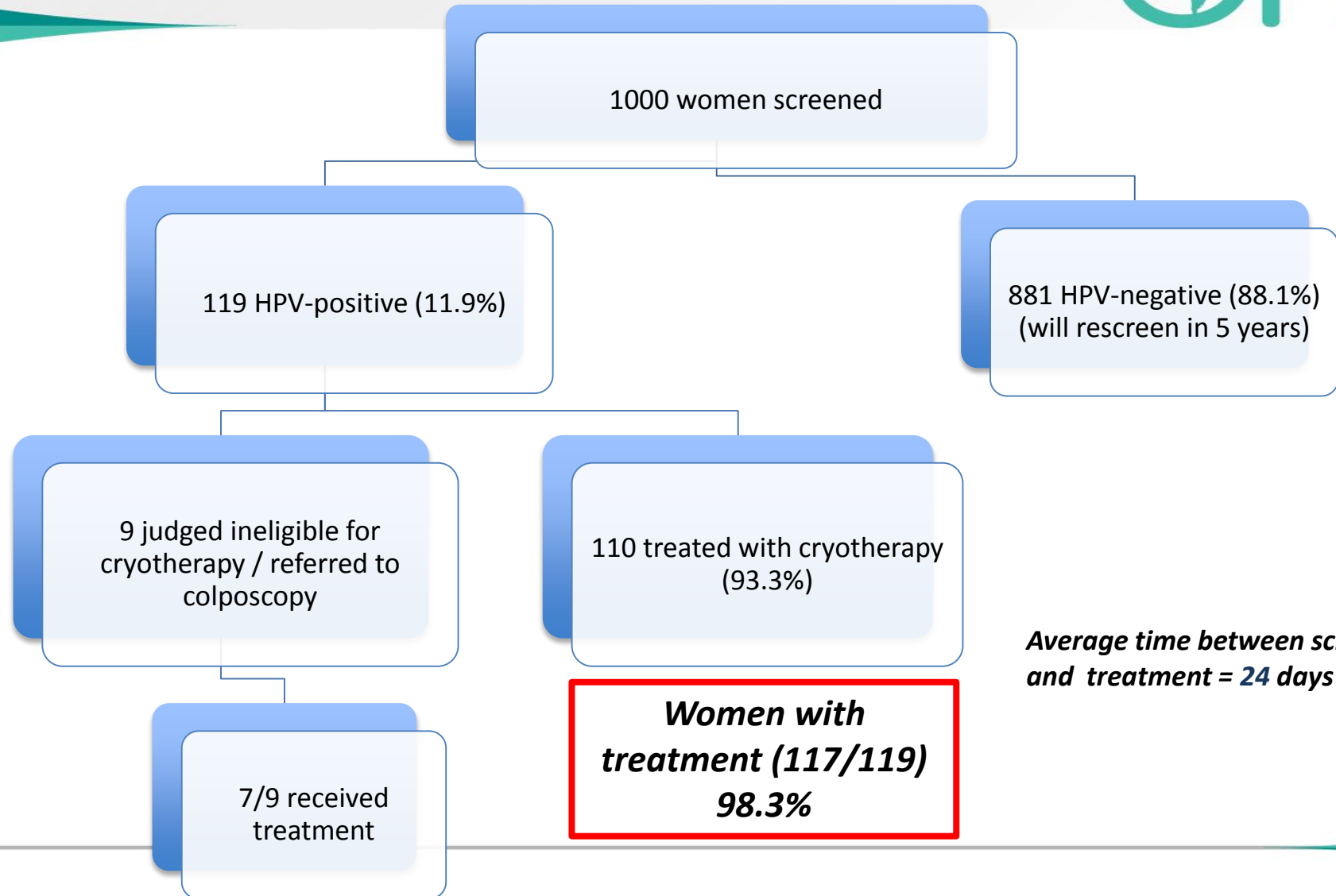


**Average time between biopsy  
and treatment= 48 days**



# COHORT B (Screen and Treat with cryotherapy)

At 6 Month Follow-up



*Average time between screening and treatment = 24 days*

# Pathology Review Phase 1

**TABLE 3.** Worst Histopathology Result of Biopsy by Local and Expert Pathologists

Worst diagnosis by expert pathologist	Worst diagnosis by local pathologist				Total
	Normal	CIN 1	CIN 2	CIN 3	
Normal	2	57	1	1	61
CIN 1	0	6	0	0	6
CIN 2	0	8 <sup>a</sup>	0	0	8
CIN 3	0	5 <sup>b</sup>	1	3 <sup>c</sup>	9
Adenocarcinoma	0	1	1 <sup>d</sup>	0	2
Missing	1	2	0	0	3
Total	3	79	3	4	89



# Cervical Cancer Prevention in El Salvador: Costs and Cost-Effectiveness of careHPV testing (Phase I)

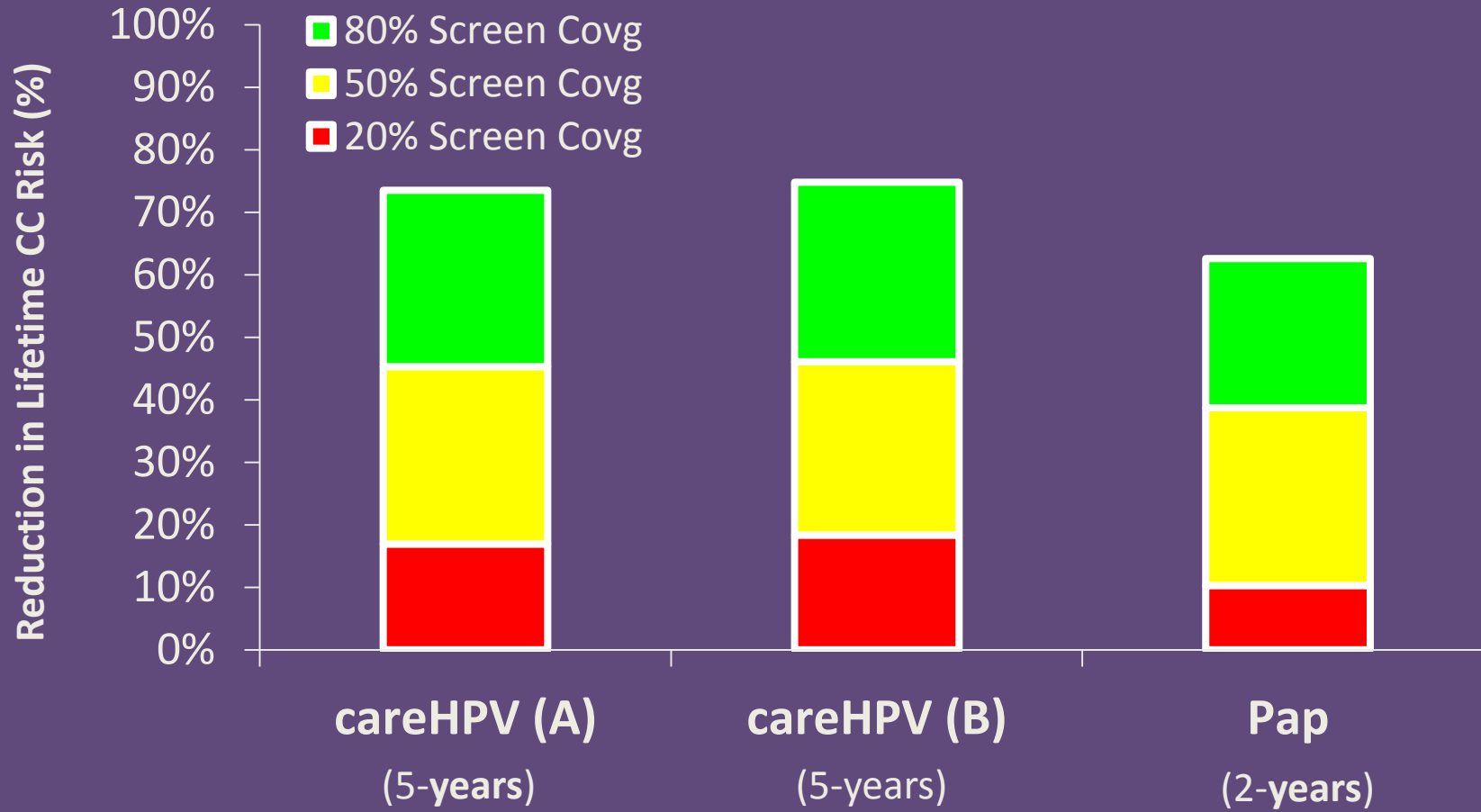
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Jane J. Kim, Ph.D.  
Nicole G. Campos, Ph.D.



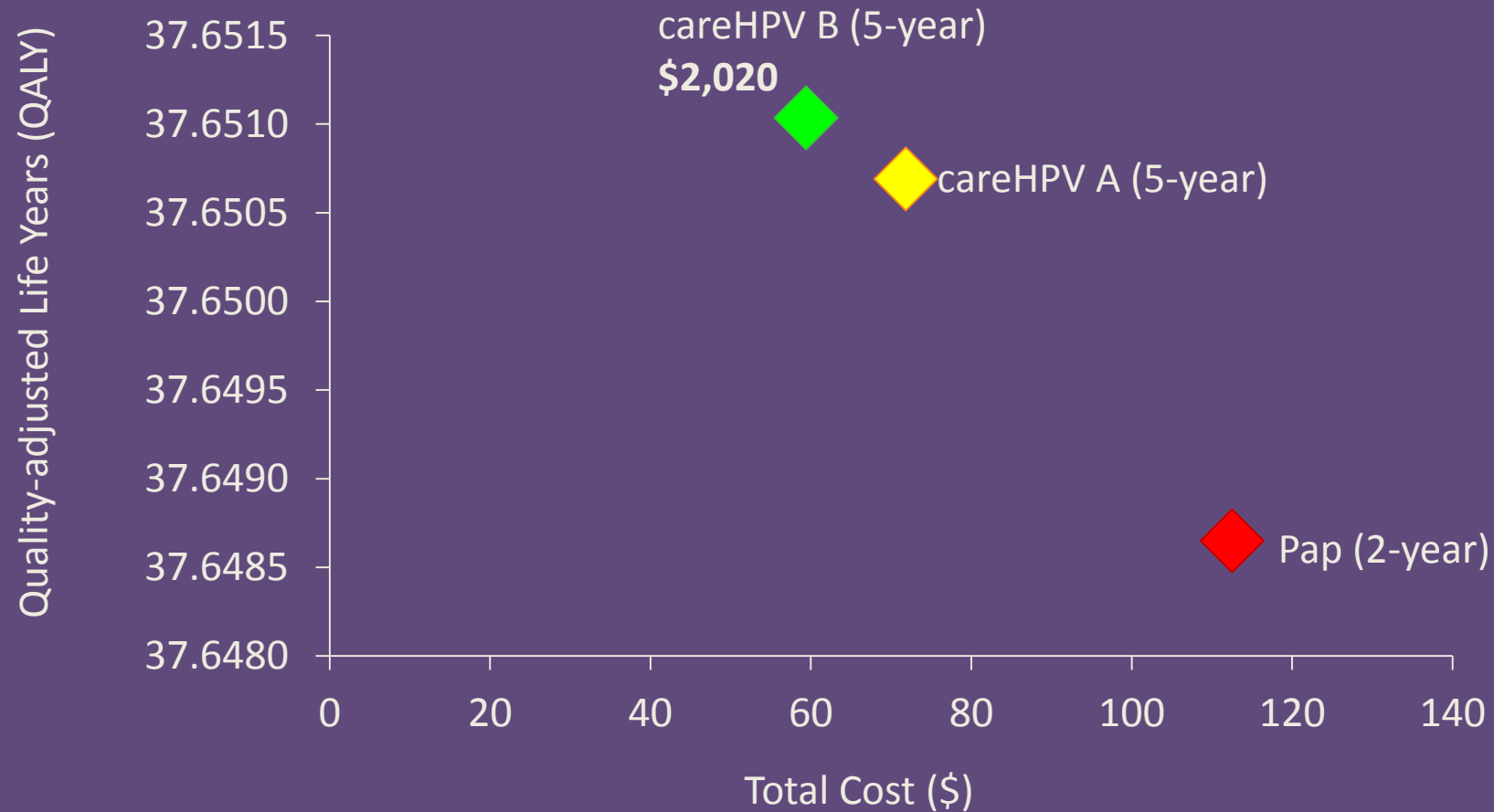
Center for Health Decision Science  
Harvard School of Public Health  
718 Huntington Avenue, Boston, MA 02115

# Cancer Risk





# Cost Effectiveness Results



# Summary of Key Findings from Phase I



- Screening with careHPV provides *greater health benefits* than current Pap smear screening.
- Routine screening with careHPV (every 5y) is *cost-effective* compared to Pap testing (every 2y) at a cost-effectiveness threshold of 1x-3x GDP per capita.
- Screening with careHPV followed by visual triage (cohort B) is *more effective and less costly* than careHPV with colposcopy triage (cohort A).

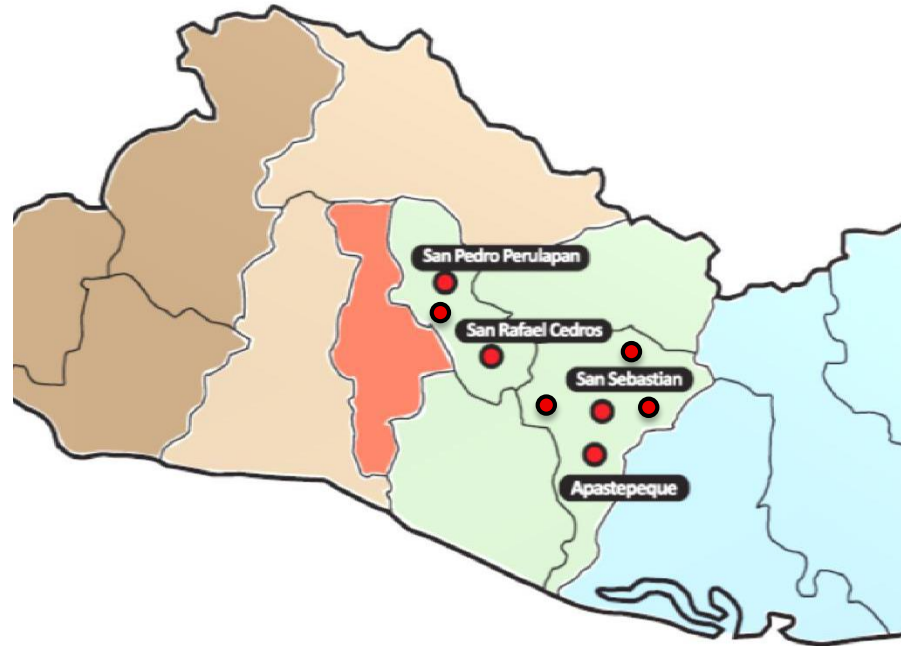


# CAPE Phase 2



- Determine most effective follow-up method for HPV+ women
- 8 communities involved
- Target population:
  - women age 30-49
  - no history of screening in > 3 years

hnic Area



its

region    Central Region    Metropolitan Region    Paracentral Region

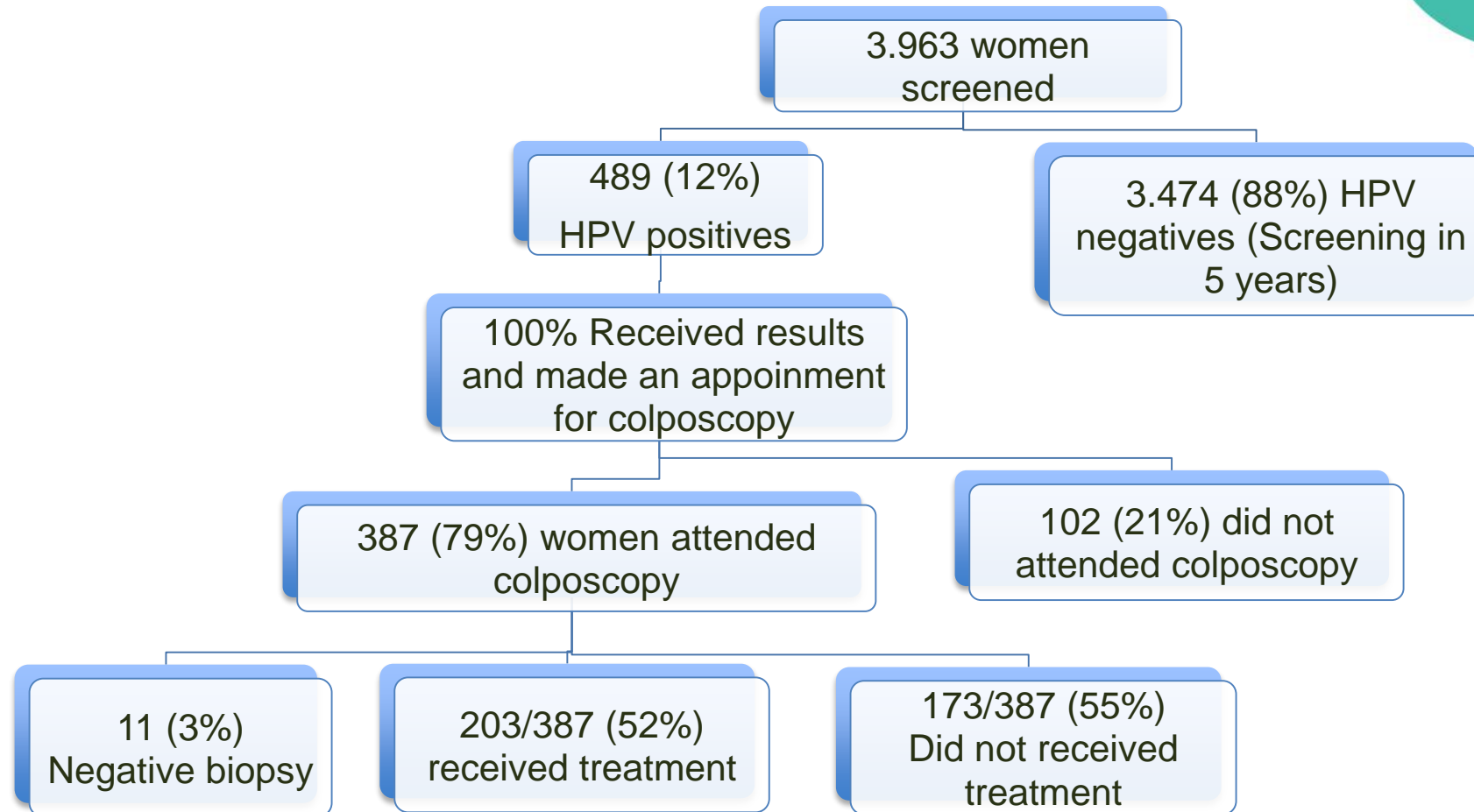
anhic Area for the Project





# COHORT A

## (Screen and Refer to Colposcopy)

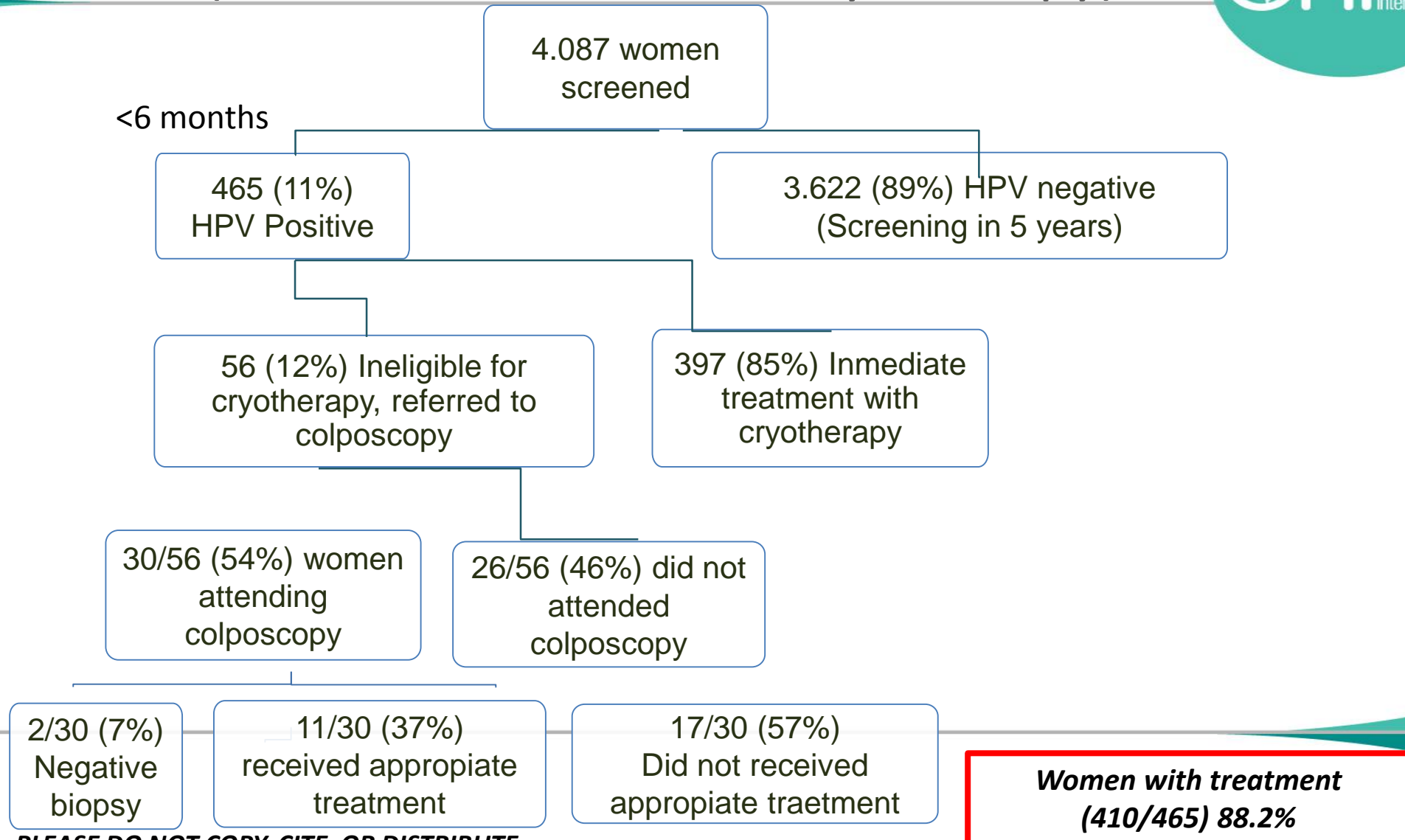


**Women with treatment 41.5%  
(203/489)**



# COHORT B

## (Screen and Treat with cryotherapy)



## Worst histopathology result of biopsy by local and expert pathologists

Worst diagnosis by expert pathologist	Worst diagnosis by local pathologist					Total	%
	Normal	CIN1	CIN2	CIN3	Carcinoma		
Normal	14	360	17	1	0	392	74.1%
CIN1	0	24	3	0	0	27	5.1%
CIN2	2	35	6	3	0	46	8.7%
CIN3/AIS	0	22	12	29	0	63	11.9%
Carcinoma	0	0	0	0	1	1	0.2%
Total	16 (3%)	441 (83.4%)	38 (7.2%)	33 (6.2%)	1 (0.2%)	529	

## Accuracy of Histopathology in a Regional Cervical Cancer Screening Program in El Salvador

Julia C. Gage<sup>1\*</sup>, Juan Felix<sup>2</sup>, Mario Morales<sup>3</sup>, Mauricio Maza<sup>4</sup>,  
Karla Alfaro<sup>4</sup>, Philip E. Castle<sup>5</sup>, Jane Kim<sup>6</sup>, Rachel Masch<sup>7</sup>, Proma Paul<sup>8</sup>, Miriam Cremer<sup>9</sup>

NOW WE HAVE RESULTS  
NOW WE HAVE OUR OWN EVIDENCE  
NOW WE CAN JUSTIFY CHANGE

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# Change the Paradigm



Meeting



Meeting

Meeting

Meeting



Meeting

Meeting



Meeting

Meeting

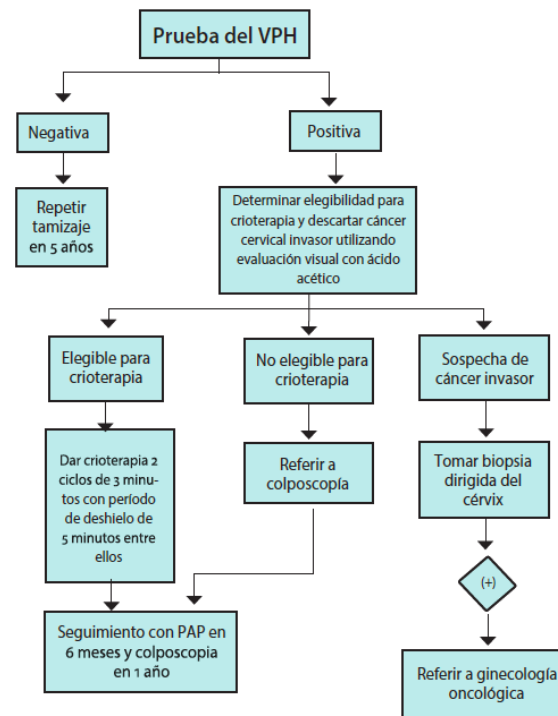


## Lineamientos técnicos para la prevención y control del cáncer cérvico uterino y de mama



### Flujograma n.º 2

Tamizaje con una prueba de detección de VPH seguida de evaluación visual con ácido acético y tratamiento



Criterios de elegibilidad para crioterapia:

1. Que lesión se observe en su totalidad
2. Que lesión sea cubierta por la punta de la criosonda

Fuente: Adaptación de flujograma de OPS. "Prevención de cáncer Cérvico uterino. Estrategias para el Tamizaje y Tratamiento de las Lesiones Precancerosas." 2013



# Educational Material



## TOMA POR PROVEEDOR DE SALUD



### Materiales a utilizar para toma de la muestra



### Procedimiento para la toma por proveedor de salud

- La paciente deberá recostarse en la mesa ginecológica con las piernas colocadas sobre los estribos.
- El examinador, le colocará un espéculo.
- El examinador tomará la muestra con el cepillo de aire.
- El examinador retirará el espéculo.



# Screening Forms



PROGRAMA NACIONAL DE PREVENCIÓN Y CONTROL DE CÁNCER GINECO UTERINO  
EL SALVADOR, C.A.

**SOLICITUD Y REPORTE DE CITOLOGÍA CÉRVICO VAGINAL**

Nombre del Establecimiento: HNEC No. 7A

PRIMER APELLIDO: [REDACTED] SEGUNDO APELLIDO: [REDACTED] NOMBRES: [REDACTED] DUI: [REDACTED]

URBANO ☐ RURAL ☒ OTRO ☐

FECHA DE NACIMIENTO: [REDACTED] EDAD: [REDACTED] No. EXPEDIENTE: 00037892 No. CITOLOGÍA: 9/10/14 FECHA TOMA DE MUESTRA: 9/10/14

**DATOS CLÍNICOS**

G. 6 P. 6 A. V3 FUR 4/10/14 FUP 25/8/08

LACTANCIA SI ☐ NO ☒ ANTICONCEPTIVOS SI ☐ NO ☒ TIPO AOC ☐ INV ☐ DIU ☐ OTRO ☐

LEUCORREA SI ☐ NO ☒ SANGRADO SI ☐ NO ☒ CERVICITIS SI ☐ NO ☒

Tto: Crio ☐ LEEP ☐ CONO ☐ HISTERECTOMÍA ☐ RADIACIÓN ☐ HORMONAL ☐

FECHA 2/10/14 BIOPSIA SI ☐ NO ☒

RESULTADO depr. inv.

FIRMA Y SELLO RESPONSABLE TOMA PAP: [Firma]

**CALIDAD DE LA MUESTRA**

☒ SATISFACTORIA PARA EVALUACIÓN  
☐ INSATISFACTORIA PARA EVALUACIÓN (ESPECIFICAR):  
☐ PROCESADA ☐ NO PROCESADA POR:

☐ CELULARIDAD ADECUADA  
☐ FIJACIÓN O PRESERVACIÓN INADECUADA  
☐ MATERIAL EXTRAÑO

**ORGANISMOS**

☐ TRICOMONAS VAGINALES  
☐ MICROORGANISMOS MICÓTICOS CONSISTENTES CON CÁNDIDA SP  
☐ MICROORGANISMOS MICÓTICOS CONSISTENTES CON TORULOPSIS SP  
☐ CAMBIOS EN LA FLORA SUGESTIVOS DE VAGINOSIS BACTERIANA  
☐ CAMBIOS CELULARES ASOCIADOS A HERPES SIMPLEX  
☐ OTROS

**CAMBIOS CELULARES REACTIVOS ASOCIADOS A:**

☐ RADIACIÓN  
☒ INFLAMACIÓN

**OTROS**

☐ ATROFIA  
☐ CÉLULAS GLANDULARES POST HISTERECTOMÍA  
☐ CÉLULAS ENDOMETRIALES EN IGUAL O MAYOR A 40 AÑOS

**ANORMALIDADES DE LA CÉLULA ESCAMOSA**

CÉLULAS ESCAMOSAS ATÍPICAS ☐ ASC - US ☐ ASC - H

☐ LEI DE BAJO GRADO  
☒ LEI DE ALTO GRADO  
☐ CON HALLAZGOS SOSPECHOSOS DE INVASIÓN  
☐ CARCINOMA DE CÉLULAS ESCAMOSAS

**OTRAS NEOPLASIAS MALIGNAS**

Referir a Colposcopia

**ANORMALIDADES DE LA CÉLULA GLANDULAR**

CÉLULAS GLANDULARES ATÍPICAS ☐ ENDOCERVICALES ☐ ENDOMETRIALES ☐ ORIGEN NO DETERMINADO ☐ ENDOCERVICALES FAVORECEN NEOPLASIA ☐ GLANDULARES FAVORECEN NEOPLASIA

☐ ADENOCARCINOMA ENDOCERVICAL IN SITU  
☐ ADENOCARCINOMA ☐ ENDOCERVICAL ☐ EXTRAUTERINO ☐ SIN ESPECIFICAR

**OTRAS NEOPLASIAS MALIGNAS**

OBSERVACIONES: [Firma]

FIRMA Y SELLO RESPONSABLE TOMA PAP: [Firma]

FECHA DE RECEPCIÓN: 13 OCT 2014 FECHA DE REPORTE: 15 OCT 2014

MINISTERIO DE SALUD - VICEMINISTERIO DE SERVICIOS DE SALUD  
UNIDAD NACIONAL DE CÁNCER  
FORMULARIO PARA TAMIZAJE DEL CÁNCER CÉRVICO UTERINO

Nombre del Establecimiento: \_\_\_\_\_

No. Expediente/ No. Afiliación: \_\_\_\_\_ No. DUI/Pasaporte: \_\_\_\_\_

Nombre de la paciente: \_\_\_\_\_ Edad: \_\_\_\_\_

Fecha de Nacimiento: \_\_\_\_\_ Nacionalidad: \_\_\_\_\_ Teléfono: \_\_\_\_\_

Dirección: \_\_\_\_\_

Departamento: \_\_\_\_\_ Municipio: \_\_\_\_\_ Área: Urbana ☐ Rural ☐

**INFORMACIÓN GINECO OBSTÉTRICA:**

Antecedentes: FUR \_\_\_\_\_ Amenorrea: \_\_\_\_\_ Paridad: \_\_\_\_\_ FUP: \_\_\_\_\_

Embarazada actualmente: SI ☐ No ☒

Uso actual de DIU: SI ☐ No ☒ Uso actual de ACO: SI ☐ No ☒ Uso actual de inyectables: SI ☐ No ☒

**ANTECEDENTE DE TAMIZAJE:**

De primera vez en la vida: SI ☐ No ☒ Fecha: \_\_\_\_\_

Subsecuente Vigente: SI ☐ No ☒ Fecha: \_\_\_\_\_

Subsecuente atrasada: SI ☐ No ☒ Fecha: \_\_\_\_\_

Control pos tratamiento: SI ☐ No ☒ Fecha: \_\_\_\_\_

Tratamiento: Cono ☐ Crioterapia ☐ Histerectomía ☐ Radiac: \_\_\_\_\_

**TAMIZAJE ACTUAL:**

Fecha de tamizaje: \_\_\_\_\_

Método de tamizaje: PAP ☐ VPH ☐

Leucorrea: SI ☐ No ☒ Sangrado: SI ☐ No ☒

Cervicitis: SI ☐ No ☒

Nombre de persona que toma la muestra: \_\_\_\_\_ Fecha de envío a laboratorio: \_\_\_\_\_

**INFORME DE LECTURA DE PAP (Uso exclusivo del laboratorio). Número de PAP en laboratorio: \_\_\_\_\_**

Calidad de la muestra: Satisfactoria ☐ Insatisfactoria (procesada y analizada) ☐ Insatisfactoria (rechazada) ☐

☐ Negativa para lesión intraepitelial malignidad

☐ Tricomonas vaginales

☐ Microorganismos micóticos compatibles con Cándida sp

☐ Microorganismos micóticos compatibles con Torulopsis sp

☐ Cambios sugestivos de Vaginitis bacteriana

☐ Cambios celulares reactivos asociados a radiación

☐ Cambios celulares reactivos asociados a inflamación

☐ Cambios celulares reactivos asociados a DIU

☐ Atrofia

☐ Células glandulares pos histerectomía

☐ Células endometriales en mujer de 40 años o más

☐ Células endometriales en mujer de 40 años o más

**Anomalías de Células Escamosas y de Células Glandulares (Marcar con una "x" según corresponda)**

☐ Células escamosas atípicas de significado indeterminado (ASC-H)

☐ Células escamosas atípicas no se puede descartar malignidad (ASC-H)

☐ LEI de bajo grado

☐ LEI de alto grado

☐ Con hallazgos sospechosos de invasión

☐ Carcinoma de células escamosas

☐ Células glandulares atípicas endocervicales

☐ Células glandulares atípicas endometriales

☐ Células de origen no determinado

☐ Células glandulares atípicas endocervicales que favorecen neoplasia

☐ Células glandulares atípicas que favorecen neoplasia

☐ Adenocarcinoma endocervical in situ

☐ Adenocarcinoma endocervical

☐ Adenocarcinoma endometrial

☐ Adenocarcinoma extrauterino

☐ Adenocarcinoma sin especificar

☐ Otras neoplasias malignas

Especifique: \_\_\_\_\_

Nombre, Firma y Sello responsable lectura PAP: \_\_\_\_\_

Fecha de recepción muestra en laboratorio: \_\_\_\_\_ Fecha de reporte de PAP: \_\_\_\_\_

Observaciones: \_\_\_\_\_

**SEGUIMIENTO DE PAP:**

Fecha de entrega de resultado a paciente: \_\_\_\_\_ Responsable de entrega: \_\_\_\_\_

Establecimiento de salud al que se refiere y fecha cita para colposcopia: \_\_\_\_\_

**SEGUIMIENTO DE PRUEBA DE VPH:**

Fecha de entrega de resultado a paciente: \_\_\_\_\_ Responsable de entrega: \_\_\_\_\_

Establecimiento de Salud al que se refiere y fecha cita para evaluación visual con ácido acético: \_\_\_\_\_

**NÚMERO DE PRUEBA DE VPH:**

FECHA: \_\_\_\_\_

POSITIVO \_\_\_\_\_ NEGATIVO \_\_\_\_\_

Nombre, Firma y Sello responsable lectura VPH: \_\_\_\_\_

# Screening Forms



MINISTERIO DE SALUD - VICEMINISTERIO DE SERVICIOS DE SALUD  
UNIDAD NACIONAL DE CÁNCER  
FORMULARIO PARA TAMIZAJE DEL CÁNCER CERVICO UTERINO



Nombre del Establecimiento \_\_\_\_\_  
No. Expediente/ No. Afiliación: \_\_\_\_\_ No. DUI/Pasaporte \_\_\_\_\_  
Nombre de la paciente \_\_\_\_\_ Edad \_\_\_\_\_  
Fecha de Nacimiento: \_\_\_\_/\_\_\_\_/\_\_\_\_ Nacionalidad \_\_\_\_\_ Teléfono \_\_\_\_\_  
Dirección \_\_\_\_\_  
Departamento \_\_\_\_\_ Municipio \_\_\_\_\_ Área: Urbana ☐ Rural ☐

## INFORMACIÓN GINECO OBSTÉTRICA:

Antecedentes:  
Embarazada actual  
Uso actual de DIU

ANTECEDENTE  
De primera vez en  
Subsecuente Vigencia  
Subsecuente atrasado  
Control pos tratamiento  
Tratamiento: Control

Nombre de persona

## INFORME DE LA Calidad de la

- ☐ Negativa por
- ☐ Tricomonas
- ☐ Microorganismos
- ☐ Microorganismos
- ☐ Cambios sugestivos de vaginosis bacteriana
- ☐ Cambios celulares reactivos asociados a radiación
- ☐ Cambios celulares reactivos asociados a inflamación
- ☐ Cambios celulares reactivos asociados a DIU
- ☐ Atrofia
- ☐ Células glandulares pos histerectomía
- ☐ Células endometriales en mujer de 40 años o más

- Anomalías de Células Escamosas y de Células Glandulares** (Marcar con una "x" según corresponda)
- ☐ Células escamosas atípicas de significado indeterminado (ASC-H)
  - ☐ Células escamosas atípicas no se puede descartar malignidad (ASC-H)
  - ☐ Límite de bajo grado
  - ☐ Límite de alto grado
  - ☐ Con hallazgos sospechosos de invasión
  - ☐ Carcinoma de células escamosas
  - ☐ Células glandulares atípicas endocervicales
  - ☐ Células glandulares atípicas endometriales
  - ☐ Células de origen no determinado
  - ☐ Células glandulares atípicas endocervicales que favorecen neoplasia
  - ☐ Células glandulares atípicas que favorecen neoplasia

Fecha de recepción muestra en laboratorio: \_\_\_\_\_ Fecha de reporte de PAP: \_\_\_\_\_  
Observaciones: \_\_\_\_\_

## SEGUIMIENTO DE PAP:

Fecha de entrega de resultado a paciente: \_\_\_\_\_ Responsable de entrega: \_\_\_\_\_  
Establecimiento de salud al que se refiere y Fecha cita para colposcopia: \_\_\_\_\_

## SEGUIMIENTO DE PRUEBA DE VPH:

Fecha de entrega de resultado a paciente: \_\_\_\_\_ Responsable de entrega: \_\_\_\_\_  
Establecimiento de Salud al que se refiere y Fecha cita para evaluación visual con ácido acético: \_\_\_\_\_

## SEGUIMIENTO DE PAP:

Fecha de entrega de resultado a paciente: \_\_\_\_\_ Responsable de entrega: \_\_\_\_\_  
Establecimiento de salud al que se refiere y Fecha cita para colposcopia: \_\_\_\_\_

## SEGUIMIENTO DE PRUEBA DE VPH:

Fecha de entrega de resultado a paciente: \_\_\_\_\_ Responsable de entrega: \_\_\_\_\_  
Establecimiento de Salud al que se refiere y Fecha cita para evaluación visual con ácido acético: \_\_\_\_\_

NUMERO DE PRUEBA DE VPH: \_\_\_\_\_

FECHA: \_\_\_\_\_

POSITIVO \_\_\_\_\_ NEGATIVO \_\_\_\_\_

Nombre, Firma y Sello responsable lectura VPH: \_\_\_\_\_

- ☐ Sangre
- ☐ Citólisis
- ☐ Ausencia zona de transformación
- ☐ Lámina quebrada
- ☐ Falta información clínica
- ☐ Identificación inadecuada

Especifique: \_\_\_\_\_

Nombre, Firma y Sello responsable lectura PAP: \_\_\_\_\_

NUMERO DE PRUEBA DE VPH: \_\_\_\_\_

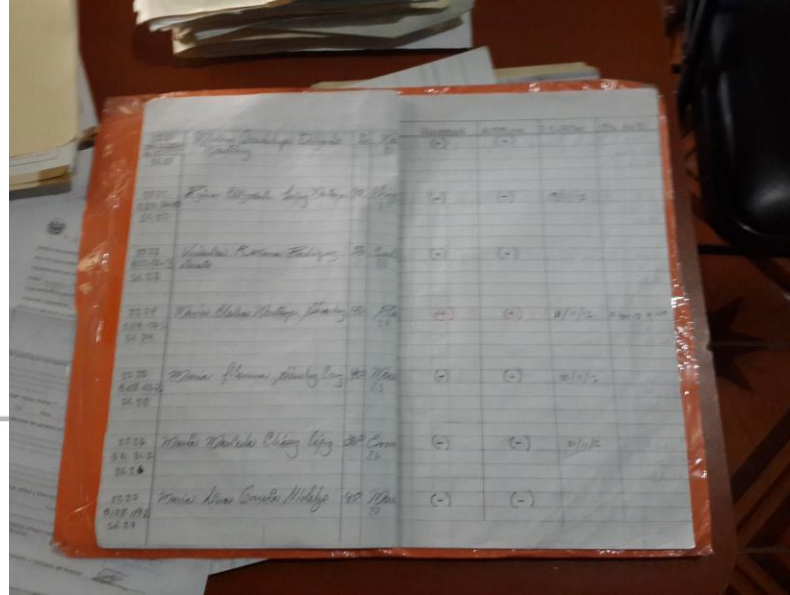
FECHA: \_\_\_\_\_

POSITIVO \_\_\_\_\_ NEGATIVO \_\_\_\_\_

Nombre, Firma y Sello responsable lectura VPH: \_\_\_\_\_



# Census - Monitoring





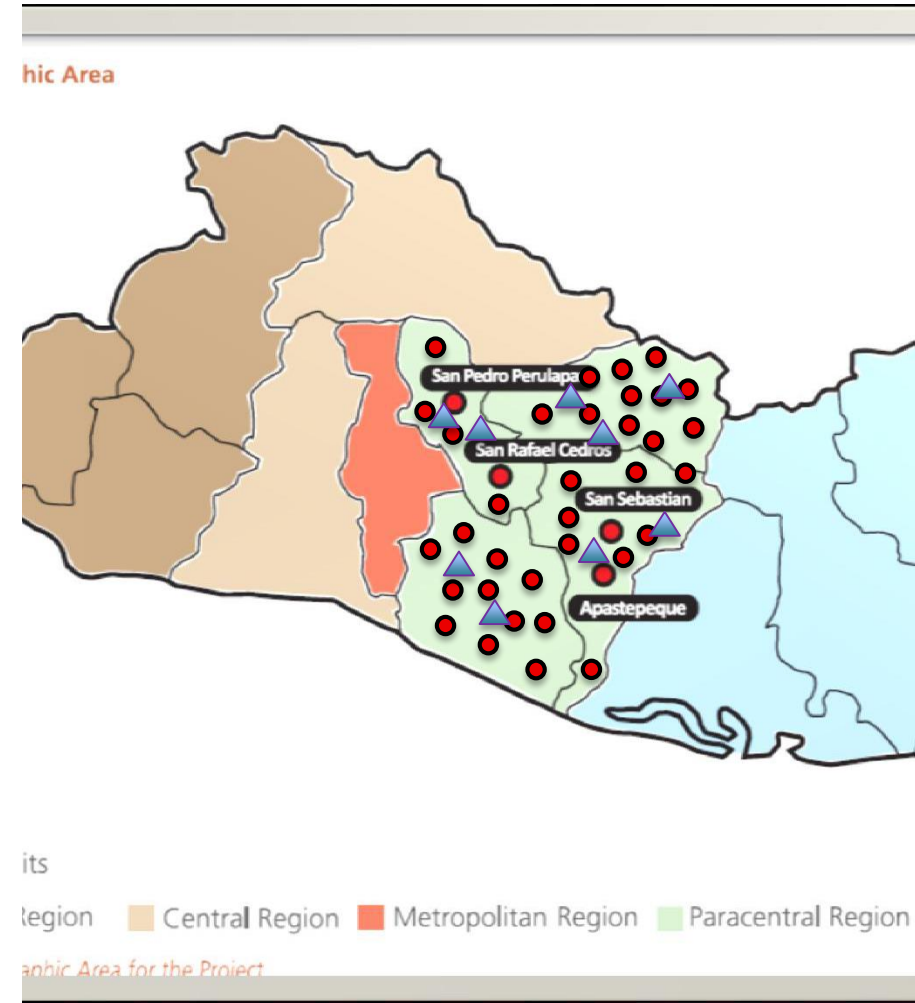
## CONTROL DE TAMIZAJE Y SEGUIMIENTO PARA DETECCION TEMPRANA DEL CANCER CERVICO UTERINO

DATE	LOCATION	TIME	WIND	WAVE	SEA	WAVE	WAVE
11/11	St. John's Bay, St. John's	11:11	SE	1-2			
11/12	St. John's Bay, St. John's	11:12	SE	1-2			
11/13	St. John's Bay, St. John's	11:13	SE	1-2			
11/14	St. John's Bay, St. John's	11:14	SE	1-2			
11/15	St. John's Bay, St. John's	11:15	SE	1-2			
11/16	St. John's Bay, St. John's	11:16	SE	1-2			
11/17	St. John's Bay, St. John's	11:17	SE	1-2			
11/18	St. John's Bay, St. John's	11:18	SE	1-2			
11/19	St. John's Bay, St. John's	11:19	SE	1-2			
11/20	St. John's Bay, St. John's	11:20	SE	1-2			
11/21	St. John's Bay, St. John's	11:21	SE	1-2			
11/22	St. John's Bay, St. John's	11:22	SE	1-2			
11/23	St. John's Bay, St. John's	11:23	SE	1-2			
11/24	St. John's Bay, St. John's	11:24	SE	1-2			
11/25	St. John's Bay, St. John's	11:25	SE	1-2			
11/26	St. John's Bay, St. John's	11:26	SE	1-2			
11/27	St. John's Bay, St. John's	11:27	SE	1-2			
11/28	St. John's Bay, St. John's	11:28	SE	1-2			
11/29	St. John's Bay, St. John's	11:29	SE	1-2			
11/30	St. John's Bay, St. John's	11:30	SE	1-2			

[illegible]

# CAPE Phase 3

- Take up on a regional level
- SCREEN AND TREAT
- 4 Departments
- Target population:
  - women age 30-59
  - no history of screening in > 2 years





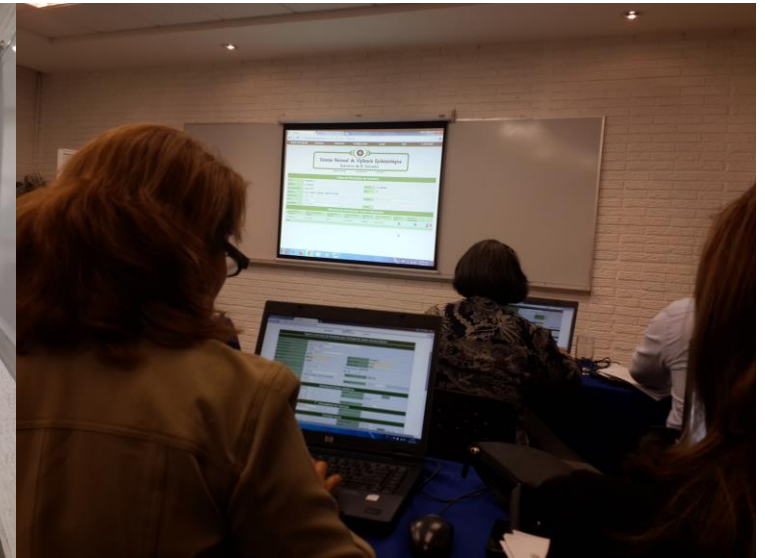
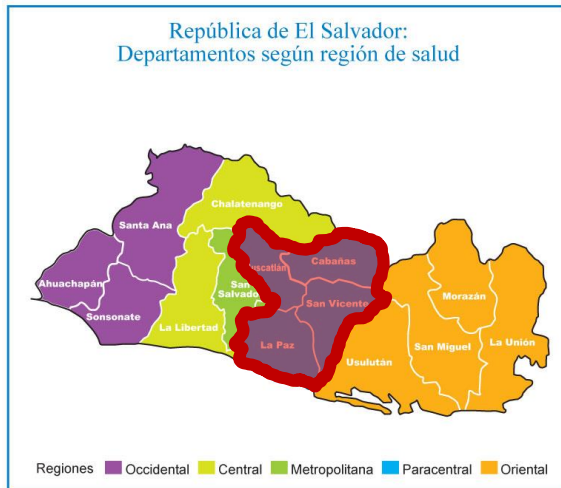
# Educational Sessions



- **TRAIN/EDUCATE**

**700** Health Promoters

**500** Nurses and physicians

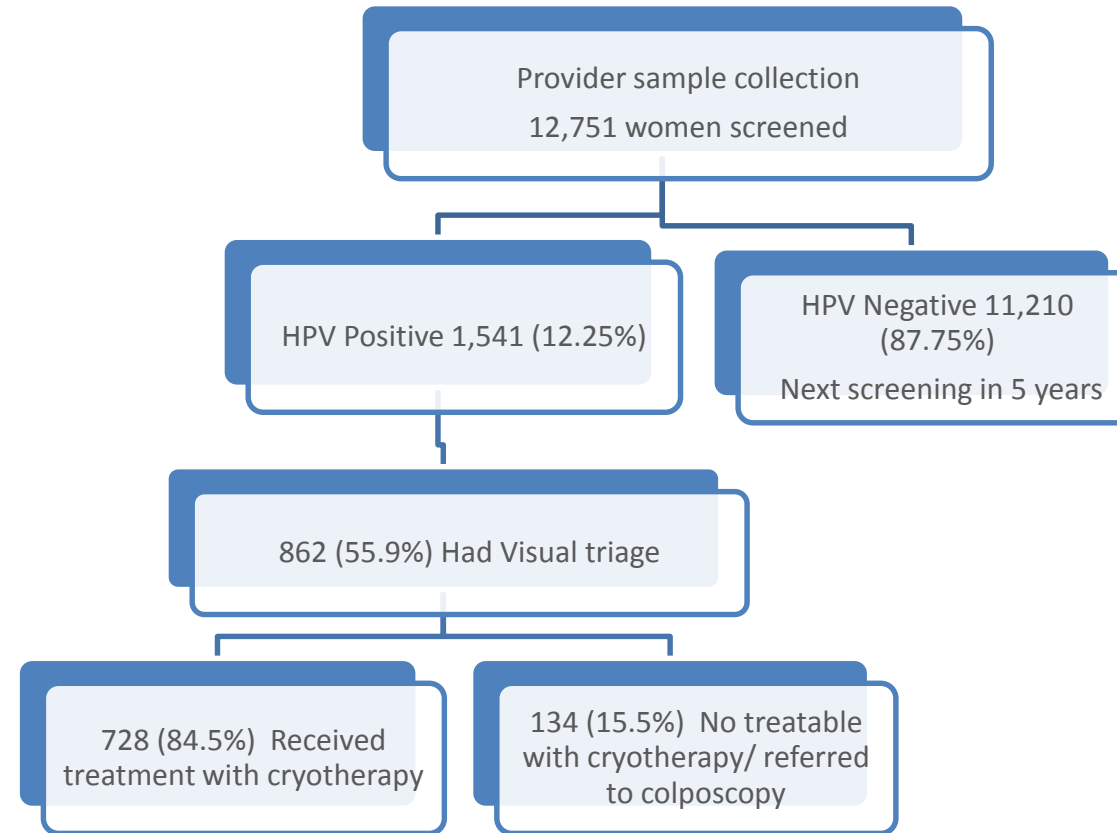


# Visual Triage Trainings





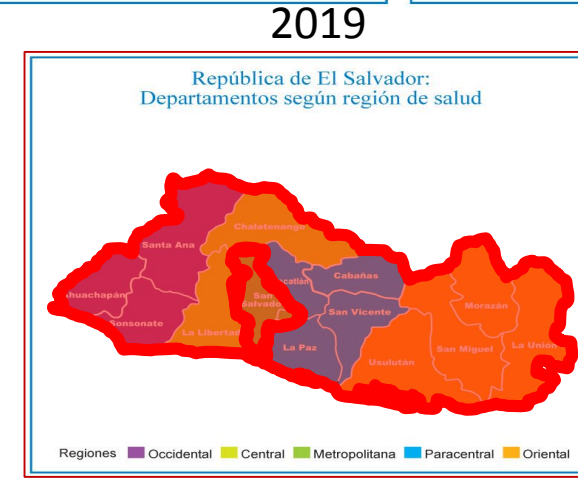
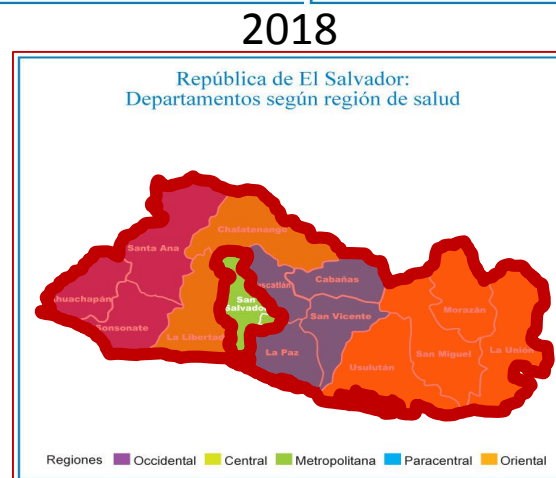
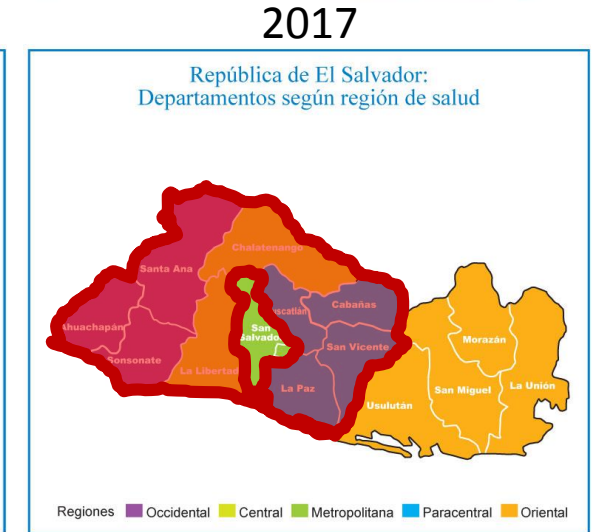
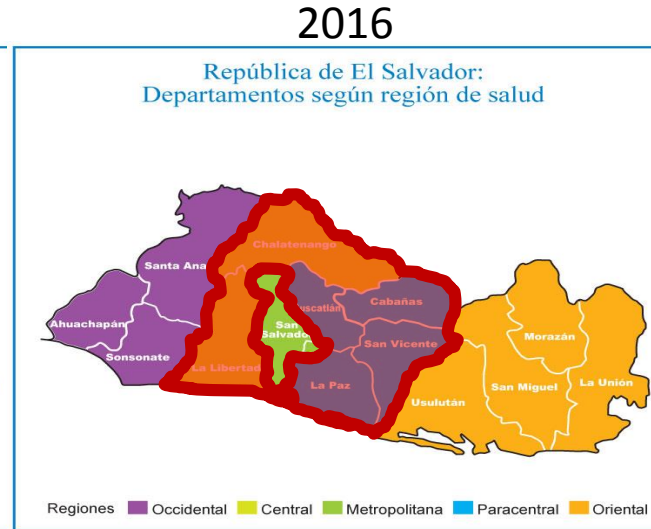
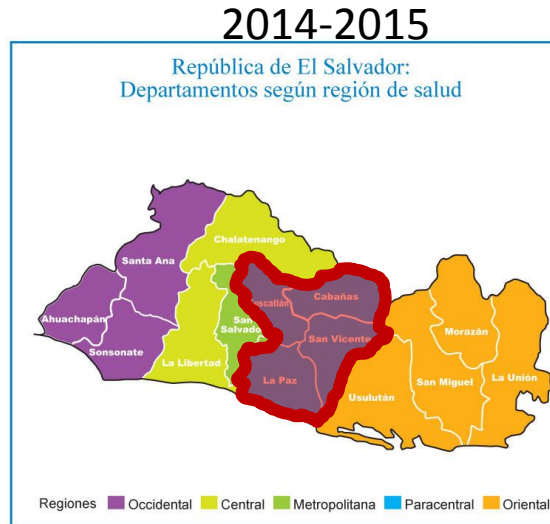
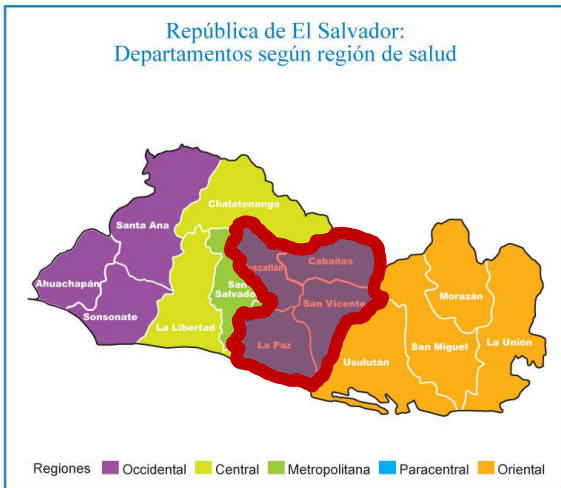
# Phase 3



- **TRAIN/EDUCATE**

**700** Health Promoters

**500** Nurses and physicians



HOW CAN WE SOLVE MORE PROBLEMS WE ENCOUNTER?

INNOVATE

TRY TO FIND A SOLUTION



“Feasibility of community-based self-sampling for HPV testing for non-attenders of cervical cancer screening programs in the Paracentral region of El Salvador – a pilot study.”



Reasons for non-attendance at the clinic (participants could chose more than one response)								
	Total		Accepted				Declined	
	No.	%	No.	%	No.	%	No.	%
Total	60	100.0	41	68.3	19	31.7		
Practical								
The appointment was at an inconvenient time	11	18.3	9	21.9	2	10.5		0.29
You were not able to get time off work	8	13.6	7	17.1	1	5.6		0.23
You don't need to do the test	6	10.0	2	4.9	4	21.0		0.05
You could not pay for transportation	5	8.3	4	9.8	1	5.3		0.56
You did not have adequate transportation	4	6.7	2	4.9	2	10.5		0.41
You were not able to find adequate childcare	4	6.7	3	7.3	1	5.3		0.77
You don't know what the test is for	4	6.7	2	4.9	2	10.5		0.41
You forgot you had an appointment	3	5.0	2	4.9	1	5.3		-
Your spouse/family member would not let you go	2	3.3	0	0.0	2	10.5		-
You had to wait too long at the clinic	1	1.7	0	0.0	1	5.3		-
Emotional								
You are embarrassed about being seen by a male physician	30	50.0	19	46.3	11	57.9		0.41
You think the screening will be painful	12	20.0	8	19.5	4	21.1		0.89
You had a bad experience with pelvic exams in the past	9	15.0	7	17.1	2	10.5		0.51
You are afraid of the test result	6	10.0	3	7.3	3	15.8		0.31
You do not trust the doctors	5	8.3	3	7.3	2	10.5		0.68
You are afraid you will need treatment	4	6.7	2	4.9	2	10.5		0.41
If you believe cancer can't but cured, why should you get test?	3	5.0	1	2.4	2	10.5		-
You are afraid to lose "part of your uterus" to surgery/biopsy	2	3.3	1	2.4	1	5.3		-
Risk								
You are not at risk for HPV	9	15.0	4	9.8	5	26.3		0.09
You don't have symptoms so you don't need to go to the clinic	7	11.9	2	5.0	5	26.3		0.02
You are not at risk for cervical cancer	7	11.7	2	4.9	5	26.3		0.02
You are not sexually active	6	10.0	3	7.3	3	15.8		0.31
χ2 or Fischer exact test								

# “Cervical Cancer Screening with Self Collection: Increasing Coverage, Decreasing Mortality”

N = 2049 women

2,049



412 No Response/  
Can't be reached

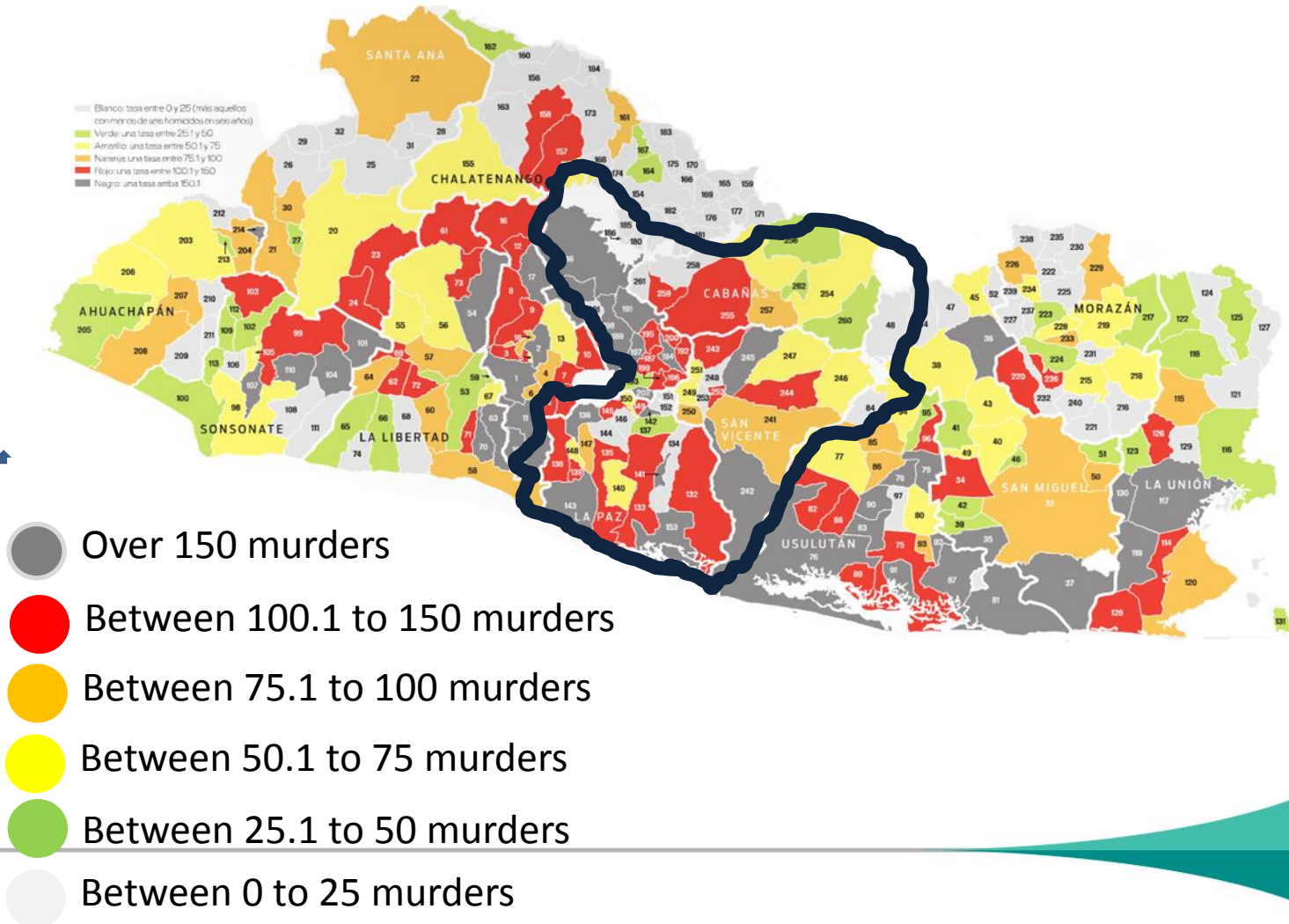
1,637



547 Don't accept  
Self Sample

1,090  
Self Sample

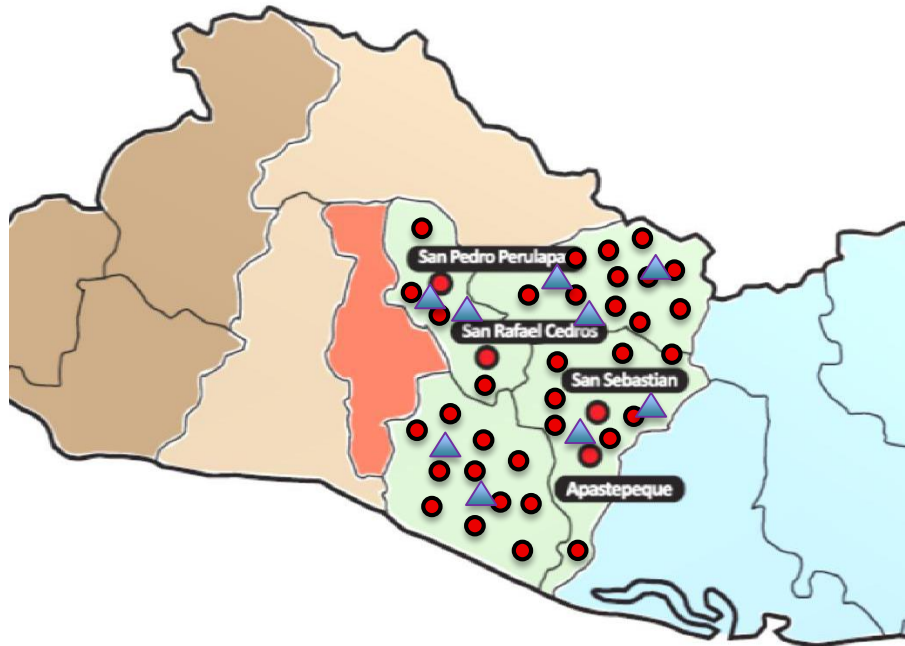
130 VPH (+)





# CAPE Phase 3

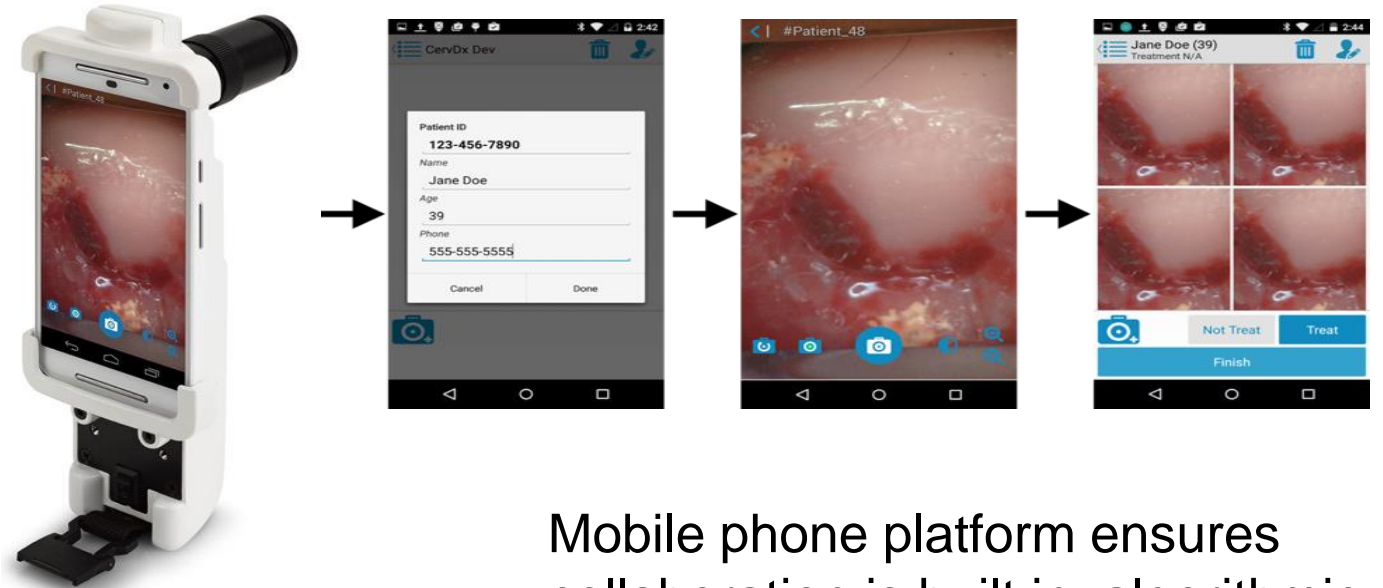
hnic Area



its

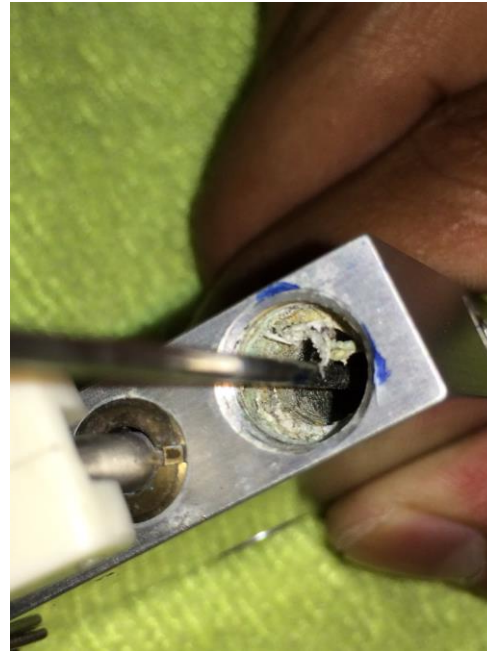
region ■ Central Region ■ Metropolitan Region ■ Paracentral Region

anhic Area for the Project



Mobile phone platform ensures collaboration is built in, algorithmic analysis forthcoming

# Cryotherapy Cylinders and Equipment

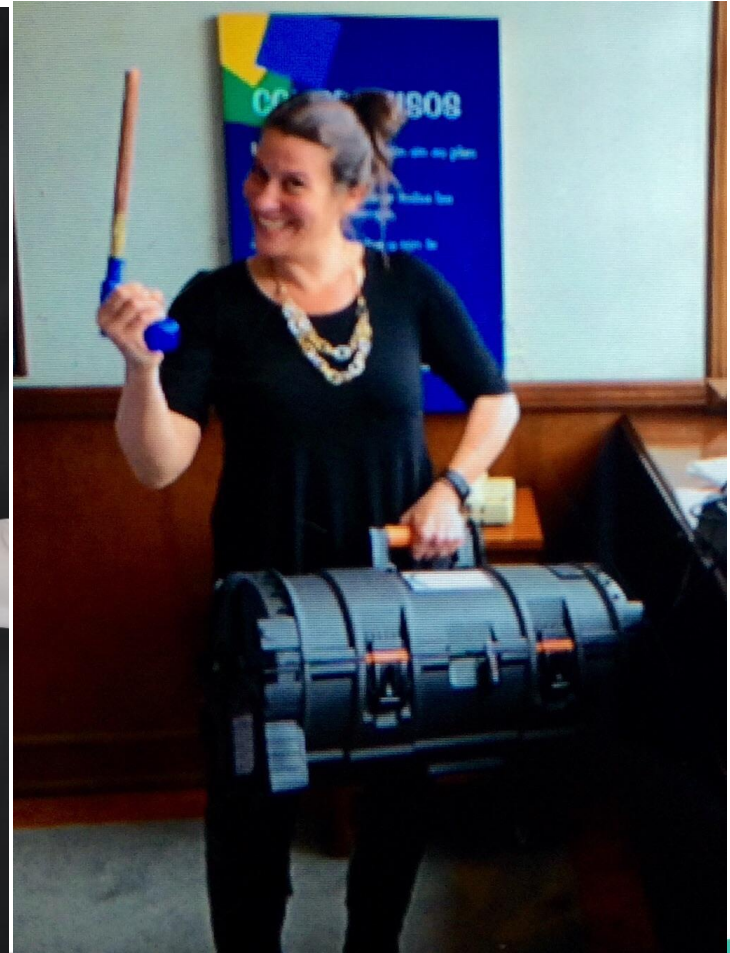


# Cryopen



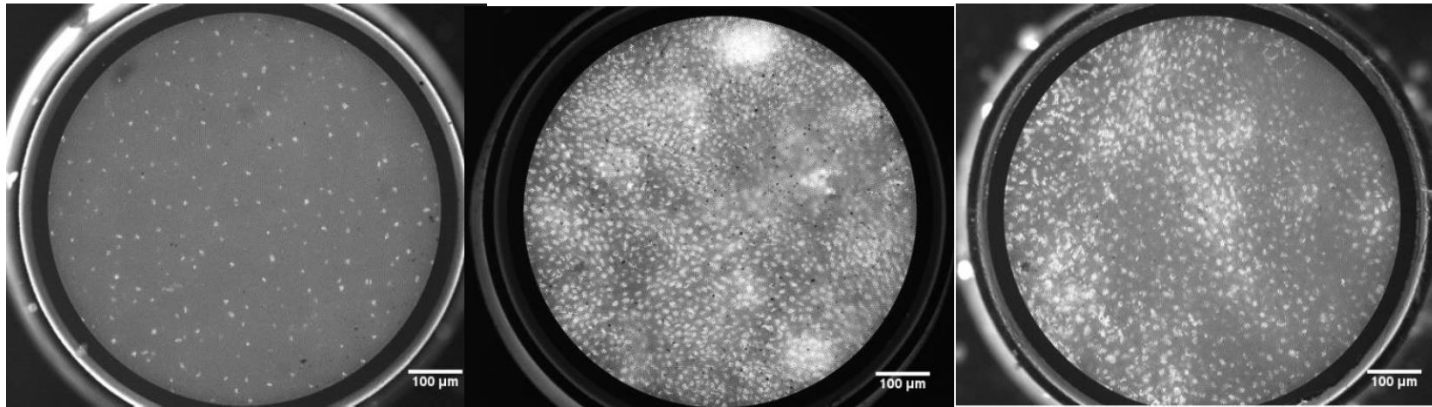


# Cryopen For LMIC



# High Resolution Micro Endoscopy

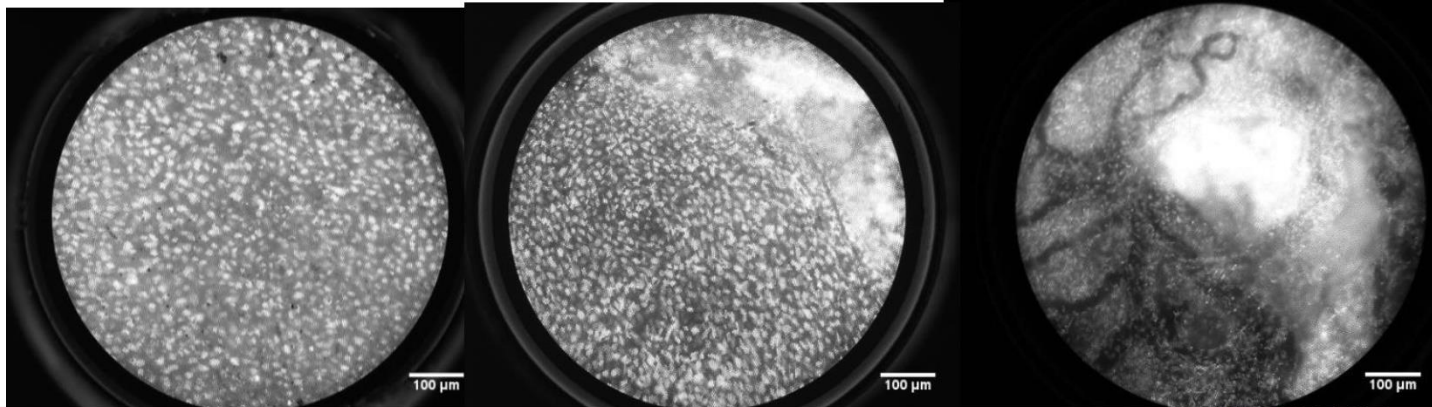
Barretos Cancer Hospital; 59 women referred for abnml Pap



Normal

Inflammation

CIN 1



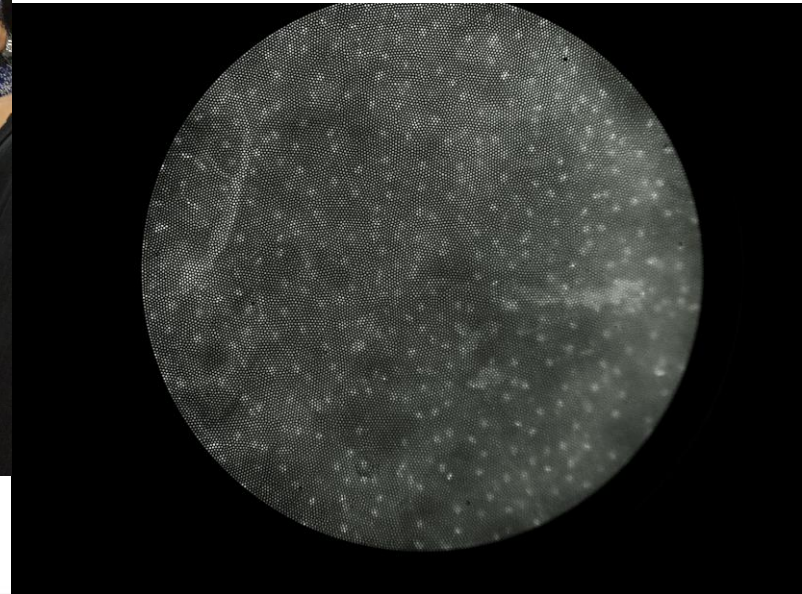
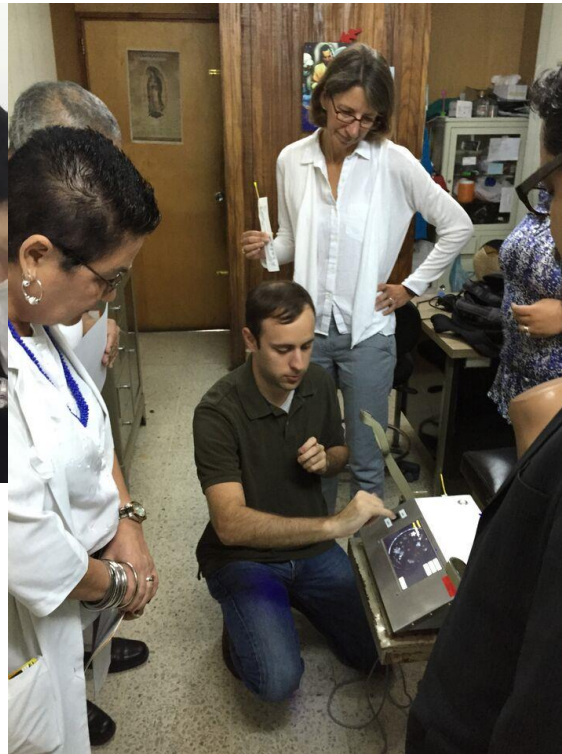
CIN 2

CIN 3

Cancer



# High Resolution Micro Endoscopy



MD Anderson  
~~Cancer~~ Center

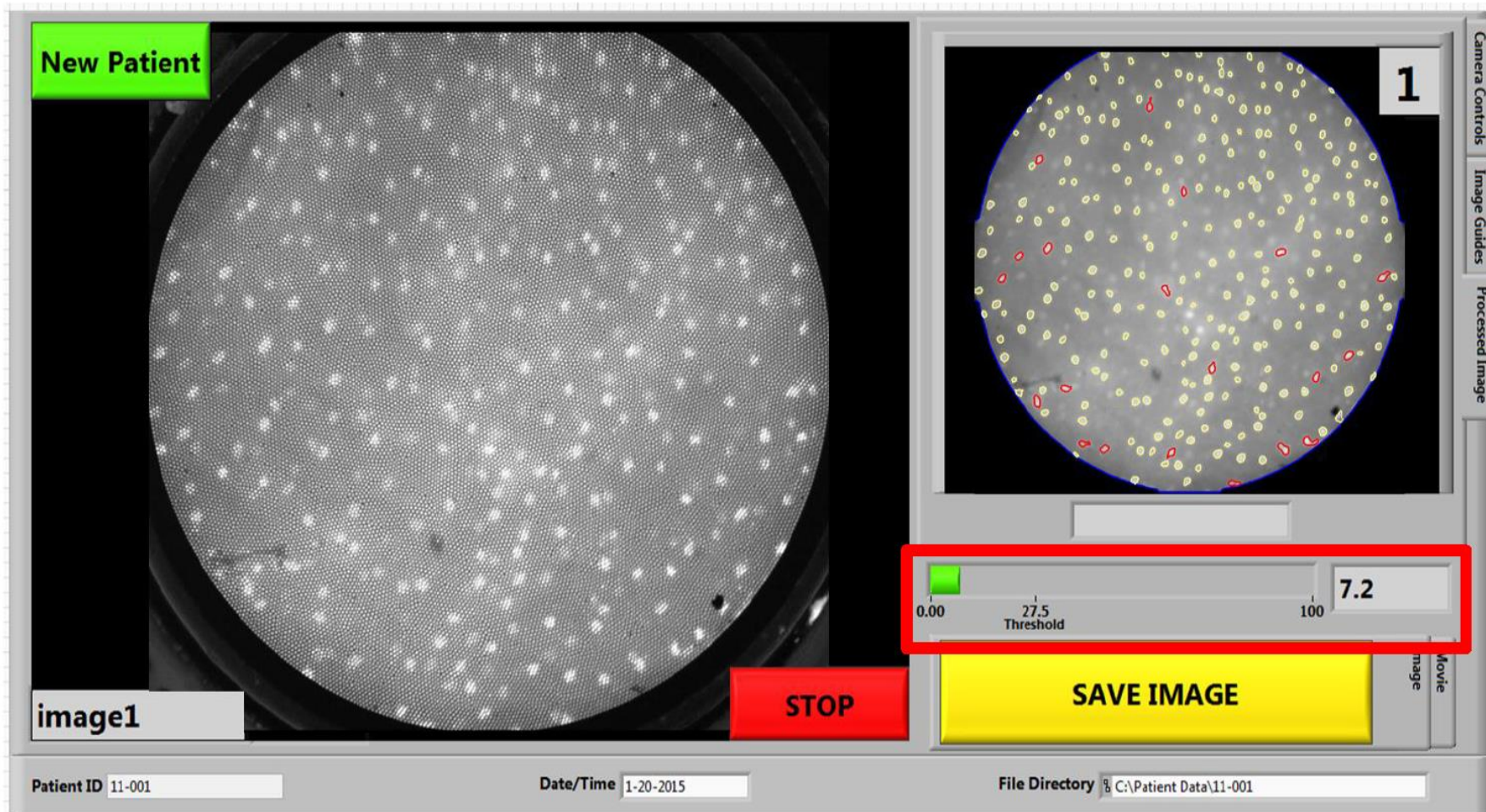


RICE



# HRME - Objective Interpretation

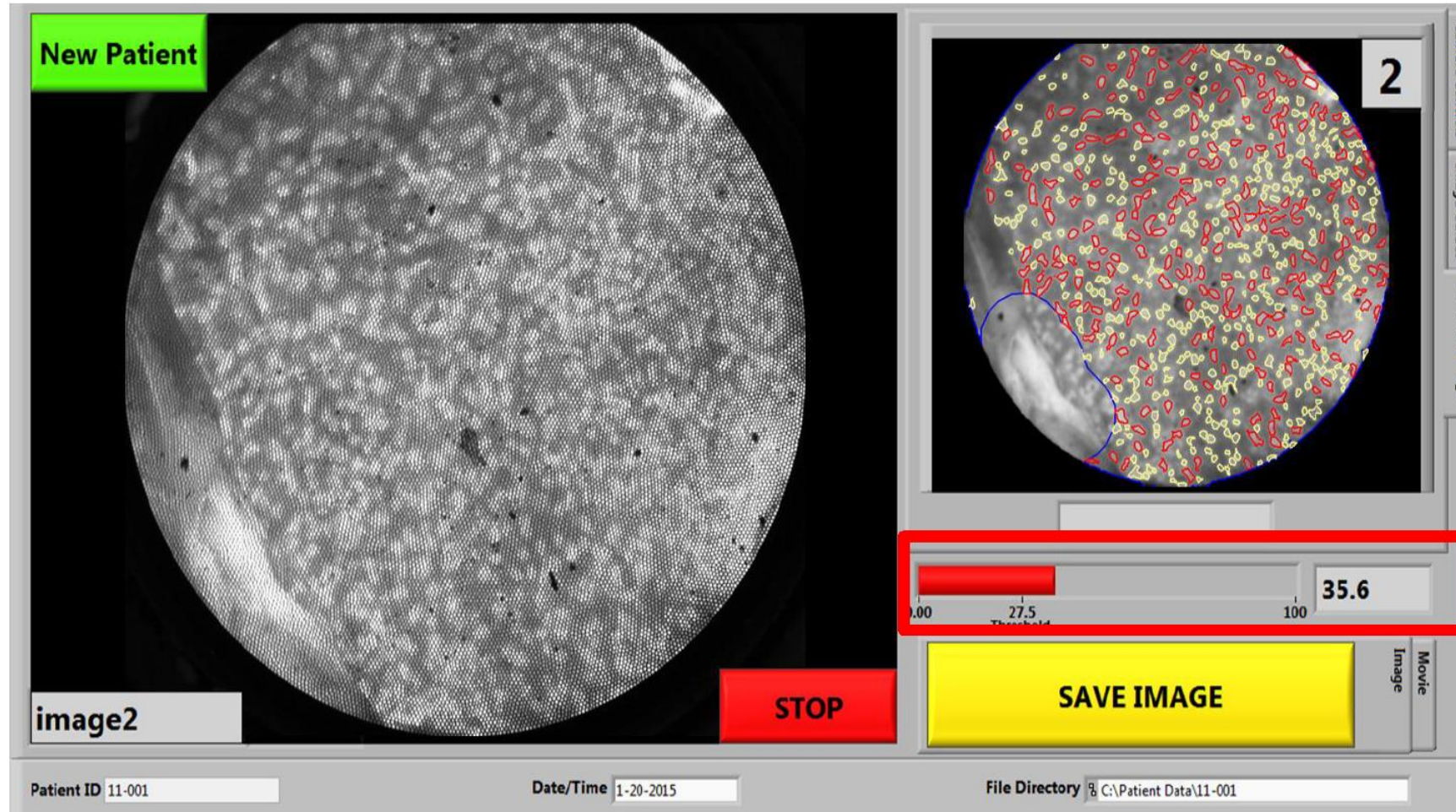
sic  
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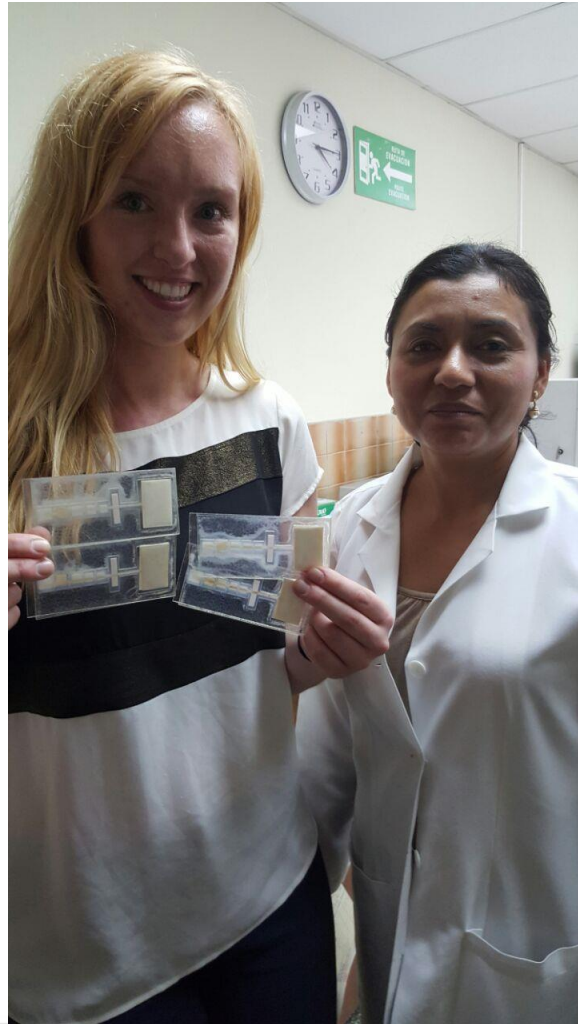




# HRME - Objective Interpretation

basic  
health  
international





IDEAL EXPECTATIONS REAL





THESE ARE COUNTRIES WE HAVE CONSULTED / WORKED ON /SHARED EXPERIENCES  
WE ARE CONSTANTLY TRYING TO LEARN ABOUT PROGRAMS  
EVERY COUNTRY IS DIFFERENT



VIETNAM



DOMINICAN REPUBLIC



NICARAGUA



HONDURAS



MALAWI



RWANDA



INDIA



PERU



HAITI



GUATEMALA



BRAZIL



ANTIGUA AND BARBUDA



CHINA



# Research Challenges

Not all countries have financial and human resources for research

Understand how research can impact decision making

Advocate for simple ways to conduct implementation research  
in limited resource settings

**BASED ON YOUR RESEARCH FINDINGS**

**REACT – WORK ON A SOLUTION**

**BE PATIENT, DON'T GIVE UP, THINGS WILL GO WRONG**

**LEARN FROM MISTAKES**

**WILL LEAD TO SUCCESS**

# Thank you!



## CAPE Collaborators-

- Juan Felix MD
- Phil Castle PhD
- Julia Gage PhD
- Jane Kim PhD
- Nicole Campos PhD
- Todd Alonzo

- Advisors-
- Silvana Luciani (PAHO)
- Jose Jeronimo (PATH)
- Melissa Rendler (UICC)
- Kathleen Schmeler (MD Anderson)
- Rebecca Richards-Kortum (RICE University)
- IARC Implementation Team



# Thank you!

- BHI and MOH Staff-
- Miriam Cremer (Founder of BHI)
- Andrea Chacon (Head of Cancer Program MOH)
- Mario Morales (Technical Collaborator MOH)
- Renzo Castillo (Head of Paracentral Region)
- Enrique Gonzales ( Regional Technical Advisor MOH)
- Rachel Masch (Executive Director BHI)
- Catherine Platt (Director of Grants BHI)
- Karla Alfaro (Medical Director)
- Mario Melendez and Leticia Lopez (Research Coordinators)
- Elizabeth Torres (Director of Clinical and Educational Training)
- CAPE Team







Mount Sinai



Centers for Disease Control and Prevention  
CDC 24/7: Saving Lives, Protecting People™

International Agency  
Research on Cancer



World Health Organization



AMERICAN SOCIETY  
FOR COLPOSCOPY AND  
CERVICAL PATHOLOGY

The society for lower genital  
tract disease since 1964



NATIONAL  
CANCER  
INSTITUTE

MINISTERIO DE SALUD  
GOBIERNO DE

EL SALVADOR  
UNIDOS CRECEMOS TODOS



Organización  
Panamericana  
de la Salud

Oficina Regional de la  
Organización Mundial de la Salud

MD Anderson  
Cancer Center



RICE



QIAGENcares



Global Coalition  
against Cervical Cancer



HARVARD  
T.H. CHAN  
SCHOOL OF PUBLIC HEALTH  
Powerful ideas for a healthier world



# IARC "50 for 50"

Empowering future cancer  
research leaders

