CUGH & NCI Cervical Cancer Webinar 3: Ensuring effective implementation of cervical cancer prevention and control strategies

August 12, 2020

11:00am-12:00pm EDT

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CUGH & NCI Cervical Cancer

The role of Implementation Science to bridge the gap between research and practice in the implementation of HPV-testing as primary screening in middle income settings

Silvina Arrossi, Msc, PhD
CEDES/CONICET

Declaration of Good Standing and Conflict of Interest Disclosure

I do not have a financial interest in any product or service related to my presentation

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TECHNOLOGY

HPV-testing
HPV-self collection
HPV-vaccination

Cervical cancer elimination

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HPV-testing
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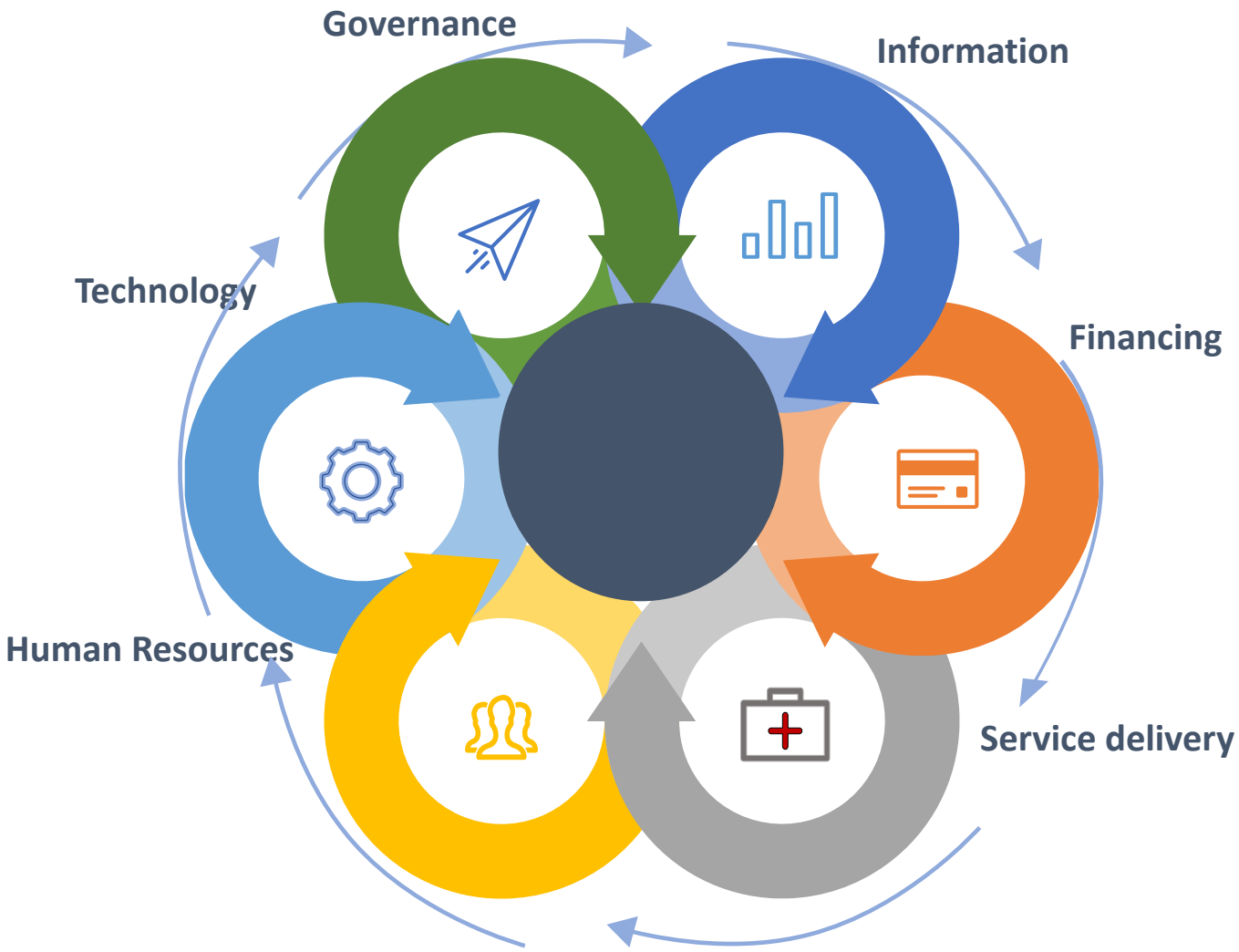
Cervical cancer elimination

HOW TO IMPLEMENT EVIDENCE-BASED INTERVENTIONS IN REAL WORLD SETTINGS SO WE CAN MAKE THEM WORK?

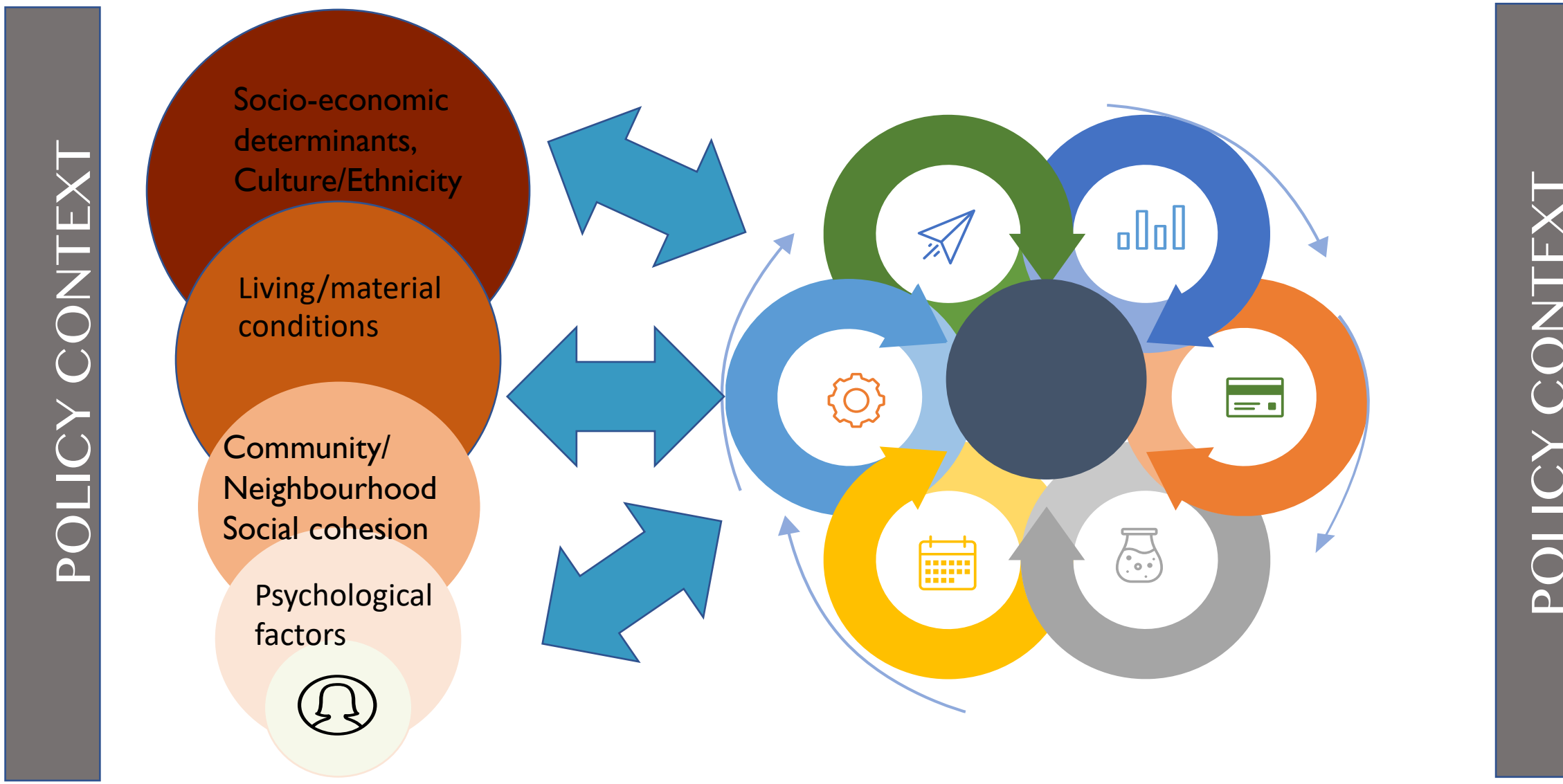
POLICY CONTEXT



SOURCE: WHO, 2007

POLICY CONTEXT

HOW TO IMPLEMENT EVIDENCE-BASED INTERVENTIONS IN REAL WORLD SETTINGS SO WE CAN MAKE THEM WORK?



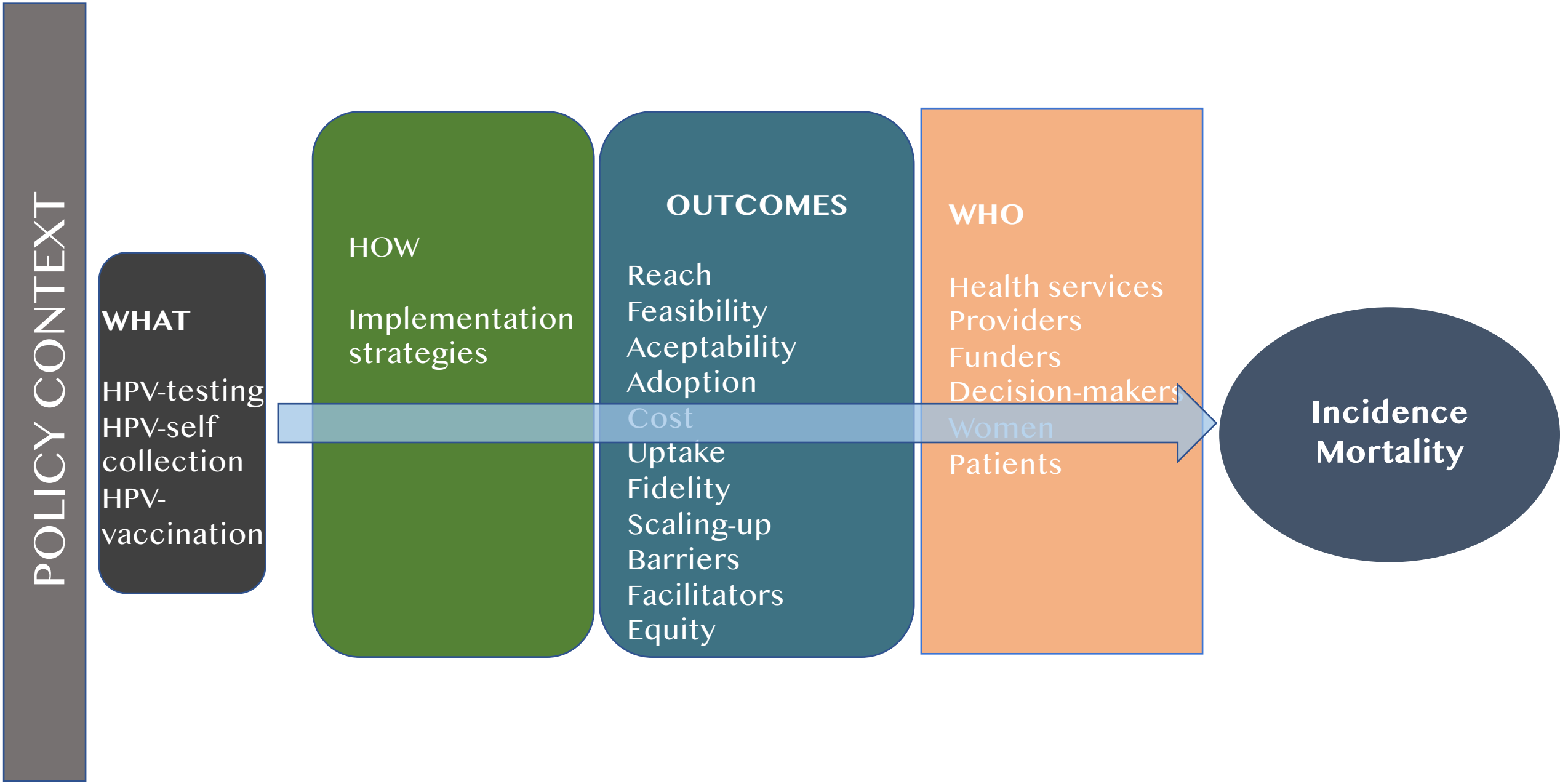
POLICY CONTEXT

WHAT

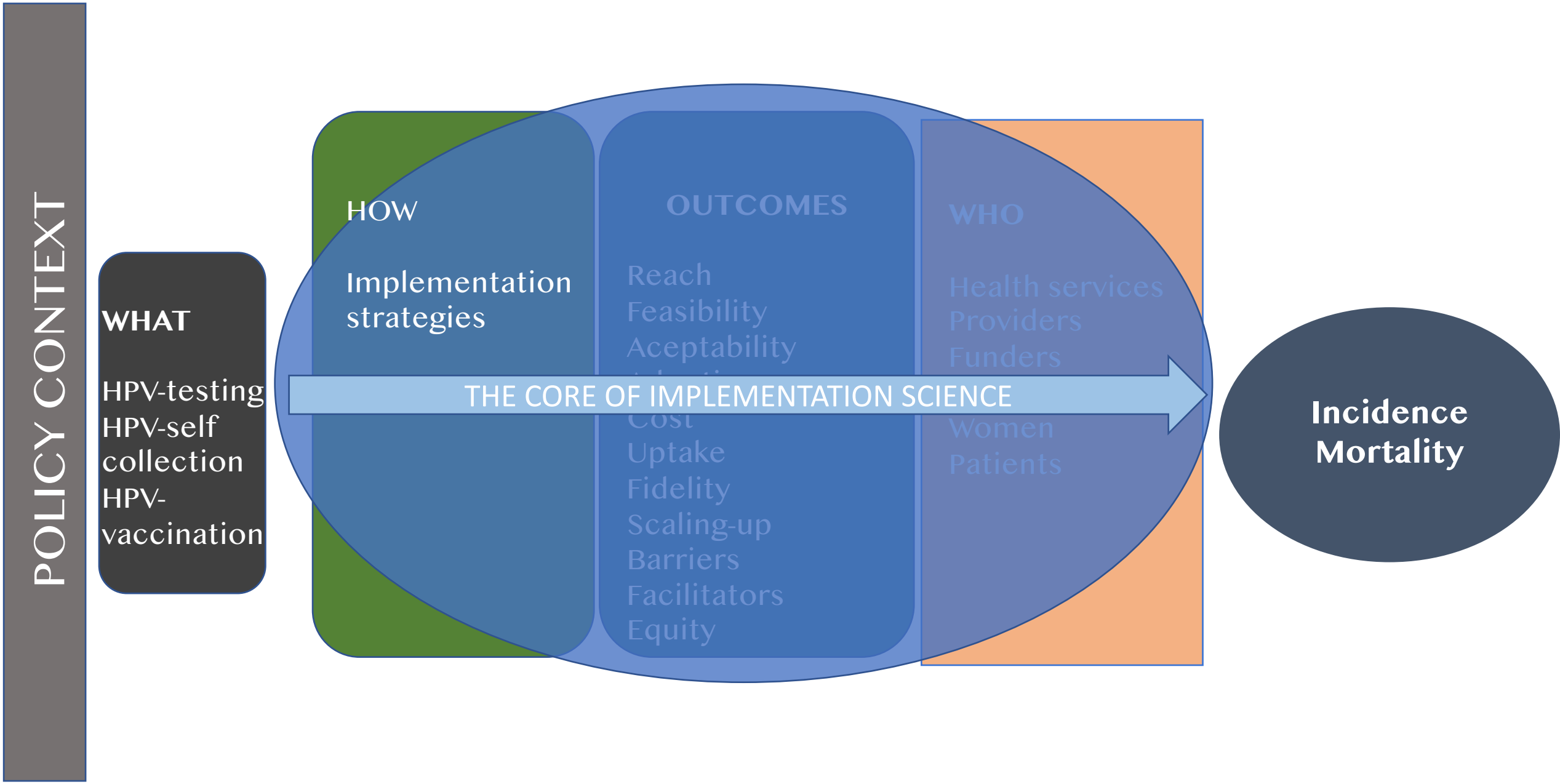
HPV-testing
HPV-self collection
HPV-vaccination

Incidence
Mortality

Adapted from Chambers, Proctor, D. TIDIRH 2014



Adapted from Chambers, Proctor, D. TIDIRH 2014



Adapted from Chambers, Proctor, D. TIDIRH 2014

HPV SELF-COLLECTION

Highly effective to detect disease

Acceptable

High potential to reduce barriers to screening

ARGENTINEAN CONTEXT

- The offer of HPV self-collection: Where, by whom?
- Is it acceptable?
- Is it effective to increase screening uptake?
- What are its core components?
- What are the method main limitations in the local context?

Proyecto EMA

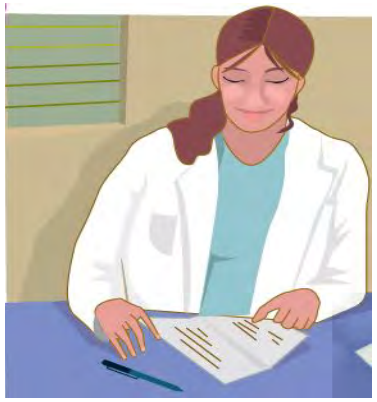
CONOCIMIENTO PARA LA SALUD DE LAS MUJERES

200 CHWs who routinely visited households for health service provision

6000 women

Arrossi et al, LANCET GH 2015, IMPLEMENTATION SC 2017

EMA STUDY: MAIN RESULTS



- High acceptability by women, by CHWs and health providers
- 4 times more screened women in the intervention group than in the control group (86% vs 20%)

Arrossi et al, The Lancet Global Health 2015, Curotto et al, 2017; Arrossi et al, BMC Public Health 2016

Self-collection strategy: Core components

TRAINING

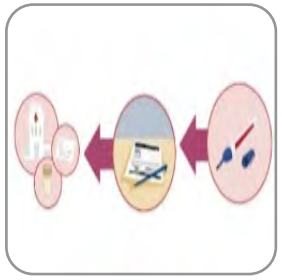
2 workshops including:

- Scientific data on HPV/cervical cancer prevention
- Step-by-step self-collection take-up
- Communication skills to conduct the educational talk (instruct women on how to perform self-collection)
- Evaluation.

OFFER OF SELF-COLLECTION

- Home visits,
- Identification of target population;+
- During the visit, provision of information about cervical cancer prevention and HPV testing; a 10-min step-by-step explanation on how to perform it using communication support material and Information about HPV results

SAMPLE HANDLING AND TRANSPORTATION



- Labeling of collectors with the woman name and the national unique identifier number
- Transport of specimens at room temperature to PHC centers:
- Transport to the provincial HPV laboratory (before 14 days)

FOLLOW-UP AND TREATMENT

Follow up and treatment according to guidelines:
Cytology triage for HPV+ women, colposcopy and treatment for HPV+/Cyto ASCUS+;

Referral times.

Arrossi et al, 2016

Is the intervention (EMA STRATEGY) being delivered as intended by the program developers and in line with the program model?

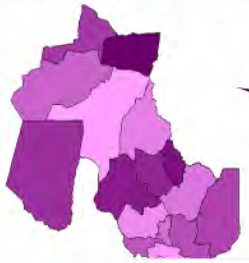
2012-2013
EMA STUDY

Proyecto EMA
CONOCIMIENTO PARA LA SALUD DE LAS MUJERES

THE LANCET Global Health

Effect of self-collection of HPV DNA offered by community health workers at home visits on uptake of screening for cervical cancer (the EMA study): a population-based cluster-randomised trial

2014
PROVINCIAL SCALING-UP



Arrossi et al. Implementation Science (2017) 12:17
DOI 10.1186/s13012-017-0548-1

Implementation Science

RESEARCH Open Access

Evaluation of scaling-up of HPV self-collection offered by community health workers at home visits to increase screening among socially vulnerable under-screened women in Jujuy Province, Argentina

Silvina Arrossi[1*], Melisa Paolino[2], Laura Thouyaret[2], Rosa Laudi[2] and Alicia Campanera[3]

Abstract

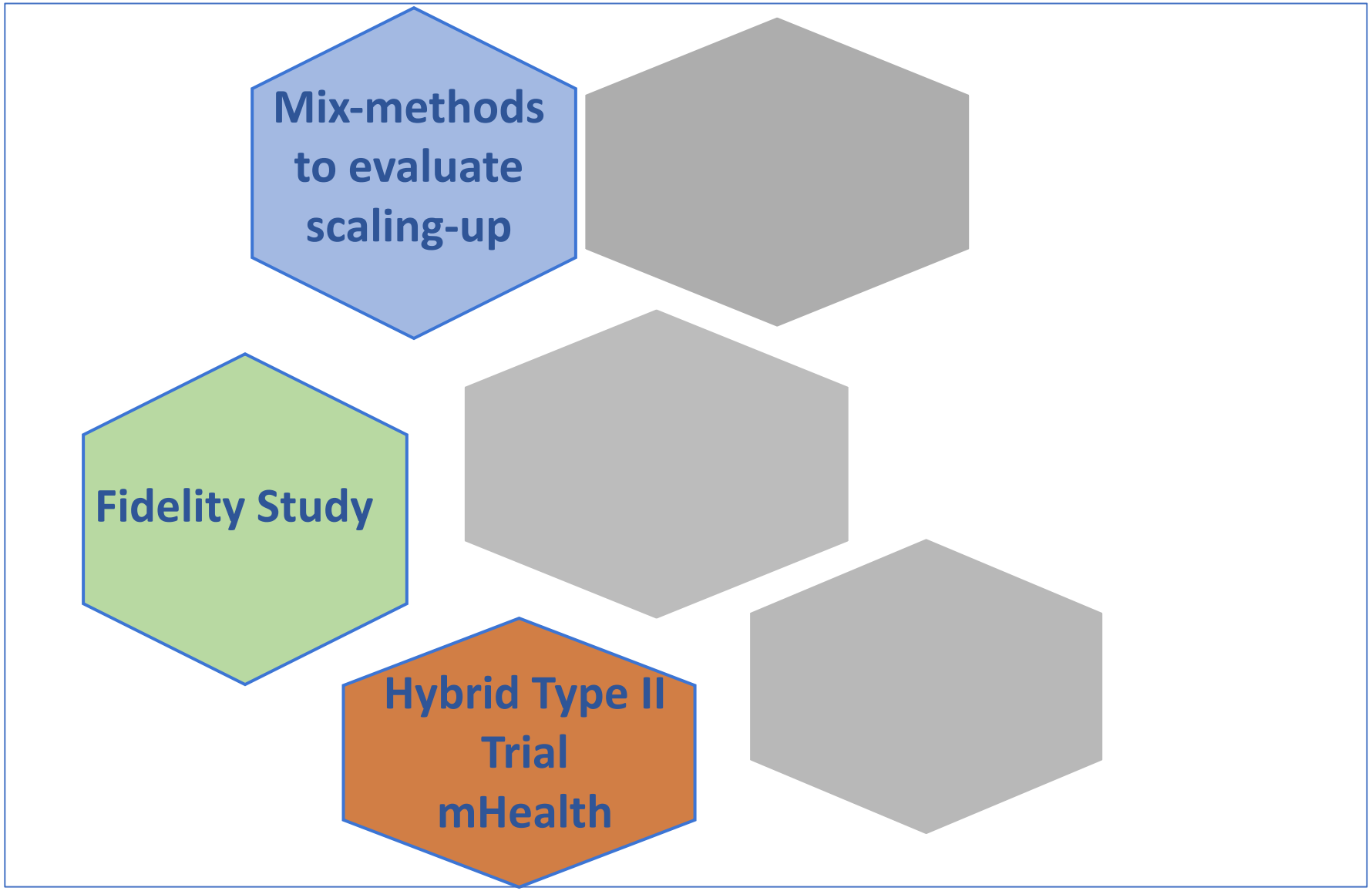
Background: Self-collection has been proposed as a strategy to increase cervical screening coverage among hard-to-reach women. However, evaluations of the implementation of this strategy on a large scale are scarce. This paper describes the process and measurement of the scaling-up of self-collection offered by community health

2015: Extension of HPV self-collection to 4 provinces and metropolitan Area of Buenos Aires

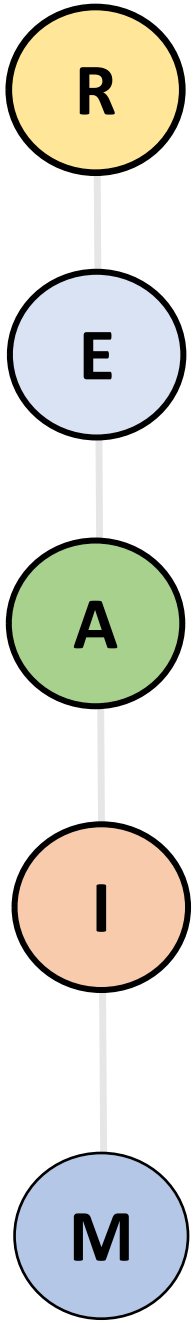
HOW TO SCALE-UP HPV SELF-COLLECTION IN PROGRAMMATIC CONTEXTS?

- Do primary health workers accept to incorporate it as routine practice?
- Is it effective to reach the target population?
- What are the main limitations when applied at scale?
- What is the level of fidelity in the core components implementation?

IMPLEMENTATION SCIENCE APPLIED TO SELF-COLLECTION



- Evaluation of provincial scaling up
- N= 3000 women



Reach: 10 % of screening in target population

Effectiveness to increase coverage:
40% increase in screening uptake in target population

Adoption: 70% of CHWs offered Self-collection;

Implementation:
Training: 82%; Discarded samples: 0.2%
70% triage; 70% DX; Tx: 82%
CIN2+: 0,9% (EMA: 1,1%)

Maitenance: SC routine practice from 2014 onwards

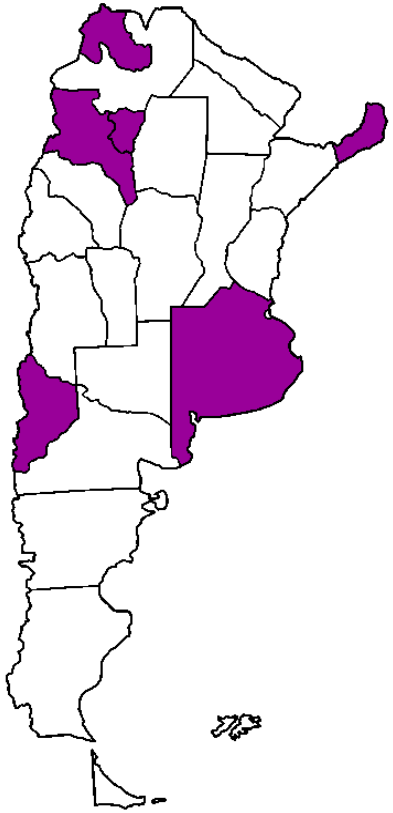
Arrossi et al, Implementation Science 2017, Curotto et al, SPM 2019

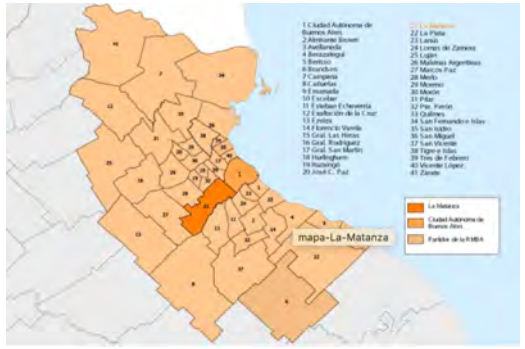
FIDELITY STUDY IN LA MATANZA, BUENOS AIRES METROPOLITAN AREA

Self-collection introduced in 2017

Urban municipality with 2 million inhabitants

More than 30% of its population is poor, high insecurity





FIDELITY STUDY IN LA MATANZA, BUENOS AIRES METROPOLITAN AREA

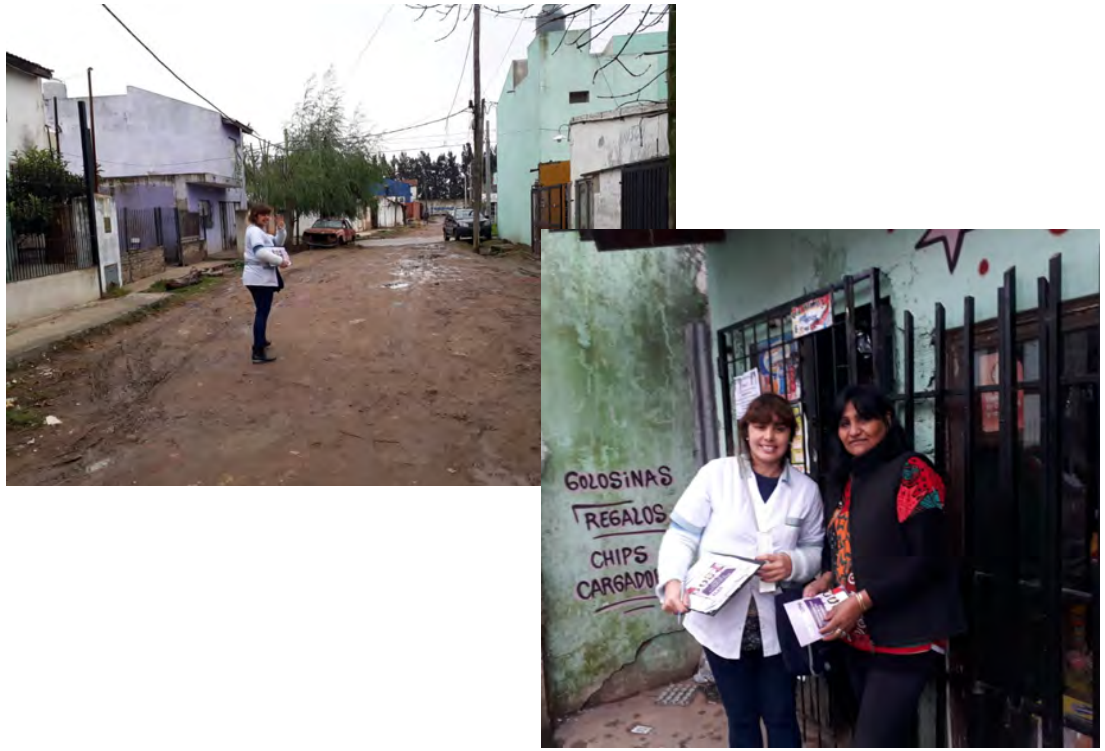
How far the implemented intervention actually adhered to the prescribed model (EMA strategy/core components)?

METHODS

Observations of health promoters during the offering of self collection (n=70)

Evaluation of training (n=171)

Analysis of screening registries (clinical outcomes, follow-up, treatment)



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Municipio de La Matanza

Fidelity Study in La Matanza, Buenos Aires Metropolitan Area

TRAINING

98% adherence to training protocol

Evaluation

OFFER OF SELF-COLLECTION

Adaptations considering different context: insecurity, different primary health care structure; different health promoters

Less time for the offering, fewer pieces of information provided

Ongoing: Evaluation of impact; reduced acceptability?

SAMPLE HANDLING AND TRANSPORTATION

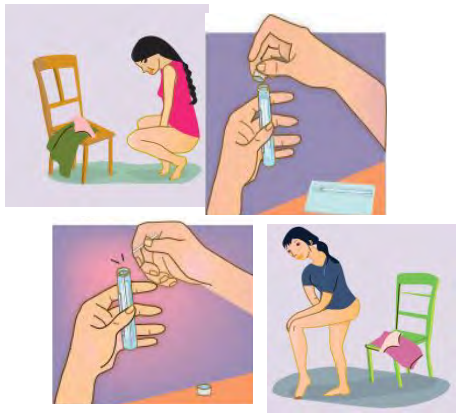
- **98% of adherence to standardized protocol**

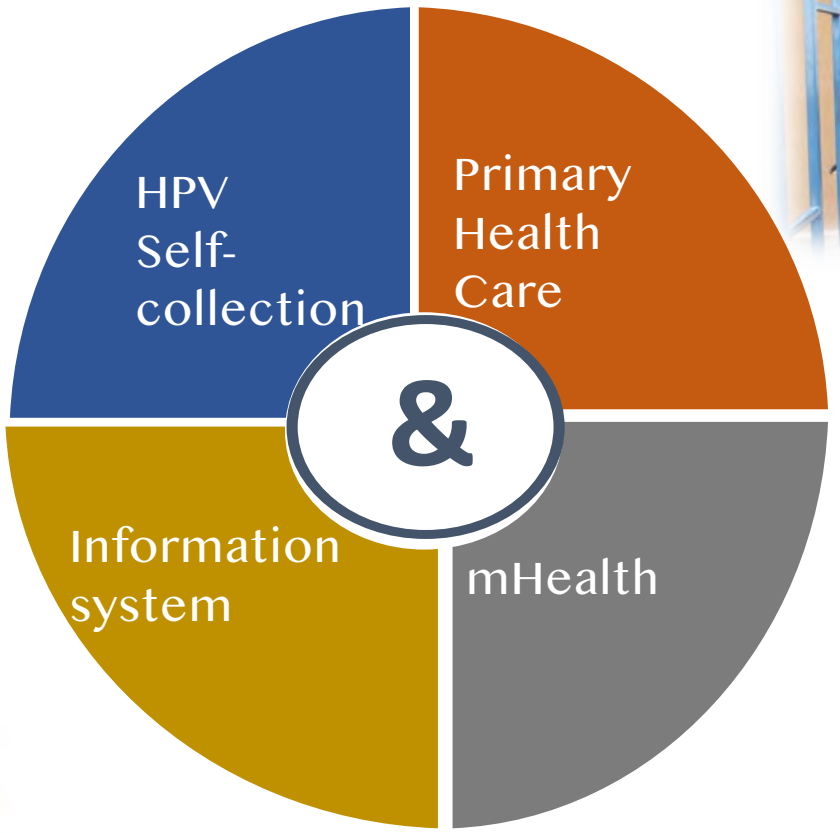
FOLLOW-UP AND TREATMENT

Reduced adherence to triage and follow-up

Preliminary results, please do not quote

IMPLEMENTATION SCIENCE TO IMPROVE EFFECTIVENSS OF THE FOLLOW-UP PROCESS





MIXED-METHODS EVALUATION OF A MULTI-COMPONENT MHEALTH INTERVENTION FOR TRIAGE AFTER HPV SELF-COLLECTION: THE ATICA STUDY

(APPLICATION OF COMMUNICATION AND INFORMATION TECHNOLOGIES TO SELF-COLLECTION, FOR ITS INITIALS IN SPANISH)

- Formative research to design messages: What should be said?, key messages
- Pragmatic Randomized controlled trial: Is it effective in real world conditions?
- Evaluation of implementation: decisors, CHWs, women

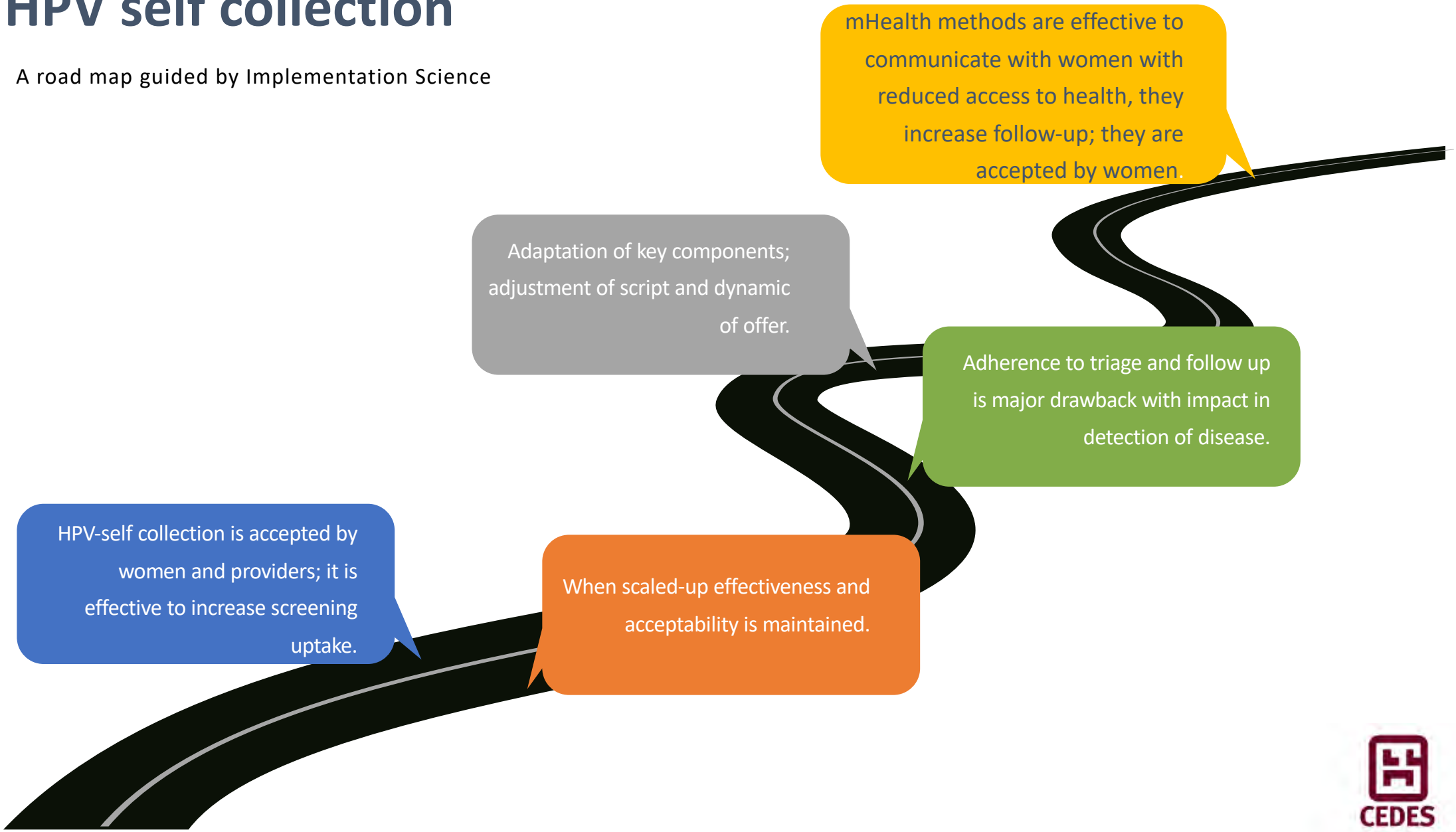
Arrossi et al, Implementation Science 2017

ATICA PRELIMINARY RESULTS: 5351 participating women

- Women accept messages; for them they represent the close link with CHWs (Sanchez-Antelo et al, 2019)
- CHWS consider messages as a facilitator of their work and link with women (preliminary results)
- Women who received SMS were more likely to be triaged (19% difference; preliminary results)

HPV self collection

A road map guided by Implementation Science



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ACKNOWLEDGEMENTS

Ministerio de Salud de Argentina, for its participation in the EMA study

Instituto Nacional del Cancer, Argentina, for its participation in the EMA study/ATICA project/Fidelity study

Ministerio de Salud de Jujuy, for its participation in the EMA study/ATICA Project

IARC-WHO, for its participation in the EMA Study

Secretaria de Salud de la Matanza, for its participation in the Fidelity Study

Harvard University, for its participation in the ATICA Project

Deakin University Australia, for its participation in the ATICA project

NCI/NIH for its funding of the ATICA Project

Thanks!

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Designing research to guide program implementation: The ASPIRE Program

CUGH Webinar Series: August 2020

The ASPIRE program of research

- Partnership between UBC, Makerere University and Uganda Cancer Institute since 2006
- Focused on cervical cancer elimination
- Ongoing consultation with MoH and health care leaders developing National strategy for cervical cancer elimination
- Phased pragmatic research approach to designing cervical cancer screening program

Designing a research program with an implementation focus

1) Always keep end goal of national scale-up in mind
2) Authentic, established partnerships are critical to a pragmatic in trial design
3) Responsive to input from partners and stakeholders including patients and health system leaders.
4) Plan trial as program implementation - logic model development; consider the entire cascade
5) Develop process evaluation strategy using a Implementation Science framework (we used the Reach, Effectiveness, Adoption, Implementation, Maintenance (RE-AIM) framework)

Assessing women's willingness to collect their own cervical samples for HPV testing as part of the ASPIRE cervical cancer screening project in Uganda

Sheona Mitchell [a], Gina Ogilvie [a,b,*], Malcolm Steinberg [b,c], Musa Sekikubo [d], Christine Biryabarema [d], Deborah Money [a,e]

[a] University of British Columbia, Vancouver, Canada
[b] British Columbia Center for Disease Control, Vancouver, Canada
[c] Simon Fraser University, Vancouver, Canada
[d] Makerere University, Kampala, Uganda
[e] British Columbia Women's Hospital, Vancouver, Canada

Understanding the role of embarrassment in gynaecological screening: a qualitative study from the ASPIRE cervical cancer screening project in Uganda

Flora F Teng,[1] Sheona M Mitchell,[1] Musa Sekikubo,[2] Christine Biryabarema,[2] Josaphat K Byamugisha,[2] Malcolm Steinberg,[3,4] Deborah M Money,[1,5] Gina S Ogilvie[1,3]

Understanding Men's Perceptions of Human Papillomavirus and Cervical Cancer Screening in Kampala, Uganda

Erin Moses [1], Heather N Pedersen [1], Emily C Wagner [1], Musa Sekikubo [1], Deborah M Money [1], Gina S Ogilvie [1], Sheona M Mitchell-Foster [1]

Results of a community-based cervical cancer screening pilot project using human papillomavirus self-sampling in Kampala, Uganda

Gina S. Ogilvie [a,*], Sheona Mitchell [b], Musa Sekikubo [c], Christine Biryabarema [c], Josaphat Byamugisha [c], Jose Jeronimo [d], Dianne Miller [b], Malcolm Steinberg [e], Deborah M. Money [b]

[a] *Department of Family Practice, University of British Columbia, Vancouver, Canada*
[b] *Department of Obstetrics and Gynecology, University of British Columbia, Vancouver, Canada*
[c] *Department of Obstetrics and Gynecology, Makerere University, Kampala, Uganda*
[d] *Program for Appropriate Technology in Health, Seattle, USA*
[e] *Faculty of Health Sciences, Simon Fraser University, Vancouver, Canada*

Self-collection based HPV testing for cervical cancer screening among women living with HIV in Uganda: a descriptive analysis of knowledge, intentions to screen and factors associated with HPV positivity

Sheona M Mitchell [1], Heather N Pedersen [1], Evelyn Eng Stime [1], Musa Sekikubo [2], Erin Moses [3], David Mwesigwa [4], Christine Biryabarema [2], Jan Christilaw [5], Josaphat K Byamugisha [2], Deborah M Money [3], Gina S Ogilvie [6 7 8]

Uptake of community-based, self-collected HPV testing vs. visual inspection with acetic acid for cervical cancer screening in Kampala, Uganda: preliminary results of a randomised controlled trial

Erin Moses [1], Heather N Pedersen [2], Sheona M Mitchell [2], Musa Sekikubo [3], David Mwesigwa [4], Joel Singer [2], Christine Biryabarema [3], Josaphat K Byamugisha [3], Deborah M Money [1 2], Gina S Ogilvie [1 2]

Community-based HPV self-collection versus visual inspection with acetic acid in Uganda: a cost-effectiveness analysis of the ASPIRE trial

Alex K Mezei,[1] Heather N Pedersen,[2] Stephen Sy,[3] Catherine Regan,[3] Sheona M Mitchell-Foster,[4] Josaphat Byamugisha,[5,6] Musa Sekikubo,[5,6] Heather Armstrong,[1] Angeli Rawat,[2] Joel Singer,[7,8] Gina S Ogilvie,[2] Jane J Kim,[3] Nicole G Campos[3]

Cost-effectiveness of cervical cancer screening methods in low- and middle-income countries: A systematic review

Alex K Mezei [1], Heather L Armstrong [2], Heather N Pedersen [2], Nicole G Campos [3], Sheona M Mitchell [4], Musa Sekikubo [5], Josaphat K Byamugisha [5], Jane J Kim [4], Stirling Bryan [6], Gina S Ogilvie [2]

Integrated cervical cancer screening in Mayuge District Uganda (ASPIRE Mayuge): a pragmatic sequential cluster randomized trial protocol

Carolyn Nakisige[1], Jessica Trawin[2], Sheona Mitchell-Foster[2,3], Beth A. Payne[2,4], Angeli Rawat[4], Nadia Mithani[3], Cathy Amuge[1], Heather Pedersen[5], Jackson Orem[1], Laurie Smith[2,6] and Gina Ogilvie[2,4,5*]

Considering rural women's and health care providers preferences

Facilitator

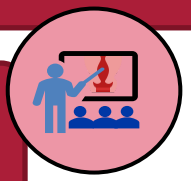
High awareness of need

"We shall accept because it is us who are affected, if it has happened to me then why shouldn't I accept?"

Laboratory staff already using GeneXpert for HIV and TB testing

Priority of Uganda Cancer Institute and MoH to improve service availability

Interest in skill development by nursing staff



Individual Level → **Facility Level** → **Health system Level**

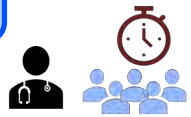
Barrier

Misinformation about supernatural causes of cervical cancer

Lack of transportation to few clinics with service

Perception of poor quality care for treatment

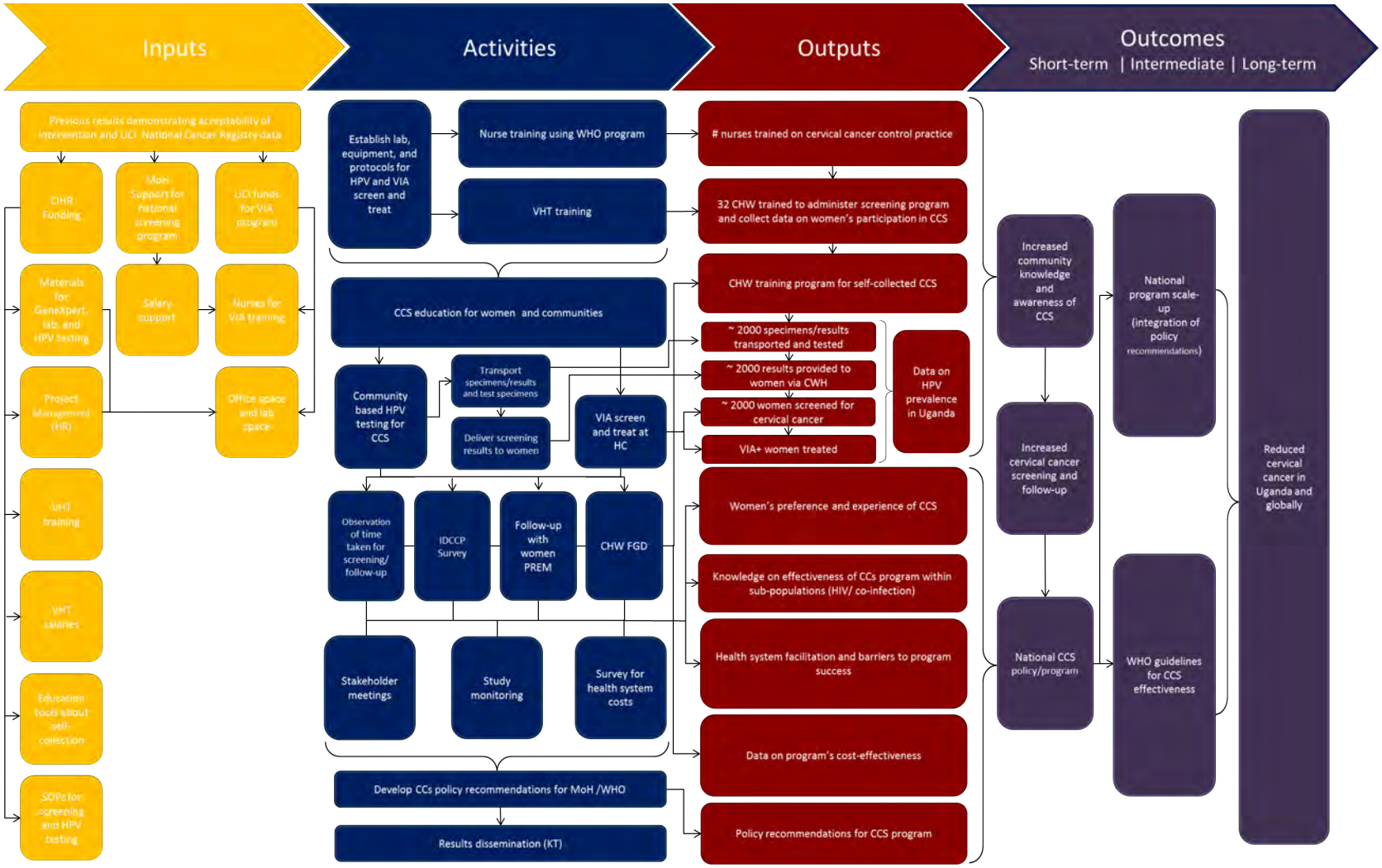
Long wait times



Human resource shortages

No established specimen transport mechanisms to laboratory

Program Planning – the ASPIRE Trial Logic Model



Assumptions: Training programs will be adopted and used as intended; Policy adoption will lead to individual behaviour change; VIA program will function as intended; treatment will be available when needed.

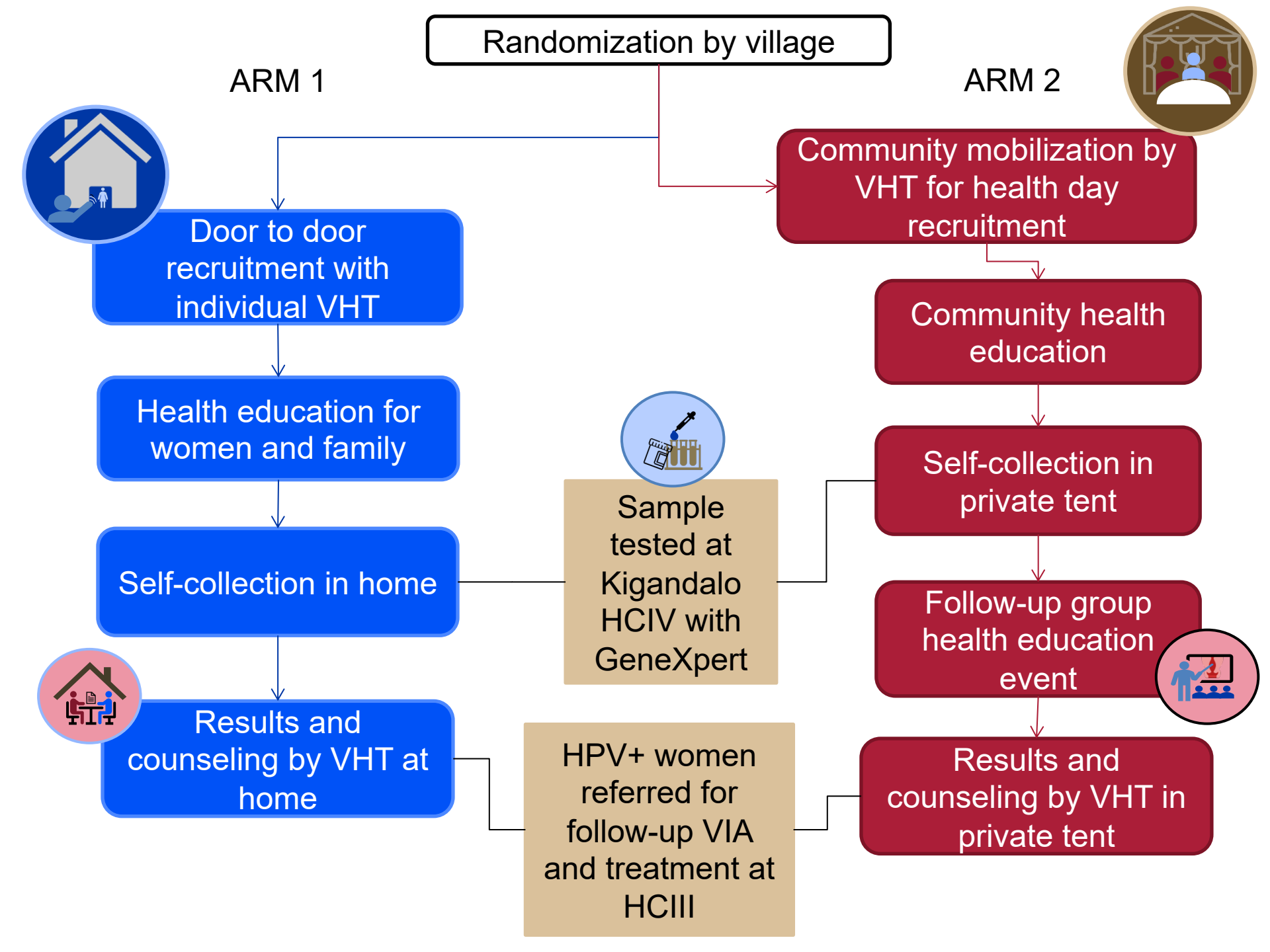
Contextual factors: Socioeconomic factors of target population; motivations and behaviour of the target population; attitudes, norms, beliefs of the target population.

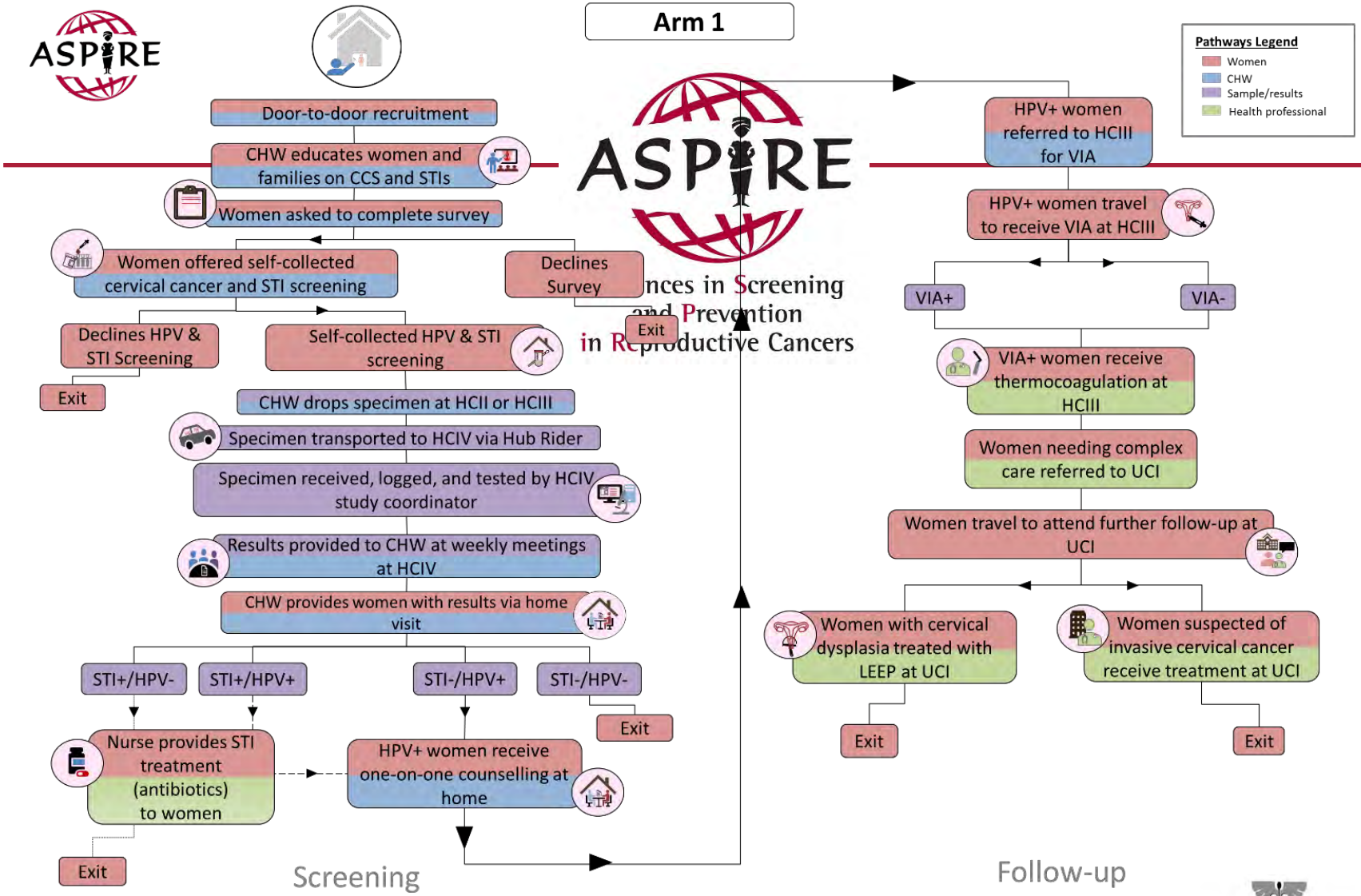
What is the ASPIRE Mayuge trial?

- A sequential, pragmatic, two arm cluster randomized clinical trial
- 31 villages randomized in Mayuge District, Eastern Uganda
- Aim is to determine the most effective method of community based cervical cancer screening for women in rural Uganda
- Secondary objectives to determine cost effectiveness and process evaluation following RE-AIM framework

Eligibility: Who can participate in sample self-collection for ASPIRE?

- ✓ women between the ages of 25-49 years old
- ✓ no previous hysterectomy or cervical cancer history
- ✓ who have not previously been treated for cervical cancer


Randomization by village
ARM 1
ARM 2
Door to door recruitment with individual VHT
Health education for women and family
Self-collection in home
Results and counseling by VHT at home
Community mobilization by VHT for health day recruitment
Community health education
Self-collection in private tent
Follow-up group health education event
Results and counseling by VHT in private tent
Sample tested at Kigandalo HCIV with GeneXpert
HPV+ women referred for follow-up VIA and treatment at HCIII



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Build Local Partnerships And Leverage Existing Resources

Adapting to the Agile Nature of the Research Environment and COVID-19

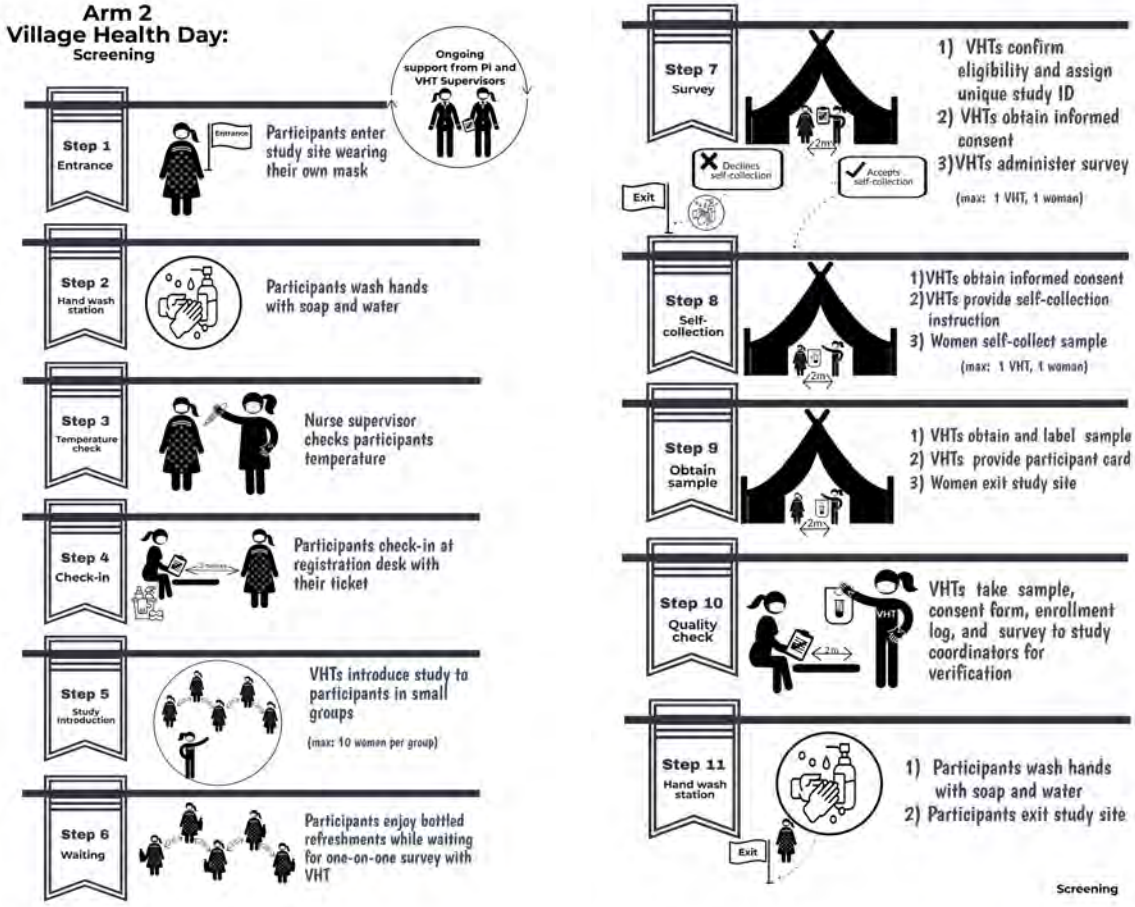
Key:

- Strong partnerships at community and health system level

Example:

- Local partnerships were integral to resumption of research during COVID-19 pandemic
  - Essential updates on local situation and lockdown measures
  - Advocate for resumption with ethics committee
  - Guidance on safety plan development and adjustments to standard operating procedures to meet standards of new research environment
  - Link to both community and health system to ensure plans reflect needs of both and maintain overall research aims

Arm 2 process adapted to COVID-19



Status update

- Recruitment for Arm 1 complete between August 7, 2019 – December 20, 2019
- 1055 now enrolled and tested
- Ongoing VIA follow-up being monitored
- Resumption of research now approved and Arm 2 expected to start in September

Discussion

- Recruitment to Arm 1 exceeded expectations in pace
- Community support is high
- HR-HPV is common and dominated by types not impacted by the use of the quadravalent vaccine
- Suggests screening is critical to Ugandan strategy for elimination of cervical cancer

Thank you!

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BC Centre for Disease Control
Provincial Health Services Authority
BC CANCER
Provincial Health Services Authority
CIHR IRSC
Global Control of HPV Related Diseases and Cancer

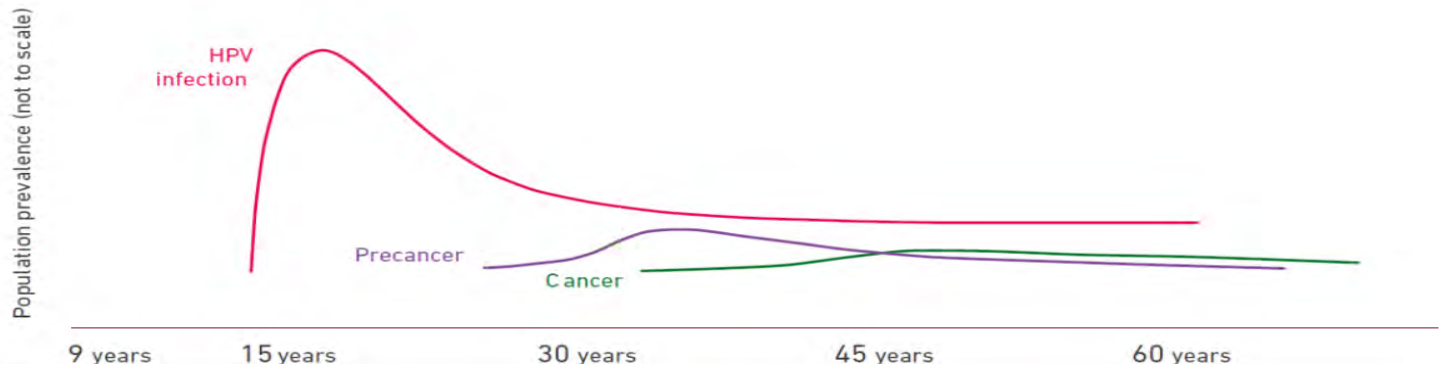
Background

- The World Health Organization has called cervical cancer one of the ‘gravest threats to women’s lives.’
- Uganda has one of the highest cervical cancer incidence rates in the world (54.8 per 100,000).
- Specific high-risk subtypes of human papillomavirus (HR-HPV) are established as the cause of cervical cancer.

Process Evaluation Strategy Using RE-AIM Framework

Research Objective	Research Question	RE-AIM Outcome	Outcomes	Data Analysis Approach
Primary Objective				
Self-collected cervical cancer screening effectiveness				
To compare the effectiveness of two self-collected CCS models at improving VIA follow-up: community health worker recruitment (door-to-door) versus community health day.	Which of the two self-collected CCS models is more effective at improving VIA follow-up among screened women: door-to-door screening or community health days?	Effectiveness (Individual level)	Primary Outcome: Follow-up attendance for VIA screening at a designated Health Center after a positive HR-HPV test out of all participants screened per arm	Quantitative analysis of clinical data: Mixed effect model with cluster as a random intercept and adjusted for all known confounders. Intention to treat and sensitivity analysis; Multivariate logistic regression
	What is the effect of screening model on CCS knowledge retention and follow-up uptake? Are women aware of cervical cancer and how knowledgeable are they about CCS?	Effectiveness (Individual level)	Mean CCS knowledge scores; cervical cancer awareness;	Quantitative analysis of survey data: multi-level Poisson model;

WHO Life-course Approach To Cervical Cancer Control



Primary Prevention

Girls 9-14 years
- HPV vaccination

Girls and boys, as appropriate
- Health information and warnings about tobacco use
- Sexuality education tailored to age & culture
- Condom promotion/provision for those engaged in sexual activity
- Male circumcision

Secondary Prevention

Women > 30 years of age

"Screen and treat" – single visit approach

- Point-of-care rapid HPV testing for high risk HPV types
- Followed by immediate treatment
- On site treatment

Tertiary Prevention

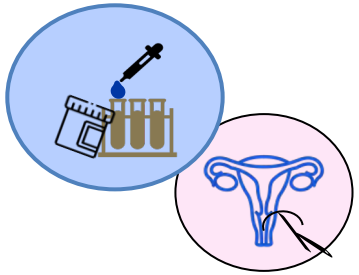
All women as needed

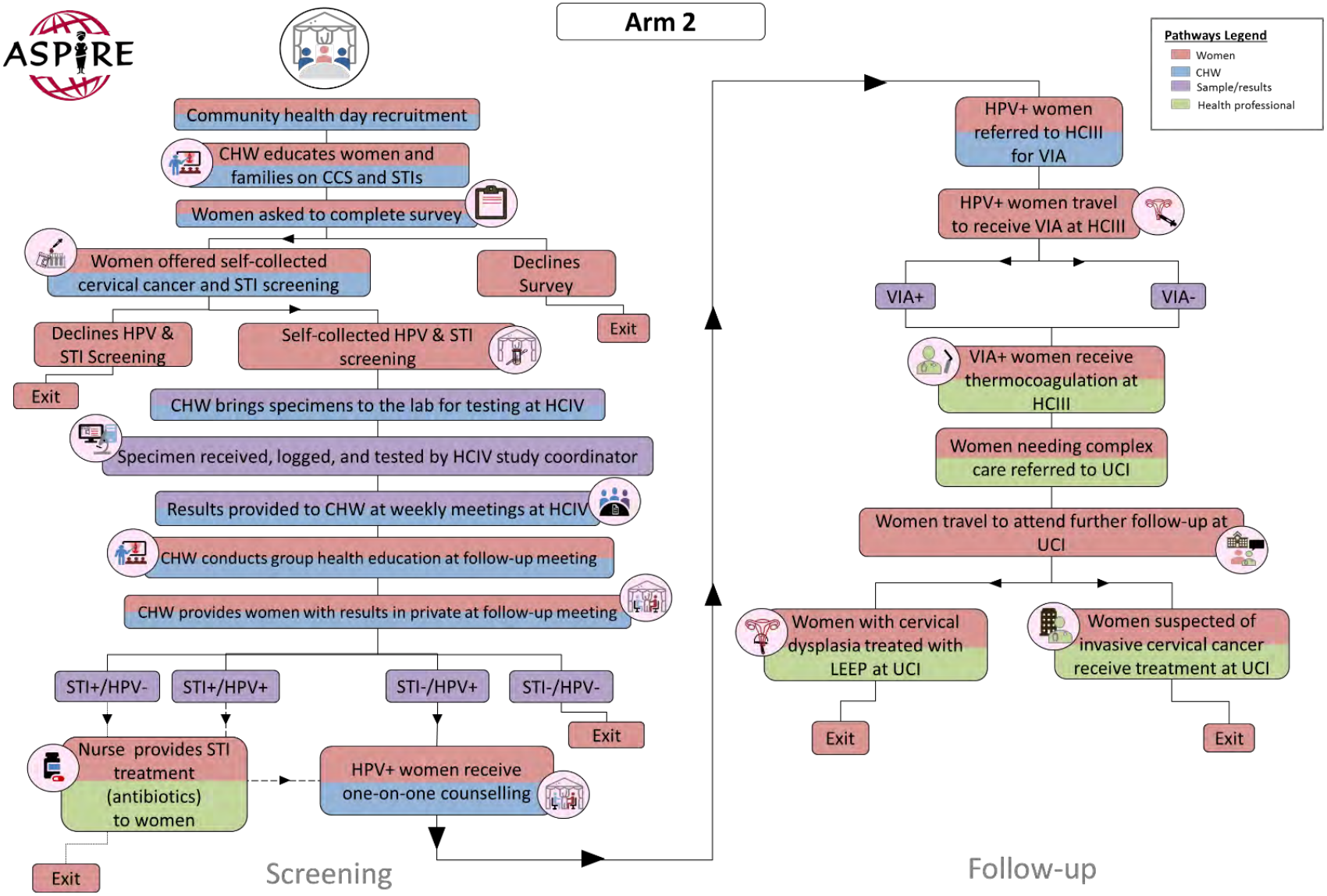
Treatment of invasive cancer at any age and palliative care
- Ablative surgery
- Radiotherapy
- Chemotherapy
- *Palliative Care*

Current Evidence for Self-collected HPV Testing as Primary Screening Method For LMICs

Three trials: India; Mexico and South Africa

- Self-collected HR-HPV testing led to higher screening uptake
- 3.4 x higher detection of CIN2+ than Pap
- Higher specificity for CIN2+ than VIA or Pap




Arm 2
Pathways Legend
Women
CHW
Sample/results
Health professional
Community health day recruitment
CHW educates women and families on CCS and STIs
Women asked to complete survey
Women offered self-collected cervical cancer and STI screening
Declines Survey
Exit
Declines HPV & STI Screening
Exit
Self-collected HPV & STI screening
CHW brings specimens to the lab for testing at HCIV
Specimen received, logged, and tested by HCIV study coordinator
Results provided to CHW at weekly meetings at HCIV
CHW conducts group health education at follow-up meeting
CHW provides women with results in private at follow-up meeting
STI+/HPV-
STI+/HPV+
STI-/HPV+
STI-/HPV-
Exit
Nurse provides STI treatment (antibiotics) to women
Exit
HPV+ women receive one-on-one counselling
Screening
HPV+ women referred to HCIII for VIA
HPV+ women travel to receive VIA at HCIII
VIA+
VIA-
VIA+ women receive thermocoagulation at HCIII
Women needing complex care referred to UCI
Women travel to attend further follow-up at UCI
Women with cervical dysplasia treated with LEEP at UCI
Exit
Women suspected of invasive cervical cancer receive treatment at UCI
Exit
Follow-up

Cervical Cancer Prevention in El Salvador (CAPE): Lessons in developing and implementing a primary HPV screening program in a low-middle-income country

Karla Alfaro
Basic Health International
August 12th, 2020

Basic Health International

Conflict of Interest

I have no commercial relationship with any corporate entity that produces or sells products related to HPV testing.

Presentation outline

- *State of cervical cancer control in El Salvador pre-CAPE*
- *Steps leading to the development of CAPE*
- *Steps involved in building and delivering a screening program in a limited-resource setting.*
- *National Scale-up*
- *Challenges*

Cervical Cancer Control in El Salvador pre-CAPE

bhi Basic Health International

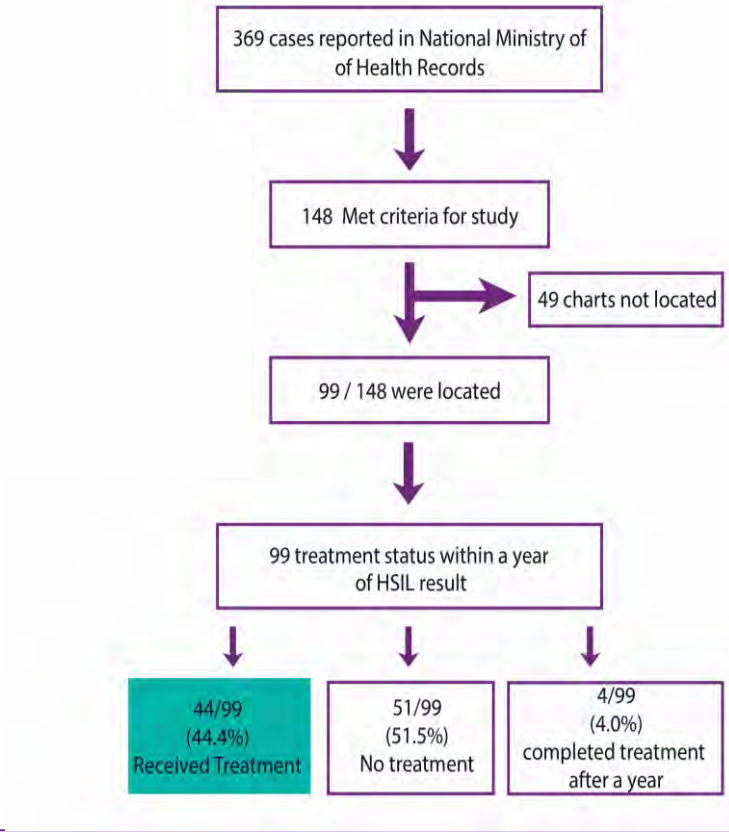
Cervical cancer in Latin America

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[a]	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

R. Murillo et al. / Vaccine 26S (2008) L37–L48

Pre-CAPE: 1-year follow-up after cytology-based screening (2010)



Steps leading to CAPE

Basic Health International

Introduction of HPV-based screening in El Salvador

MOH and BHI partnered to present a proposal for the implementation of a low-cost HPV through a donation program .

Consultants from NCI, PAHO, National OBGYN and Pathology societies were involved in the process.

In 2011 we received the approval to implement HPV as part as a pilot project.

CAPE: Cervical Cancer Prevention in El Salvador

Building and delivering a screening program in a limited-resource setting

bhi Basic Health International

CAPE Cervical Cancer Prevention in El Salvador

Three phase project:

Phase 1: 2,000 women (2012-2013)

Phase 2: 8,000 women (2013-2014)

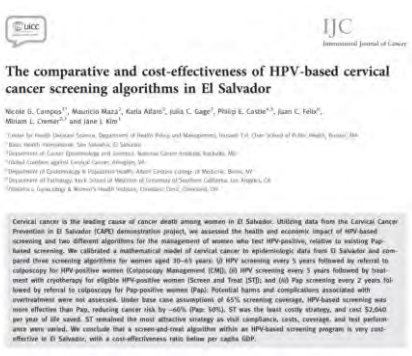
Phase 3: 20,000 women (2015-2017)

Nested Studies

ORIGINAL RESEARCH ARTICLE: CERVIX AND HPV

OPEN

Introducing a High-Risk HPV DNA Test Into a Public Sector Screening Program in El Salvador

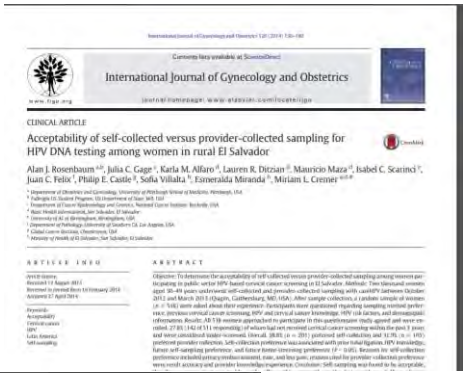


IJC
International Journal of Cancer

The comparative and cost-effectiveness of HPV-based cervical cancer screening algorithms in El Salvador

Nicole G. Campos[1], Mauricio Maza[2], Karla Alfaro[2], Julia C. Gage[3], Philip E. Castle[3,4], Juan C. Felix[2], Miriam L. Cremer[2,5] and Jane J. Kim[1]

Cervical cancer is the leading cause of cancer death among women in El Salvador. Utilizing data from the Cervical Cancer Prevention in El Salvador (CAPE) demonstration project, we assessed the health and economic impact of HPV-based screening and two different algorithms for the management of women who test HPV-positive, relative to existing Pap-based screening. We calibrated a mathematical model of cervical cancer to epidemiologic data from El Salvador and compared three screening algorithms for women aged 30–65 years: (i) HPV screening every 5 years followed by referral to colposcopy for HPV-positive women (Colposcopy Management (CM)), (ii) HPV screening every 5 years followed by treatment with cryotherapy for eligible HPV-positive women (Screen and Treat (ST)), and (iii) Pap screening every 2 years followed by referral to colposcopy for Pap-positive women (Pap). Potential harms and complications associated with overtreatment were not assessed. Under base case assumptions of 65% screening coverage, HPV-based screening was more effective than Pap, reducing cancer risk by ~66% (Pap: 34%). ST was the least costly strategy, and cost $2,040 per year of life saved. ST remained the most attractive strategy as visit compliance, costs, coverage, and test performance were varied. We conclude that a screen-and-treat algorithm within an HPV-based screening program is very cost-effective in El Salvador, with a cost-effectiveness ratio below per capita GDP.



International Journal of Gynecology and Obstetrics

CLINICAL ARTICLE

Acceptability of self-collected versus provider-collected sampling for HPV DNA testing among women in rural El Salvador

Alan J. Rosenbaum[a,b], Julia C. Gage[c], Karla M. Alfaro[d], Lauren R. Ditzian[d], Mauricio Maza[d], Isabel C. Scarinci[e], Juan C. Felix[f], Philip E. Castle[g], Sofia Villalta[h], Esmeralda Miranda[h], Miriam L. Cremer[a,d,i,*]

ARTICLE INFO

ABSTRACT

ORIGINAL RESEARCH ARTICLES: CERVIX AND HPV

Scale-Up of an Human Papillomavirus Testing Implementation Program in El Salvador

International Journal of Gynecology and Obstetrics

CLINICAL ARTICLE

Acceptability of self-collected versus provider-collected sampling for HPV DNA testing among women in rural El Salvador

Alan J. Rosenbaum[a,b], Julia C. Gage[c], Karla M. Alfaro[d], Lauren R. Ditzian[d], Mauricio Maza[d], Isabel C. Scarinci[e], Juan C. Felix[f], Philip E. Castle[g], Sofia Villalta[h], Esmeralda Miranda[h], Miriam L. Cremer[a,d,i,*]

ARTICLE INFO

ABSTRACT

Cost-Effectiveness Results

- Screening with a low-cost HPV test provides *greater health benefits* than current Pap smear screening.
- Routine screening with this low-cost HPV test (every 5y) is *cost-effective* compared to Pap testing (every 2y).
- Screening with low cost HPV test followed by visual assessment triage is *more effective and less costly* than low cost HPV test with colposcopy triage

Presenting results

Changing the paradigm

Meeting

Meeting

Meeting

Meeting

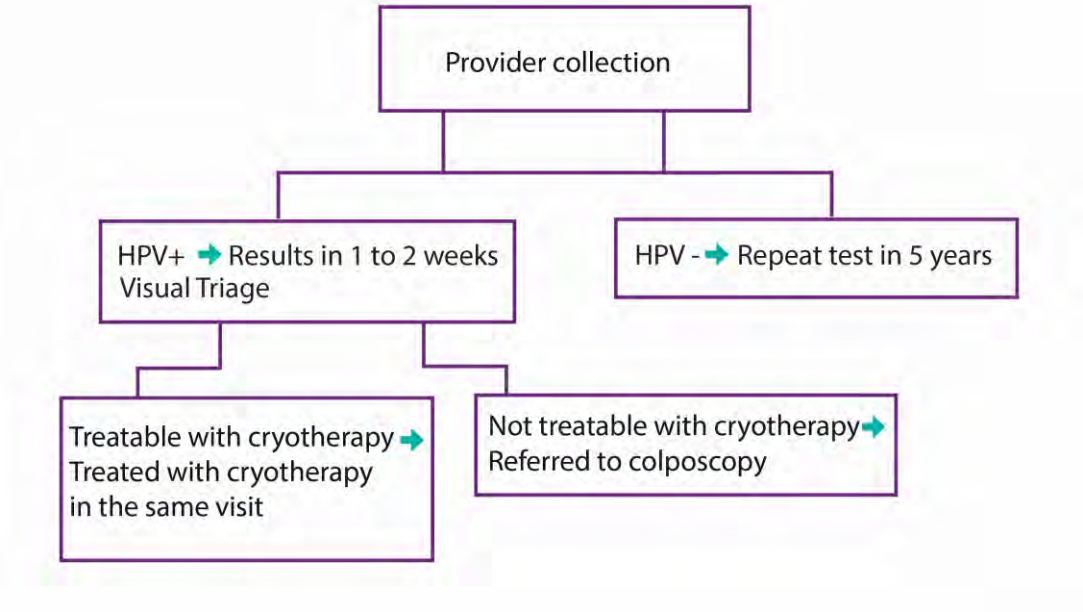
Meeting

Sustainable change

December 2015

As a result of CAPE, the El Salvador MOH changed its cervical cancer guidelines to include HPV test and the proposed treatment algorithm.

Visual Assesment Triage (VAT)



Screening forms

MINISTERIO DE SALUD - VICEMINISTERIO DE SERVICIOS DE SALUD
UNIDAD NACIONAL DE CANCER
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 ☐ Fecha: ___/___/___
Subsecuente Vigente ☐ Fecha: ___/___/___
Subsecuente atrasada ☐ Fecha: ___/___/___
Control pos tratamiento ☐ 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 vaginalis
- ☐ Microorganismos micóticos compatibles con Cándida sp
- ☐ Microorganismos micóticos compatibles con Torulopsis sp
- ☐ 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

- ☐ Celularidad inadecuada
- ☐ Fijación/preservación inadecuada
- ☐ Material extraño
- ☐ Inflamación
- ☐ Sangre
- ☐ Citolisis
- ☐ Ausencia zona de transformación
- ☐ Lámina quebrada
- ☐ Falta información clínica
- ☐ Identificación inadecuada

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 sitú
- ☐ 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: _____

NUMERO DE PRUEBA DE VPH: _____
FECHA: _____
POSITIVO _____ **NEGATIVO** _____
Nombre, Firma y Sello responsable lectura VPH:

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: _____

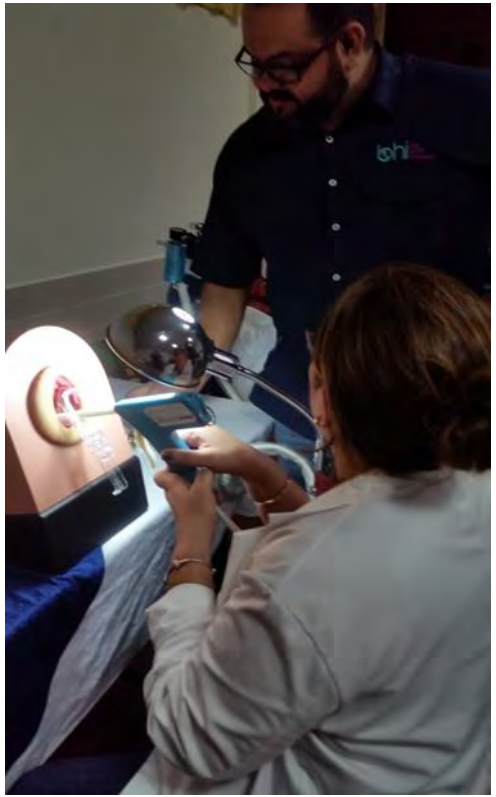
NUMERO DE PRUEBA DE VPH: _____
FECHA: _____
POSITIVO _____ **NEGATIVO** _____
Nombre, Firma y Sello responsable lectura VPH:

Building a Surveillance System in El Salvador

Indicadores
Indicador
Numero de mujeres con pruebas de VPH y PAP realizadas
Numero de mujeres con pruebas de VPH y PAP positivas
Numero de mujeres con pruebas de VPH positivas que asistieron a evaluacion visual
Numero de mujeres con pruebas de VPH positivas que fueron elegibles para crioterapias
Numero de mujeres con pruebas de VPH positivas que fueron referidas a colposcopia
Numero de mujeres con pruebas de VPH positivas a quienes se les realizo colposcopia
Numero de mujeres con pruebas de PAP positivas a quienes se les realizo colposcopia
Numero de mujeres a quienes se les practico crioterapia despues de evaluacion colposcopica
Numero de mujeres con biopsia cervico uterinas positivas
Numero de mujeres a quienes se les practico cono leep

Training sessions

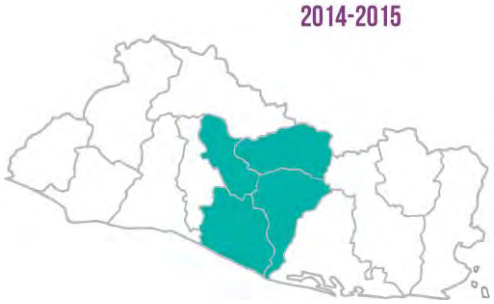
Visual assessment triage and cryotherapy



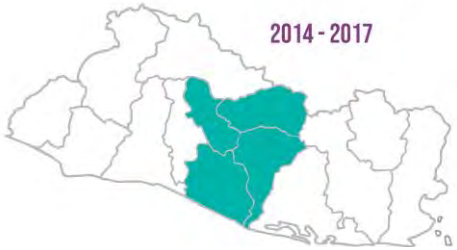
National scale-up

December 2018

Expectations



Reality



Total of health personnel trained 2012-2020

Health Personnel	Total
Health Promoters	2,655
Nurses	1,230
Doctors	869
Total	**4,754**

Total of women screened 2012-2020

Period of time	Total of Screenings
2012-2017 Pilot	29,139
2018-2020(Octubre-Diciembre)	64,690
Total	**93,829**

Challenges

-Reluctance by local stakeholders to change cytology-based screening program to HPV testing

-Loss to follow-up increased as program expanded

-Long intervals between program steps

-Advocate for ways to conduct implementation research

in limited resource settings **BASED ON YOUR RESEARCH FINDINGS**

Impact of COVID19 in Cervical Cancer Program

- Health services are focusing to combat the pandemic.
- Occidental and Oriental Region: women pending of treatment
- Delay implementing HPV testing in Central and continuing in Paracentral region
  - 80,000 women schedule to be screened in 2020
  - New possible target to screen 40,000
  - Self Sampling to be added in the national guidelines

Thank you

CUGH & NCI Cervical Cancer Webinar 3: Ensuring effective implementation of cervical cancer prevention and control strategies

August 12, 2020

11:00am-12:00pm EDT

Silvina Arrossi, PhD
Centro de Estudios de Estado Sociedad
Buenos Aires, Argentina

Gina Ogilvie, MD MSc FCFP DrPH
Canada Research Chair in Global Control of HPV-Related Disease and Cancer,
Senior Public Health Scientist, School of Population and Public Health
The University of British Columbia

Karla Alfaro, MD, MPH
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Co-Moderator

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