



République du Cameroun
Ministère de la Santé Publique



UNIVERSITÉ
DE GENÈVE
FACULTÉ DE MÉDECINE

*20 années de lutte contre le cancer du col utérin en Afrique subsaharienne:
collaboration médicale entre Genève et Yaoundé*

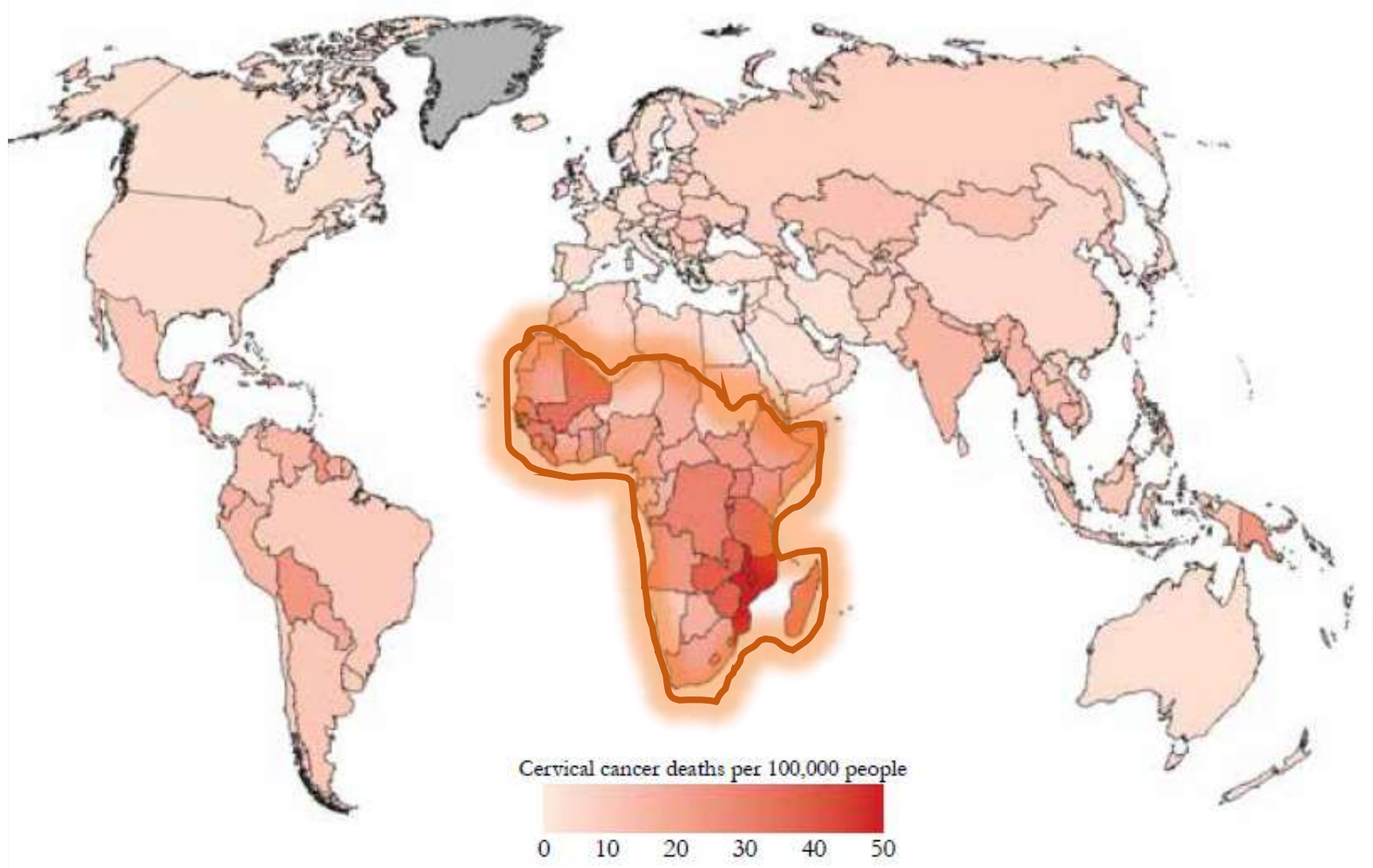
Pierre Vassilakos, MD



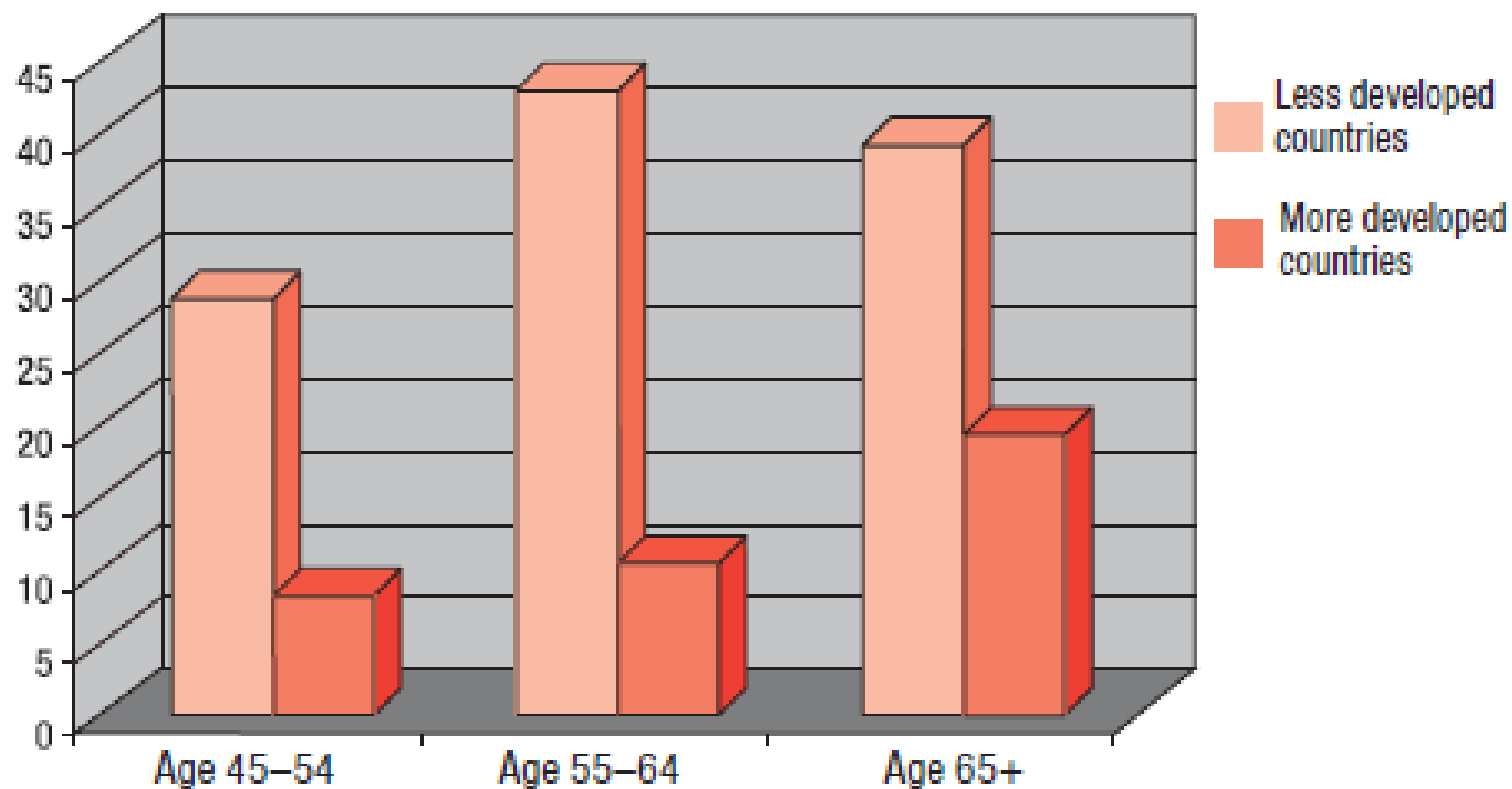
**9TH INTERNATIONAL CONGRESS ON CERVICAL CANCER
IN SUB-SAHARAN AFRICA**

*Faculty of Medicine and Pharmaceutical Sciences – University of Dschang -
March 29 – 30, 2018*

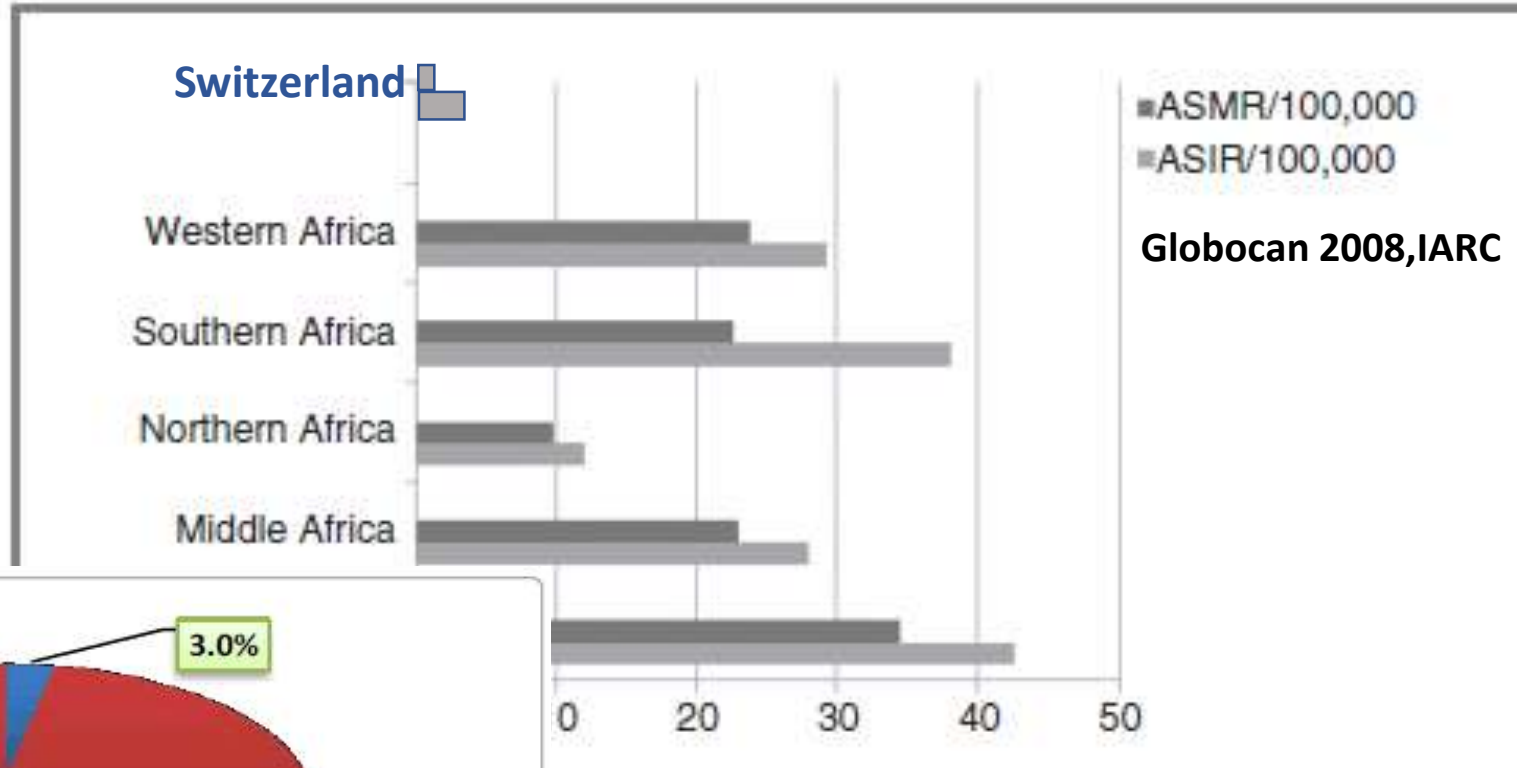
Estimated cervical cancer mortality in 2012 by country (Source: Globocan 2012).



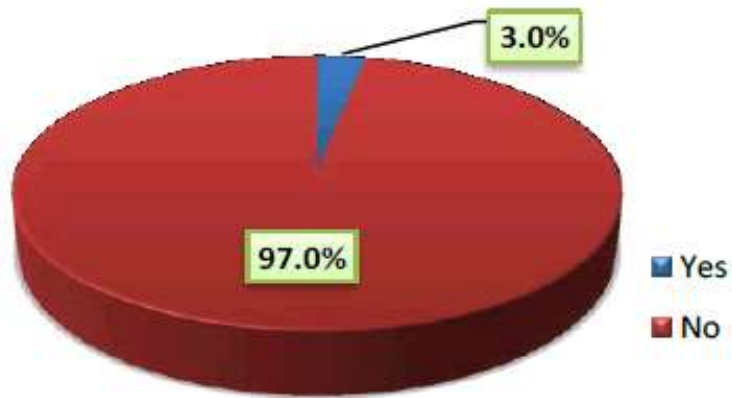
Age-specific cervical cancer mortality rates per 100 000 women



Source: Globocan 2002 (WHO/IARC)



Globocan 2008, IARC



Screened for cervical cancer prior to diagnosis

Figure 2: Screening for cervical cancer by respondents prior to diagnosis.

Cervical cancer screening (Population coverage)

- Switzerland 75%
- subSaharan Africa : 5%



*20 years of fight against cervical cancer
in sub Saharan Africa:*

Medical collaboration between Geneva and Yaounde



**Planning, Implementation,
Community information and Education**

1997

2009

**Monitoring, Evaluation
and Optimization**

2010

2017

First screening campaign in 1997 Bafang, Cameroon



First screening campaign in 1997 Bafang, Cameroon



Feasibility of cytology-based cervical cancer screening in rural Cameroon.

Acta Cytologica 2002 ; 46 : 1110-1116

[Romaine Robyr](#), [Saloney Nazeer](#), [Pierre Vassilakos](#), [Juan Carlos Matute](#), [Zacharie Sando](#), [Gregory Halle](#), [André Mbakop](#), [Aldo Campana](#)

Department of Obstetrics and Gynecology, Geneva University Hospital, Geneva, Switzerland.

Department of Pathology, Yaounde Central Hospital, Yaounde, Cameroun



Conclusion

“A population-based cytologic screening program for cervical cancer would not be feasible in rural Cameroon because of high cost, low quality and limited technical facilities. Rural Africa requires an algorithm using a simple, low-cost technique of mass screening”

Requirements for a successful cytology-based screening program

Pap smear

- Continuous supplies: sampling instruments, slides, fixatives, reagents, cover slips, processing equipment, microscopes
- Well-trained technicians (to process and read the slides) and pathologists (to review abnormal slides)
- Continuous monitoring to maintain high quality results
- Cost is generally prohibitive for most women in low-resource settings

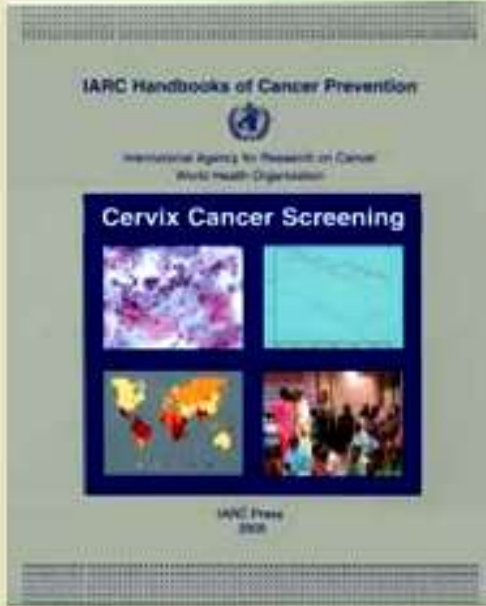
Requirements for a successful cytology-based screening program

Health Services

- Community information and invitation to attend screening;
Registries of women who have been screened;
Referral, follow-up and recall service
- Colposcopic and anatomo-pathologic services
- Education training and evaluation for colposcopists
- Treatment for women with invasive cervical cancer identified through the screening process

VISUAL INSPECTION WITH ACETIC ACID

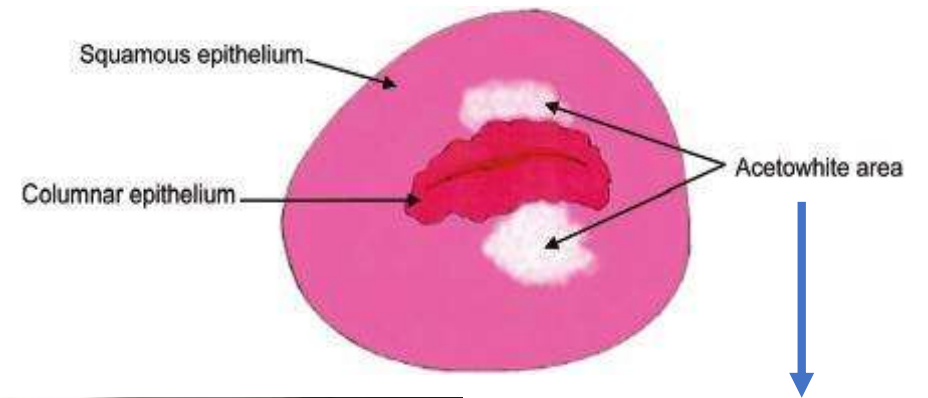
VIA



“VIA is a good alternative for settings where conventional cytology is not well implemented.”
–IARC/WHO, 2005

IARC, WHO. IARC Handbooks of Cancer Prevention: Cervical Cancer Screening. Volume 10. IARC Press; 2005.

Screen and treat program



Cryotherapy and/or LEEP



Community Information and Education



Mccarey C et al. [Awareness of HPV and cervical cancer prevention among Cameroonian healthcare workers](#). BMC Women's Health 2011;11:45

1. Training of health staff in VIA/VILI and treatment
2. Introduction of smartphone to optimize VIA/VILI
3. Introduction of HPV primary screening
4. Introduction of thermoablation
5. Introduction of mobile health data collection system



Planning, Implementation,
Community information and Education

1997

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Monitoring, Evaluation
and Optimization

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2017

TRAINING

<http://www.gfmer.ch/vic/>

Comprehensive Visual Inspection of the Cervix with Acetic Acid (VIA) and Lugol's Iodine (VILI)



- Module 1: Anatomy of the cervix, squamocolumnar junction, metaplastic change and transformation zone
- Module 2: Basic knowledge for cervical cancer screening using VIA, VILI and HPV test
- Module 3: Treatment of VIA/VILI positive cases
- Module 4: How to proceed
- Module 5: Quality assurance of visual inspection of the cervix

TRAINING

<http://www.gfmer.ch/vic/>



Knowledge assessment test & invitation to participate in a study aiming to improve VIA/VILI criteria for the diagnosis of precancer

INTRODUCTION OF SMARTPHONE



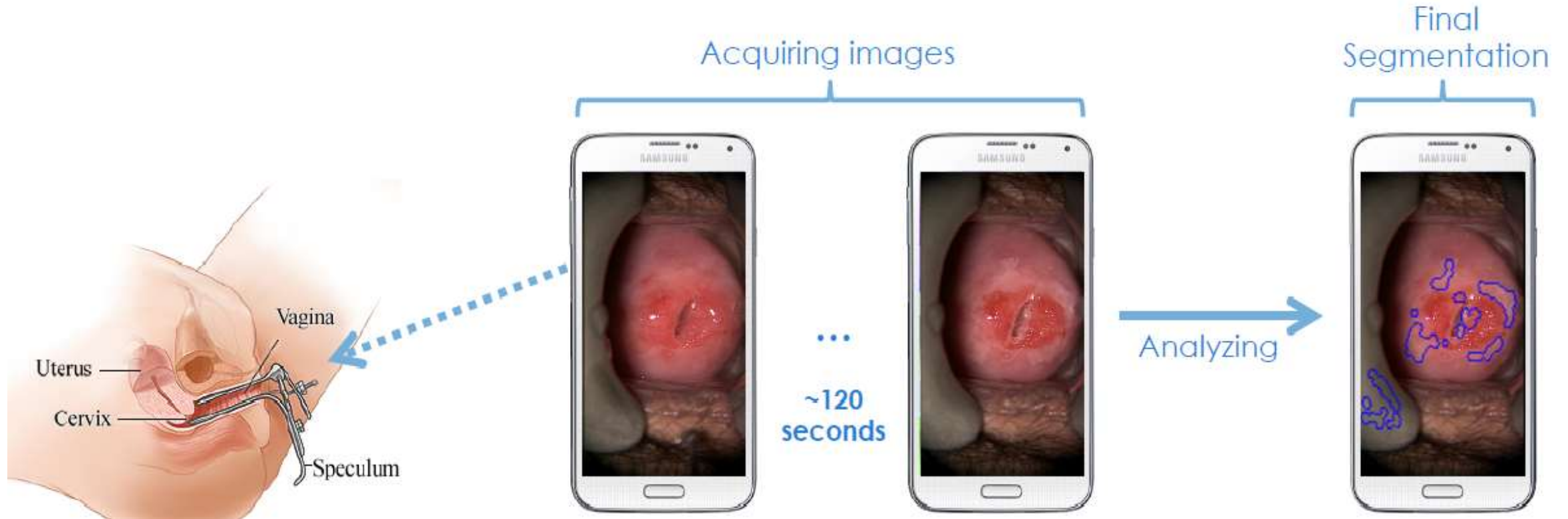
INTRODUCTION OF SMARTPHONE

Education of woman about findings



INTRODUCTION OF SMARTPHONE

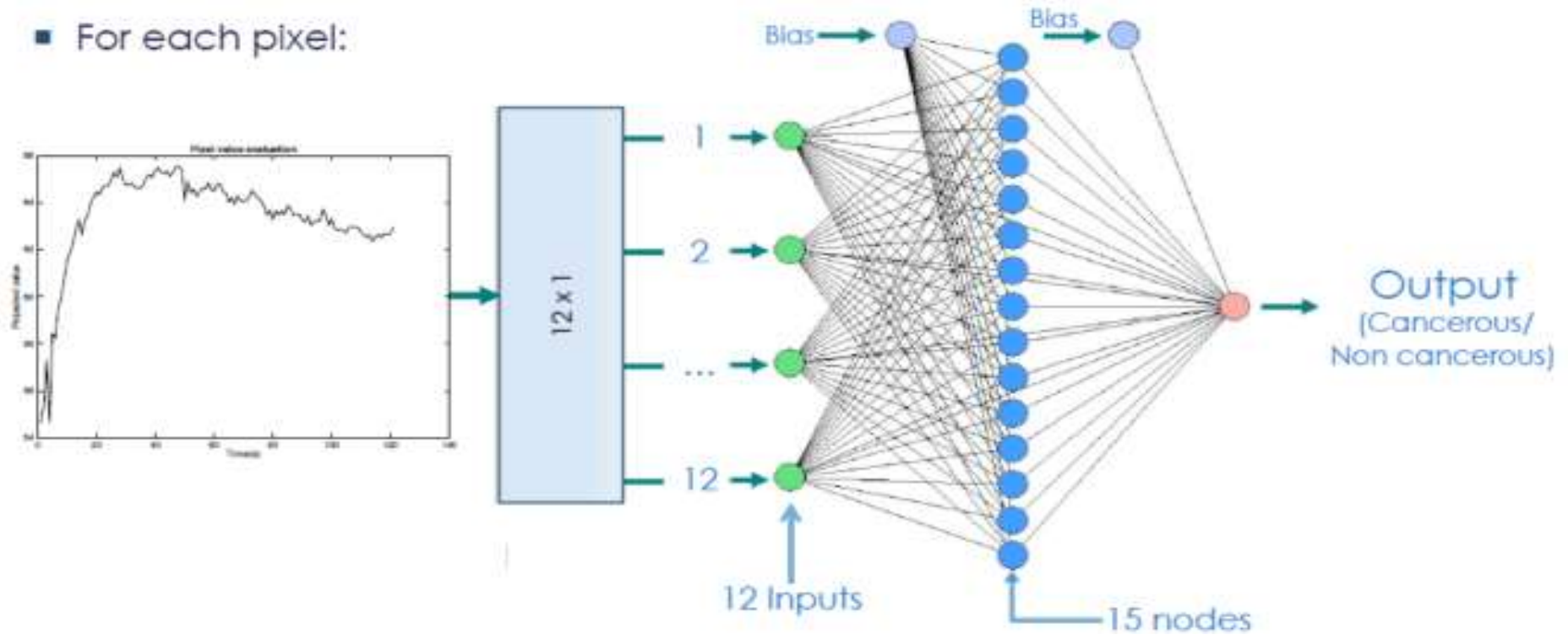
Image recognition software to classify cervical lesions



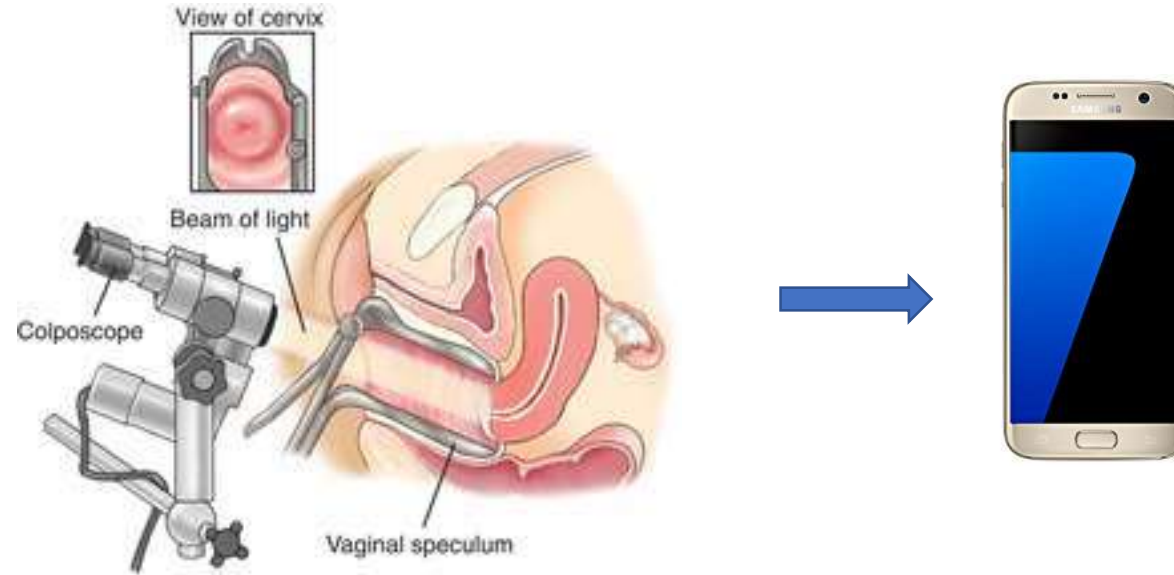
INTRODUCTION OF SMARTPHONE

Artificial Neural Network

■ For each pixel:



Smartphone Use for Cervical Cancer Screening in Low-Resource Countries



«Smartscopy» is a good alternative to colposcopy



Smartphone Use for Cervical Cancer Screening in Low-Resource Countries

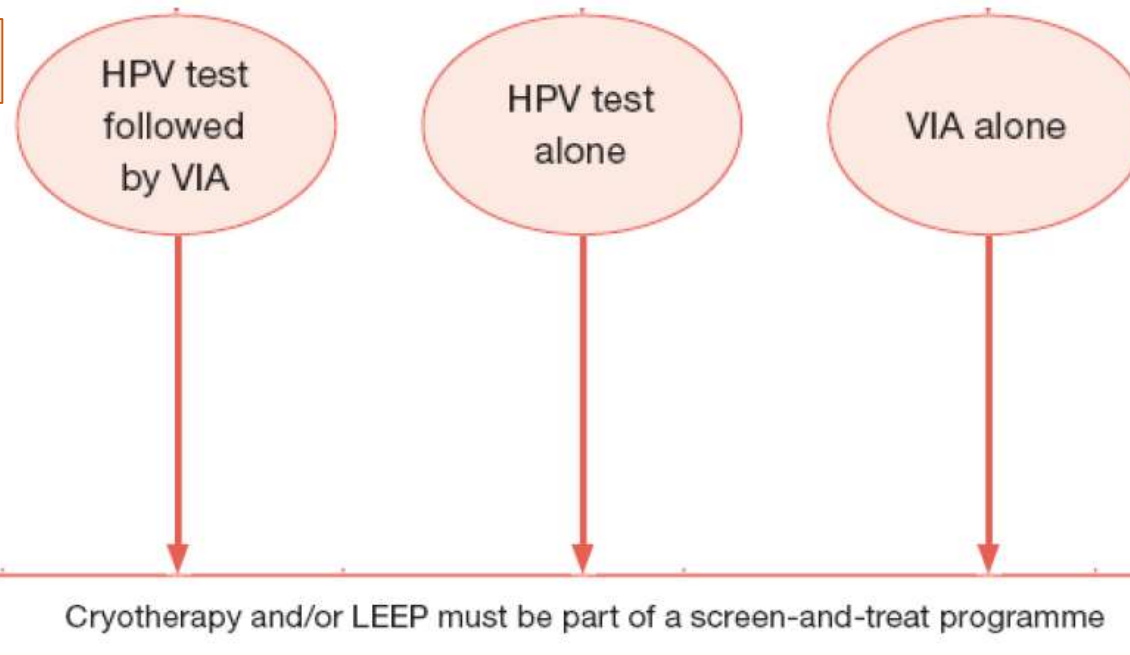
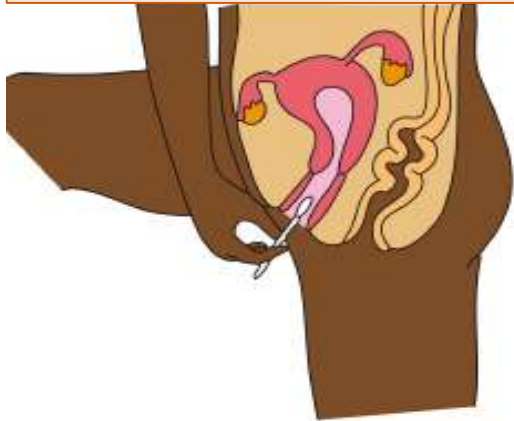


- Cellular phone produce high resolution images of good quality, which may be used to perform magnified examination of the cervix and potentially improve the performance of VIA
- Real time and near real-time expert consultation and telediagnosis
- Permanent photos stored in the patient record
- Education (photos for review meetings and case studies)

INTRODUCTION OF HPV PRIMARY SCREENING

WHO recommended screen and treat algorithms

HPV self-screening test



WHO 2013

WHO guidelines
WHO guidelines for screening and treatment of precancerous lesions for cervical cancer prevention



<http://www.who.int/reproductivehealth/topics/cancers/>

INTRODUCTION OF HPV PRIMARY SCREENING

Point- Of- Care HPV assay

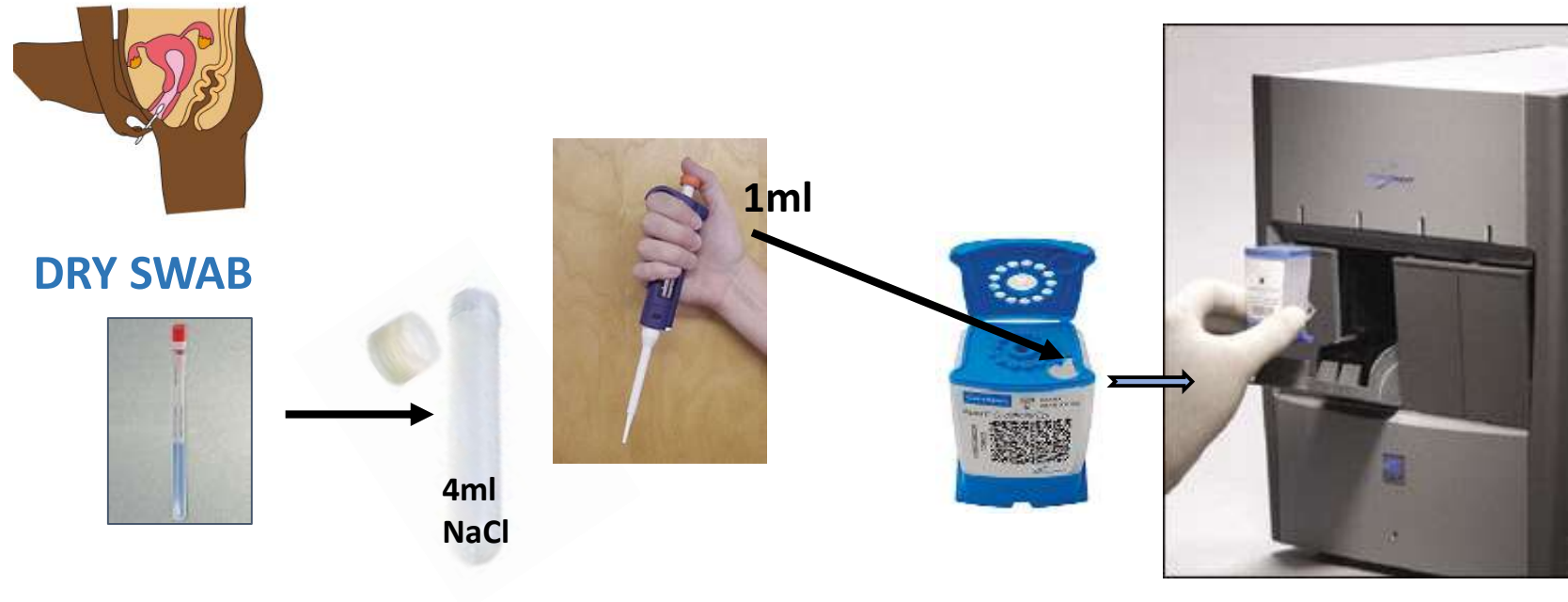


Xpert® HPV Assay

Single use Cartridge technology.
Rapid (≈ 60 min), qualitative, real-time PCR test: 14 high-risk HPV types & simultaneous genotyping of HPV 16/18 45

INTRODUCTION OF HPV PRIMARY SCREENING

Xpert® HPV Assay Workflow



3T Strategy : same day Test-Triage-Treat

Dry self-sample



women 30-49 years

Rapid PCR HPV test



HPV
Positive

Triage: VIA/VILI



positive → Treat

negative → Follow-up 1 year

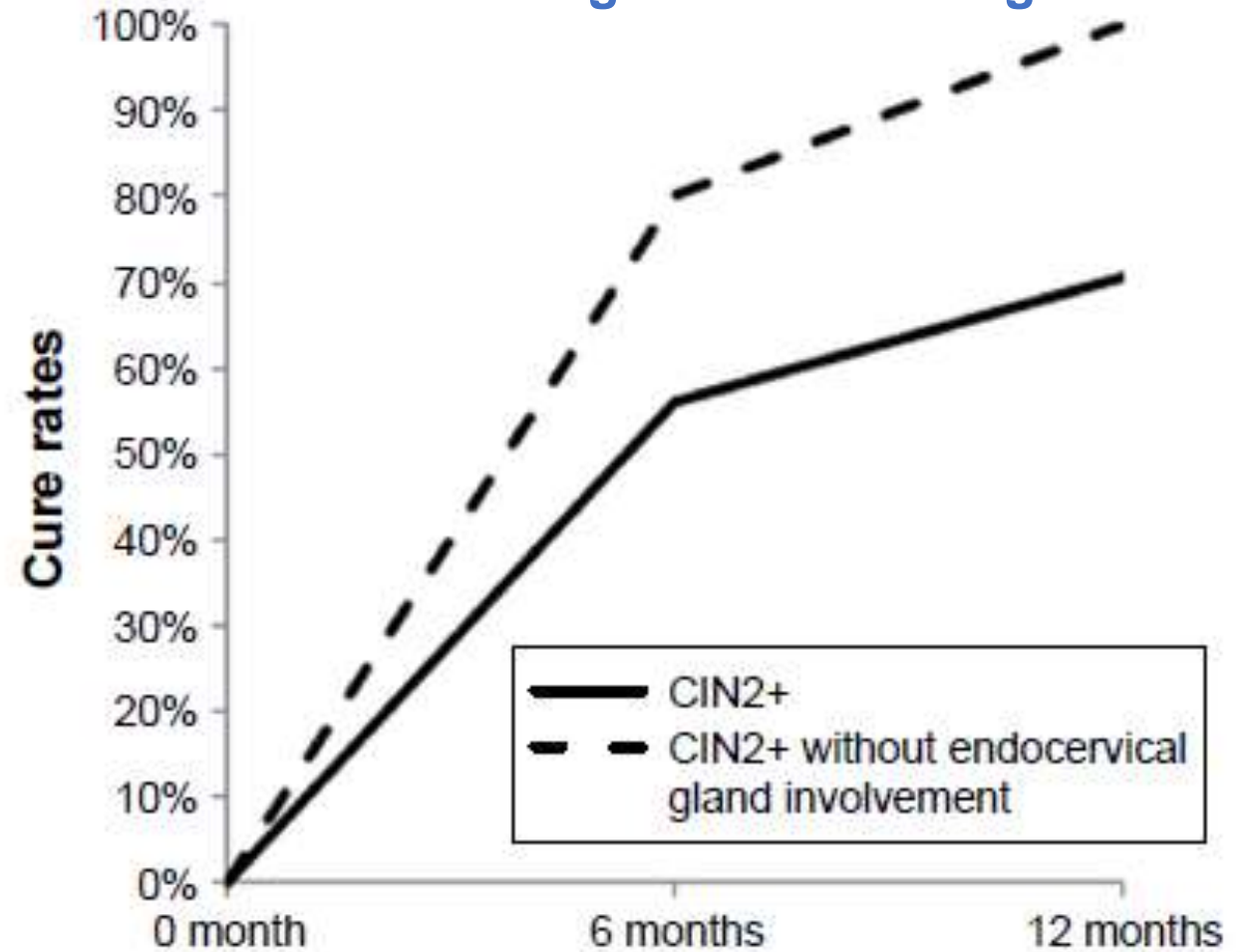
HPV
Négative

Screening after 5-10 years

INTRODUCTION OF THERMOABLATION for the treatment of precancerous lesions

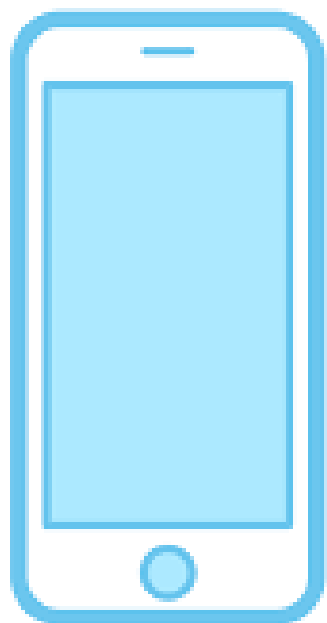


Cure rates after thermoablation according to baseline diagnosis



Tran PL, International Journal of Women's Health 2017:9


INTRODUCTION OF MOBILE HEALTH DATA COLLECTION SYSTEM




J'ai pr
avanta
projet

Nom:
Préno




Signe







Test VIA




Coloration avec Acetic acid

Négatif	Positif	Suspicion Cancer
		







  




Test VILI



Coloration avec Lugol Iodine

Négatif	Positif	Suspicion Cancer
		



INTRODUCTION OF MOBILE HEALTH DATA COLLECTION SYSTEM

Data recording and transfer to the Statistical and Data Management Unit



Médecins :

Baumann F, Benski AC, Bongoe A, Catarino R, Doh AS, Dongui G, Fokom-Domgue J, Fouogue JT, Halle-Ekane G, Herniainasolo JL, Kenfack B, Kenge-Fosso G, Matute J, McCarey C, Meyer-Hamme U, Navaria I, Nazeer S, Negulescu R, Petignat P, Sando Z, Scaringella S, Schafer S, Schmidt N, Tebeu PM, Temogne L, Tincho EF, Tran PhL, Undurraga-Malinverno M, Untiet S, van Rossum AF, Vassilakos P, Viviano M, Willame A, Wegener S.

Etudiant (e)s en médecine :

Akaaboune M, Berner A, Bigoni J, Broquet C, Camail R, Crofts V, Delavy M, Flahault E, Gallay C, Girardet A, Gundar M, Hassel SB, Kunckler M, Lacour O, Pirek D, Quercia K, Ricard- Gauthier D, Robyr R, Salem A, Santarelli T, Schumacher F, Sossauer G, Triboullier D, Urner E, Wisniak A, Zbinden M

31 publications



REVUE MEDICALE SUISSE *in press*

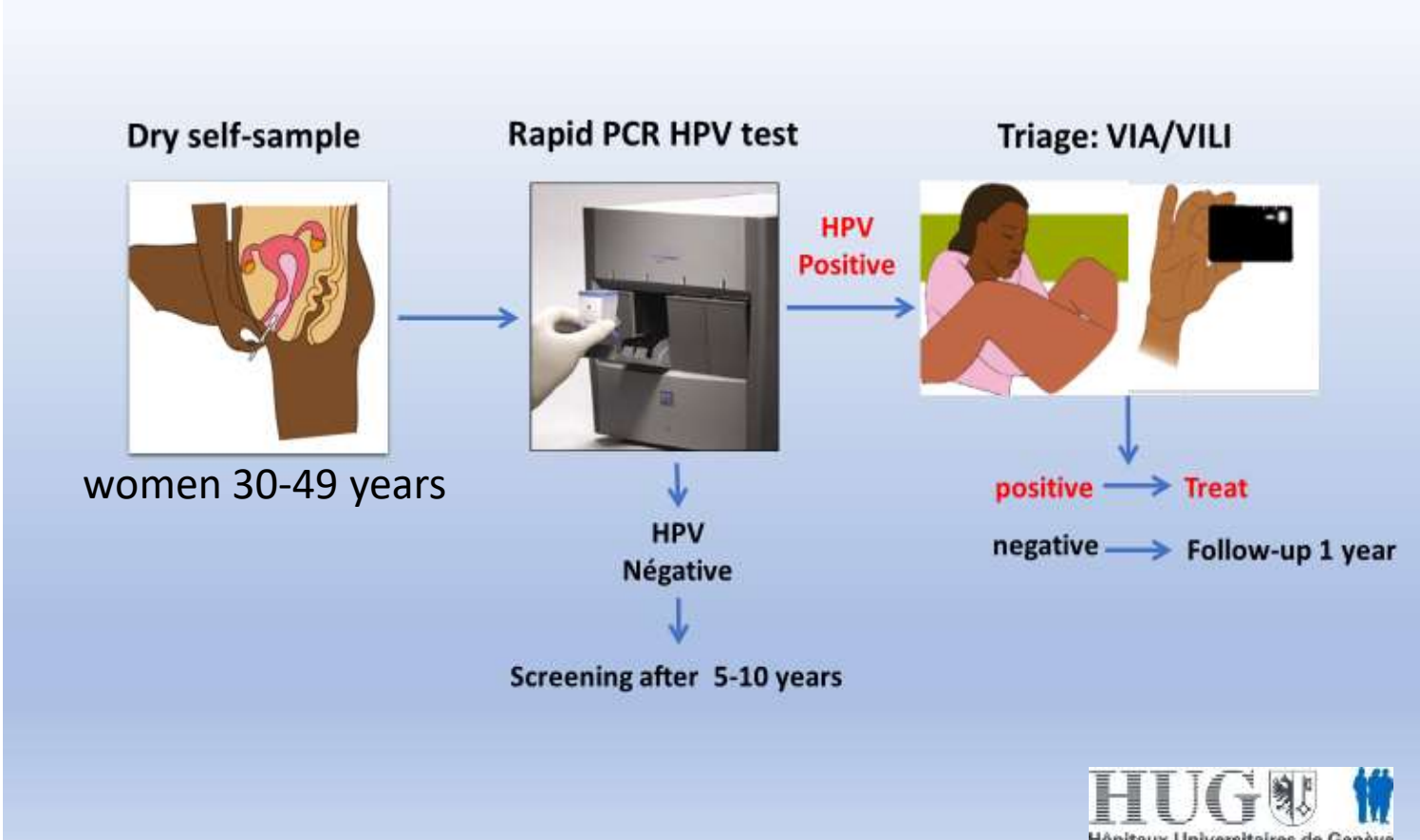
*20 années de lutte contre le cancer du col utérin en Afrique subsaharienne :
Collaboration médicale entre Genève et Yaoundé.*

*20 years of fight against cervical cancer in sub Saharan Africa:
Medical collaboration between Geneva and Yaounde*

1997-2017 **20** years of commitment
....we must continue



3T Strategy : same day Test-Triage-Treat
2018: Implementation (Dschang/Mfou)



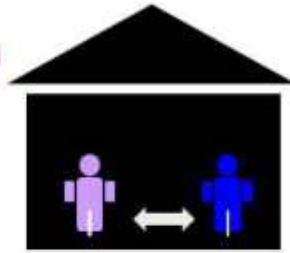
3T Strategy : same day Test-Triage-Treat Health Center Level



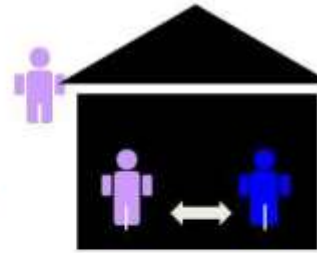
Mobile team for a "screen and treat approach"
(health care providers, device for HPV testing,
computer)



Women 30-49



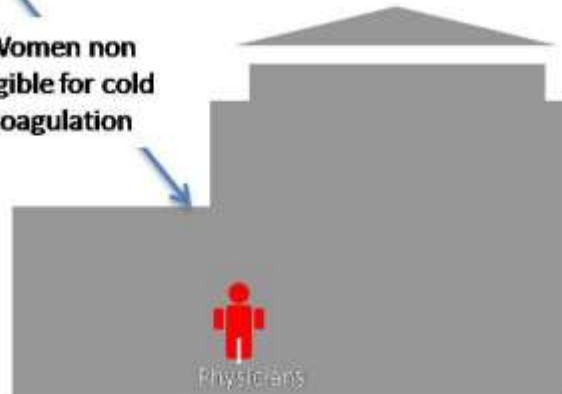
Health Center



The mobile team
will go from one
Health Centers to
another



Women non
eligible for cold
coagulation



Women non eligible for cold coagulation
will be referred to district hospital for
conization



3T Strategy : same day Test-Triage-Treat
District and Central Hospital Level



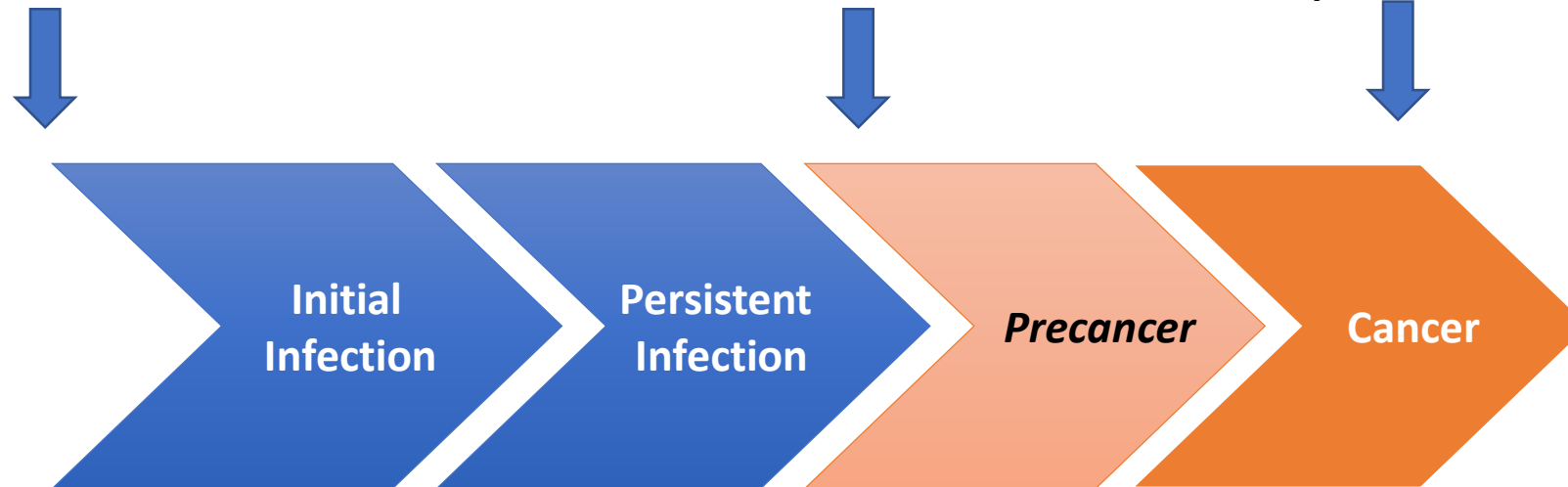
2018

Comprehensive cervical cancer prevention and control

Primary Prevention:
HPV Vaccination

Secondary Prevention:
3T strategy of screening

Tertiary Prevention:
**Treatment of cervical cancer
and palliative care**



Thank you very much
for your attention!

