



Introduction of HPV Vaccine into the national vaccination schedule Belize

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Outline

Overview of prevention of cancer of the cervix program

Process for introduction of HPV vaccine

Lessons Learnt and Challenges

CENTRAL AMERICA AND THE CARIBBEAN



BELIZE



Capital: Belmopan

Population: 387,895 [SIB 2017]

Largest City: Belize City

Area

- Total 22,966 km² (8,867 sq mi)
- Water (%) 0.8

Official Language: English

**UPPER-MIDDLE-
INCOME ECONOMY**



Districts

1. Corozal
2. Orange Walk
3. Belize [80% Urban]
4. Cayo
5. Stann Creek
6. Toledo [80% Rural]

Ethnic Groups [2010 Census-SIB]

1. 53.9% Mestizo
2. 23.9% Creole
3. 11.3% Mayan
4. 6.1% Garifuna
5. 5.8% White [4.6% Mennonites]
6. 3.9% Asian Indians
7. 1.0% East Asian
8. 1.2% Other
9. 0.3% Unknown

Program overview

- Policy and legal framework
- National Committee
- Normative level
- Program management
- Revised screening strategies

Policy level

Sexual and Reproductive Health Policy

- Reduce reproductive tract cancers
- Improve adolescent health
 - HPV vaccine introduced into the national vaccination schedule

Normative level

guidelines

CERVICAL
CANCER
CLINICAL
GUIDELINES

MINISTRY OF HEALTH
BELIZE | 2016



Clinical guidelines
and procedure
manual updated

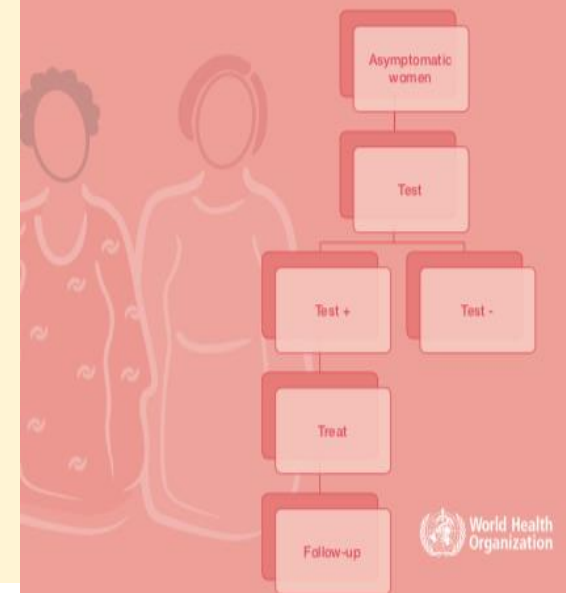
Local partners: Ministry of Health,
Belize Cancer Society, Belize
Family Life Association, National
Health Insurance, KHMH

International partners: Jhpiego,
IPPF-WHR, PAHO, IUCC

National Vaccination Schedule:
Includes HPV

WHO guidelines

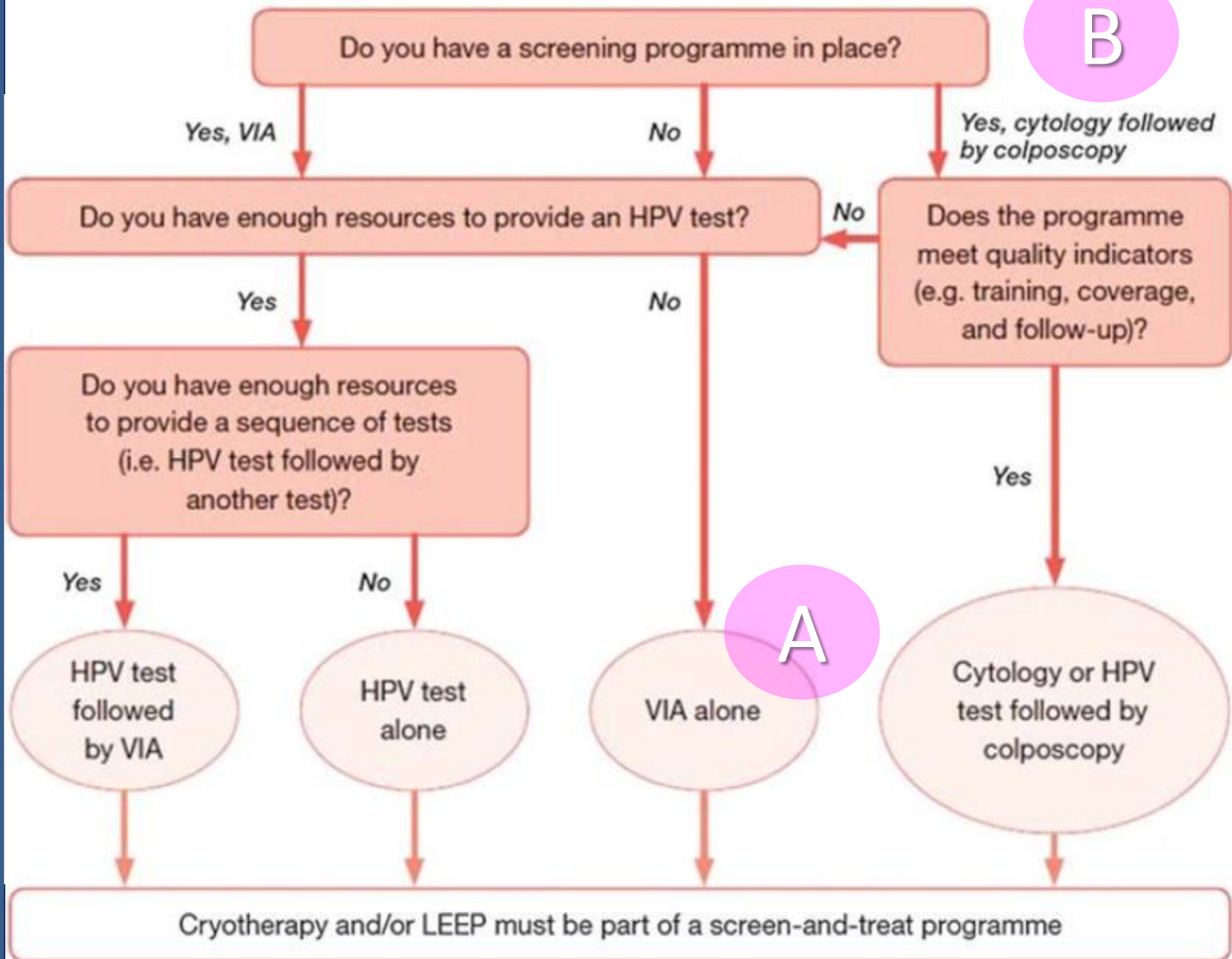
WHO guidelines for screening
and treatment of precancerous
lesions for cervical cancer
prevention



Program management

- Cervical cancer prevention and control Strategic Plan 2016-2021
- Cervical cancer prevention and control operational plans
- Monitoring and Evaluation plan

Decision-making flowchart for programme managers



Screening method

What Is VIA?

- Use bright white light to visualize cervix with unaided eye
- Clean cervix with dilute 3-5% acetic acid solution (white vinegar)
- Wait at least one minute
- Abnormal tissue temporarily appears white (acetowhite)
- Get *immediate* results
- Promotes linkage of screening with treatment



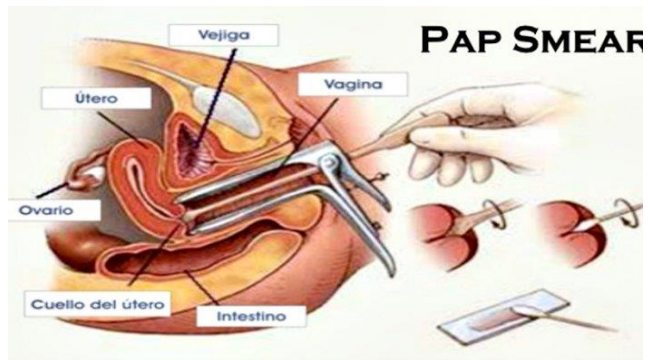
NEGATIVE



POSITIVE

10 Screen and Treat clinics

- VIA
- Cryotherapy
- LEEP
- Portable Colposcope - **New**



Target by district
VIA in Females 25-49 years

Screen + Treat Facilities



VIA CRYO LEEP Colposcopy Surgery	VIA CRYO	VIA CRYO?	PAP smear
4	6	10	32

Target population to be screened

District	Female 25-49 years					
	URBAN			RURAL		
	Total	Yearly Target	Monthly Target	Total	Yearly Target	Monthly Target
Corozal	2197	750	65	5488	1800	150
Orange Walk	2521	840	70	5716	1900	160
Belize	14954	5000	420	6379	2200	180
Cayo	8372	2800	230	6048	2020	180
Stann Creek	1635	600	45	4530	1500	130
Toledo	1026	200	30	3863	1300	110
Total	30705	10,500	900	32024	10700	900

Screening and treatment services provided at or during:

- Health facilities
- Mobile clinics
- Health fairs

Women with HIV
- Yearly
Screening

First time screening / every 3 years

- First time in life
- Previous screening and no result given
- First screening since 3 or more years

Cervical Cancer Screening Report. - SR. July 2018

N°	Indicator	Details	HIV+			HIV -			HIV Unknown			TOTAL		
			A	B	C	D	E	F	G	H	I			
			25-29	30-49	<25 / >49	25-29	30-49	<25 / >49	25-29	30-49	<25 / >49			
1	Number of clients who received a CERVICAL CANCER SCREENING (By visit type)	VIA-First time in Life				1	1	2	1	9	8	22		
		VIA - First time within last 3 years		1		1	2		2	9	1	16		
		VIA - Last 3 years screened - No result					1				1	2		
		PAP SMEARS - FIRST TIME as per criteria for VIA				1			3	2	4	10		
		VIA - Post-treatment Follow-Up at 1 year										0		
		VIA - Rescreening Visit (previous negative result < 3 years)										0		
		VIA - OTHERS										0		
		PAP SMEARS - Not first time screening									1	1	2	
		TOTAL WOMEN SEEN IN THE MONTH					0	1	0	3	4	2	6	22
2	Number of clients with SUSPECT CANCER	First time screening VIA										0		
		Post-treatment Follow-Up at 1 year										0		
		Rescreening Visit (previous negative result)										0		
		OTHER										0		
3	Number of clients with ABNORMAL/POSITIVE screening result	First time screening - VIA				1		1	1	3	5	11		
		Post-treatment Follow-Up at 1 year										0		
		Rescreening Visit (previous negative result)										0		
		OTHER										0		
4	Number of clients with POSITIVE screening result TREATED WITH CRYOTHERAPY	First time screening Same day screen & treat (SVA)				1		1	1	3	5	11		
		Treated after postponing										0		
		Post-treatment Follow-Up at 1 year										0		
		Rescreening Visit (previous negative result)										0		
		OTHER										0		
5	Number of clients with LARGE LESIONS	Referred for treatment										0		
		Treated with LEEP on-site										0		
6	Number of clients with a POST-TREATMENT COMPLICATION	Cryotherapy										0		
		LEEP										0		

52 women screened, 50 first time in life or in 3 years, SVA 100% [5]

Plans 2018

- Salud Mesoamerica Initiative / Rotary Club
 - VIA/CRYO/LEEP Training for Doctors and Nurses
- RUTGERS University = Needs assessment completed
- Procure pap smears to reduce turn around time
In the pipeline, dependent on access to funds
- Liquid cytology
- HPV screening

Vaccine introduction process

Introduction of HPV vaccine

2006

Program Needs Assessment – CAREC
- Automated slide stainer

Introduction of HPV vaccine

2007

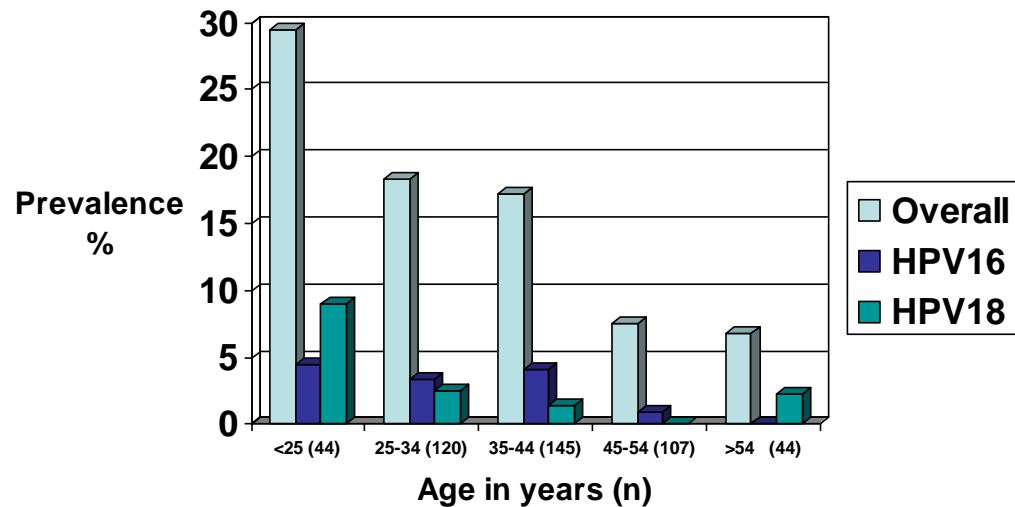
HPV sero-prevalence in 463 women – Charles R. Drew

University of Medicine and Science, Los Angeles, California –

16 and 18 highest frequency

Study Sponsors: *Digene Corporation; The Department of Pathology, the University of Virginia at Charlottesville; The American Cancer Society*

Figure 4. Prevalence of overall HPV and HPV16 or 18 by age in the entire group of Belizean women.



*The overall prevalence of HPV in the population studied was **15.6%***

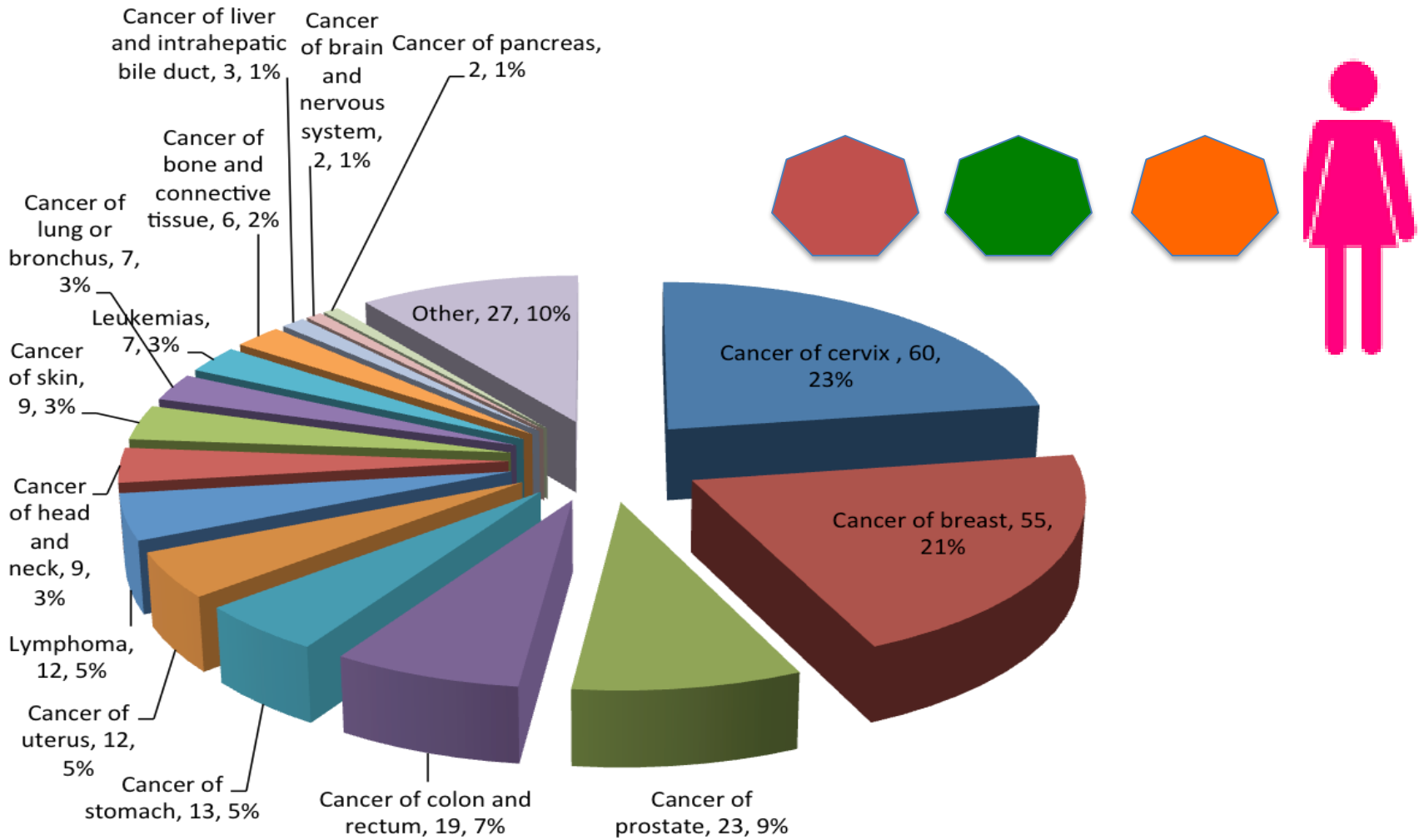
Introduction of HPV vaccine

2011

Private sector provides HPV vaccine

2013

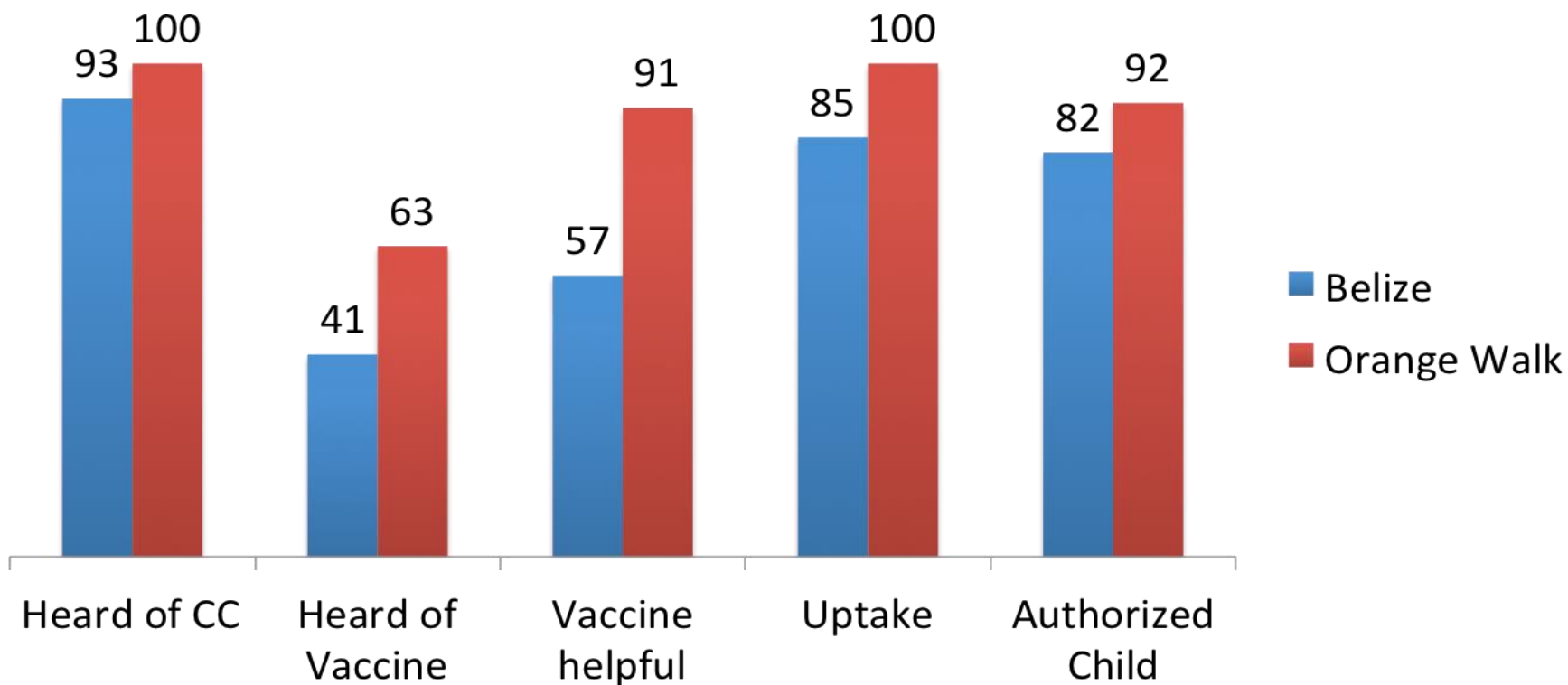
Cost Effectiveness Analysis of HPV vaccine introduction – PAHO



Total Cancer cases 2011- 2012 [n=266]
Dr. Aisha Andrewin – MOH Belize

HPV vaccine acceptance 2016

Survey done by Public Health Nurses



National Committee Recommendation



School based HPV4 vaccination program

Sensitization on HPV vaccine

Mapping of stakeholders

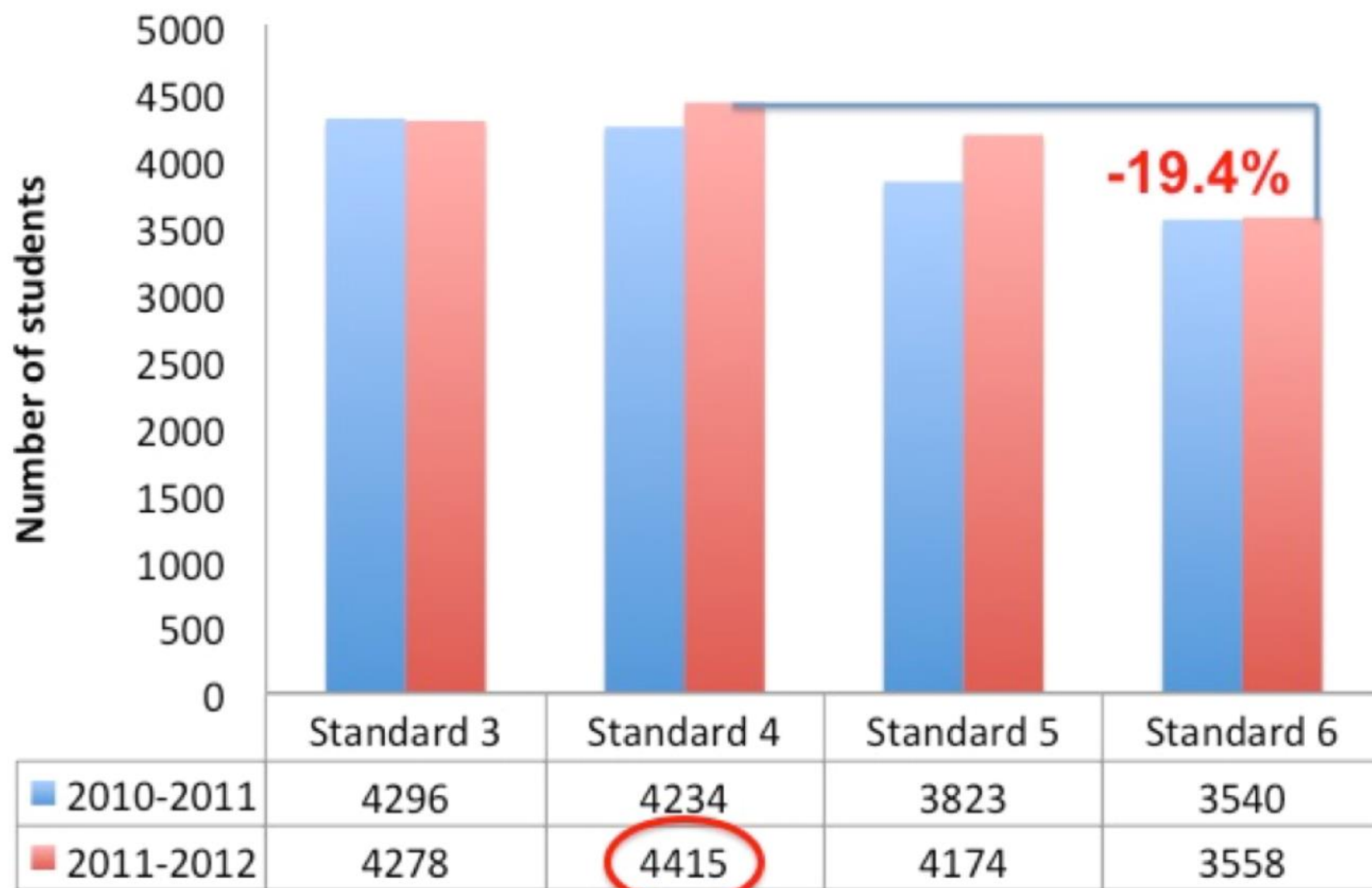
- Religious Leaders
- Ministry of Education
- Media, CSO, HCW and CHW
- Parents

The plan

- One cohort of girls 10 years old [all **girls in standard IV**]
- PAHO Revolving Fund – 1st procurement done by the Belize Social Security Board
- Parental consent form + information sheet
- Census and reporting forms
- Breakfast on the day of vaccination

Number of female students in Standard 3-6

Belize 2010-2011 and 2011-2012

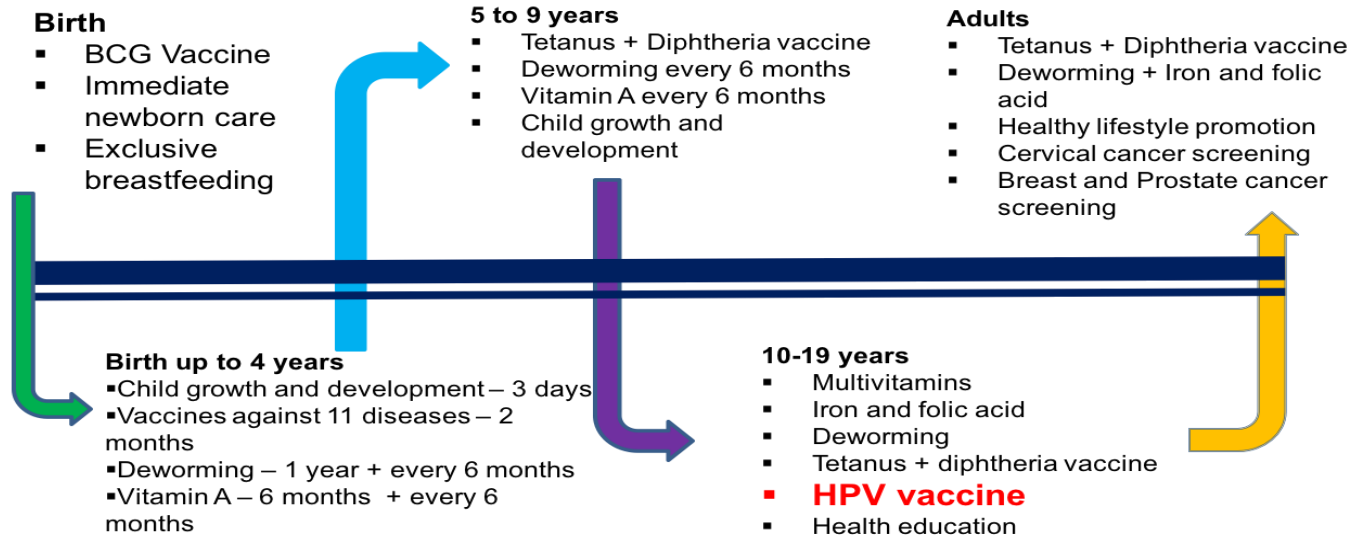


Source: MOEYS. Education Statistical Digest of Belize 2011/2012

Lessons Learnt

Life Course Preventive Interventions

Crosscutting: Screening and management of acute and chronic illnesses



What is Human Papilloma Virus or HPV?

It's a virus that cause infections in **nearly all persons** at some point in their lives.

There are many **different types** of HPV virus. Some types can cause health problems including genital **warts and cancers**. And there are **vaccines** that can **STOP** these health problems from happening.

Lessons Learnt

Evangelical
Council of
Churches

Chief
Education
Officer

Belize
Cancer
Society

Director
Health
Services

MCH-TA

OBGYN-
Oncologist
Private



Lessons Learnt - RESPECT

- Meetings and number of participants in red
- 1: Bishop - [1]
- 2: Bishop and Country School Manager [2]
- 3: Bishop + School Manager + District Managers [12]
- 4: School + District Managers + Principals [100+]
- -5: Meeting with teachers and parents at schools

Lessons Learnt -

TRANSPARENCY

when sharing
information

Update
presentation based
on questions



Richard E. Shope
(1901—1966)
**1957 Albert Lasker
Clinical Medical
Research Award**

From the 1930s showing that infection with a type of papillomavirus could cause warts and cancers in rabbits.

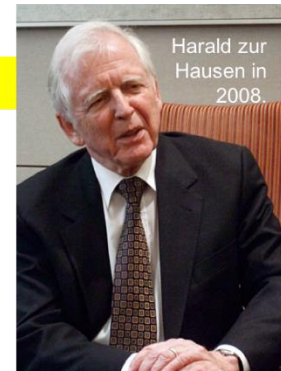


Peyton Rous
(1879—1970)

**1966 Nobel Prize in
Physiology or Medicine**
Benign tumors in rabbits
can become cancerous.



Harald zur Hausen in 1967 -
Children's Hospital of
Philadelphia.



Harald zur
Hausen in
2008.

1898 – 1930 - 1966* and 2008*

NOBEL PRIZE*

- Cervical cancer caused by papillomaviruses
- Isolation and characterization of the two most frequent HPV types
- Better understanding of HPV-mediated carcinogenesis
- Development of a preventive vaccine were cited as the prime reasons for awarding one half of the Nobel Prize for Medicine or Physiology in 2008.

Cervical cancer seemed to be more common among women who started having sex at a younger age or who had multiple sexual partners.

Lessons Learnt - MEDIA

Media Breakfast – Great OPPORTUNITY

<https://www.breakingbelizenews.com/2016/11/03/ministry-health-roll-hpv-vaccines/>

<http://edition.channel5belize.com/archives/137531>

<https://ambergriscaye.com/forum/ubbthreads.php/topics/518709/hpv-vaccine-for-all-std-iv-girls.html>

<http://outbreaknewstoday.com/belize-includes-hpv-vaccine-national-vaccine-program-15044/>

<http://edition.channel5belize.com/archives/83402>

<http://www.7newsbelize.com/sstory.php?nid=35243> BCS-Video

Lessons Learnt - MEDIA

Radio and TV talk shows

- Train the host before the show
- They breakdown the information to listeners/viewers
- They request the guest to further explain a specific point

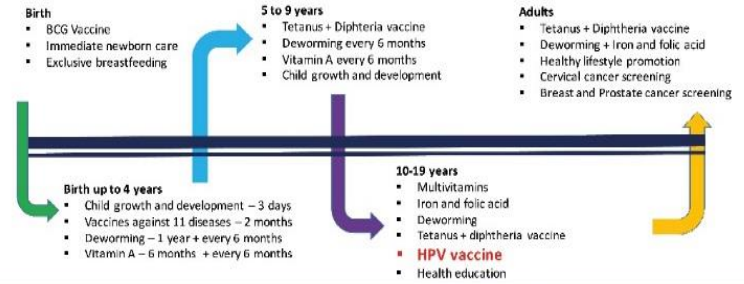
Lessons Learnt

Standardized message to parents

8 hours training of staff in preparation for a 10 minutes presentation to parents

Life Course Preventive Interventions

Crosscutting: Screening and management of acute and chronic illnesses



What is Human Papilloma Virus or HPV?

It's a virus that cause infections in **nearly all persons** at some point in their lives.

There are many **different types** of HPV virus. Some types can cause health problems including **genital warts and cancers**. And there are **vaccines** that can **STOP** these health problems from happening.

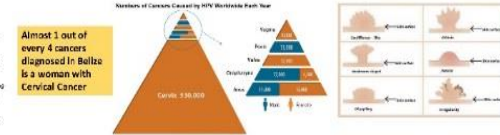
Vaccine	Recommended age	Dose	Site and Route
BCG	At Birth	0.05 ml for infants < 2mths 0.1 ml for infants > 2 mths and all others	Mid/Upper right arm - intradermal
Inactivated Polio Vaccine (IPV)	1 st dose at 2 mths 2 nd dose at 4 mths	0.5 ml injectable (IPV) 2 drops	Intramuscular
Oral Polio Vaccine (OPV)	3 rd dose at 6 mths 1 st booster at 18 mths 2 nd booster dose at 4.5 years	2 drops 2 drops 7 drops	Oral Oral Oral
Pentavalent - (DTP/Polio/HepB)	1 st dose at 7 mths 2 nd dose at 11 mths 3 rd dose at 6 mths	0.5 ml 0.5 ml 0.5 ml	Antero-lateral high – intramuscular
Measles, Mumps, Rubella (MMR)	1 st dose at 12 mths 2 nd dose at 18 mths	0.5 ml 0.5 ml	left arm - subcutaneous
Diphtheria Pertussis Tetanus (DPT)	Booster dose at 4-5 years	0.5 ml	Deltoid region - intramuscular
DT PellaTrix	Given to children with contraindication to Pertussis in pentavalent vaccine	0.5 ml	Antero lateral high – intramuscular
Human Papilloma Virus (HPV) Vaccine	Given to females in Standard Four Class. Two doses with a 6 months interval between 1 st and 2 nd dose.	0.5	Intramuscular injection in the Deltoid muscle - right or left arm
Td or Adult DT	1 st dose at first antenatal visit 2 nd dose at least 8 weeks after the 1 st dose if required	0.5 ml 0.5 ml	Right or left arm on deltoid muscle - intramuscular

How is HPV spread?

HPV can be passed even when an infected person has no signs or symptoms.
It spreads through direct contact with an infected person and through sexual contact.

Does HPV cause health problems?

In most cases, HPV goes away on its own and does not cause any health problems.
But when HPV does not go away, it can cause health problems like genital warts and cancer.
Cervical warts usually appear as a small bump or group of bumps in the genital area. They may be moist or dry, raised or flat, or colored like a cauliflower.
A healthcare provider can usually diagnose warts by looking at the genital area.



How to stop HPV infections

Get vaccinated
HPV vaccines are safe and effective. They can protect males and females against diseases (including cancer).
The vaccine is more effective if given before commencing sexual contact.

How many doses of HPV vaccines are required?

2 doses total: 1st dose 6 months, 2nd dose 2 doses total
Second dose 6 months after first dose

Is there any payment for the vaccine?

No out of pocket payment is required for girls in Standard IV class.



Most common side effects

itchiness, swelling and pain in the injection site

Parent authorization is required

The Ministry of Education will need a written request from parents for their authorization for girls in Standard IV class to be vaccinated.

100% of girls vaccinated before exposure will not suffer from cervical cancer caused by HPV 16 and 18



Lessons Learnt

Global Advisory Committee on Vaccine Safety (GACVS)

Share with anti vaccine groups and others the evidence available

- Advisory body to WHO/IVB.
- Response to vaccine safety issues of potential global importance:
 - promptly, efficiently, with scientific rigor.
- Broad expertise.
- Independence.
- Decisions and recommendations based on best available evidence.

Reports and statements: www.who.int/vaccine_safety/en/

Challenges

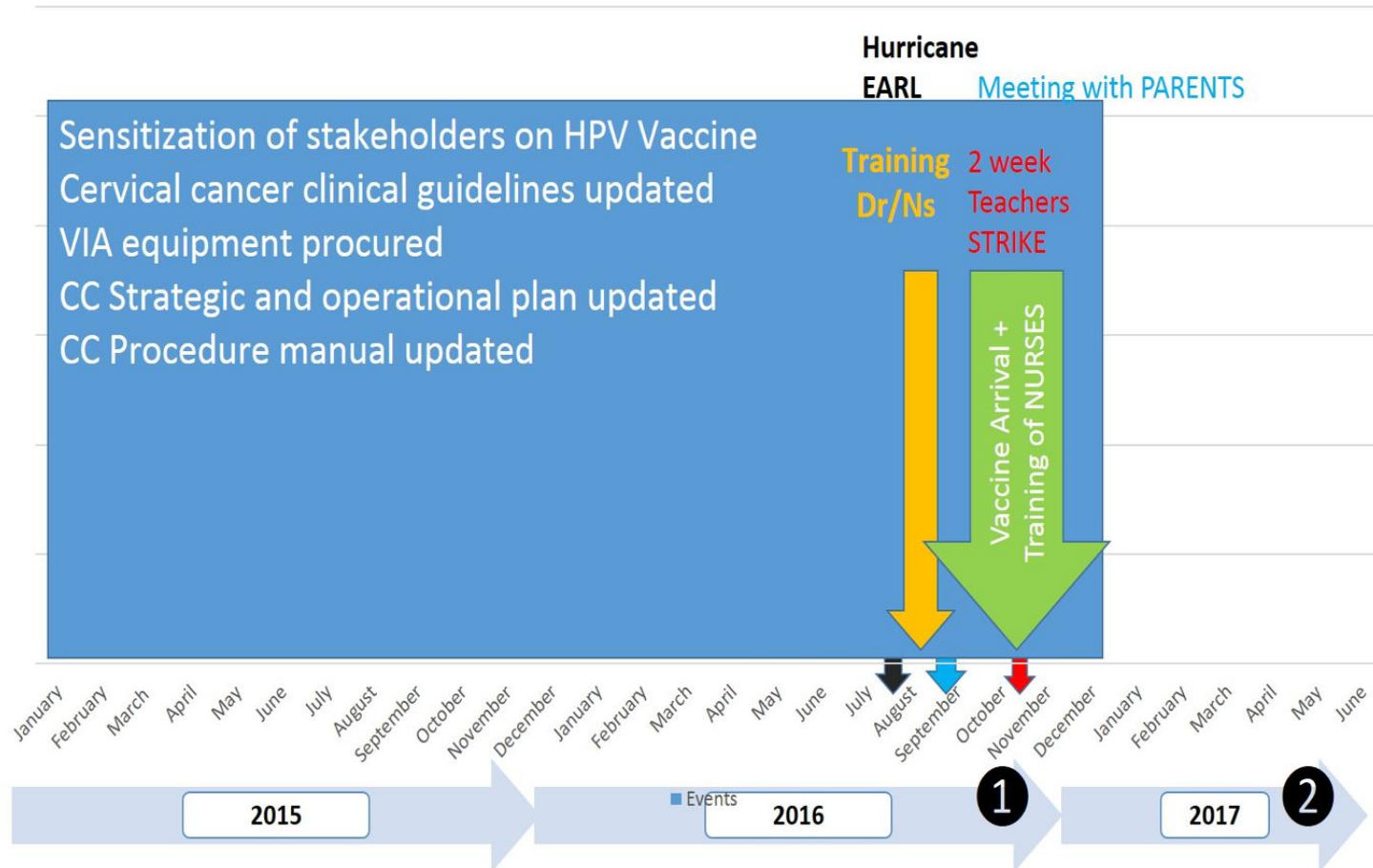
- No funds for social mobilization
- Major efforts done with face to face meetings with stakeholders

Challenges

- High number of small schools [<10 girls in STD-IV]
 - Campaign
 - Mobile clinics
- Reaching parents and teachers prior vaccination is a must
- Timely supply of vaccines

Challenges

BELIZE Introduction of HPV Vaccine 2016



Conclusion

Documented cases of cancer of the cervix 2013-2017

District	2013	2014	2015	2016	2017	Grand Total
1Corozal	5	7	8	3	4	27
2Orange Walk	4	4	5	3		16
3Belize	7	7	9	5	9	37
4Cayo	3	5	2	6	7	23
5Stann Creek	4	5	1	2	3	15
6Toledo		1	1	4	1	7
7Unknown				1		1
Grand Total	23	29	26	24	24	126

- Incidence rate: 38.8/100,000 females 15 and older

Conclusion

Deaths due to cancer of the cervix

District	2013	2014	2015	2016	2017	Grand Total
Corozal		5	3	1	3	12
Orange Walk	1	1	3	2	3	10
Belize	4	6	2	5	1	18
Cayo	8	2	2	4	2	18
Stann Creek	2	2	1	2	5	12
Toledo		1	2	2	2	7
Grand Total	15	17	13	16	16	77

Mortality rate: 23.7/100,000 deaths among females 15 and older

Conclusion

- HPV vaccine introduced into the national vaccination coverage in October 2016
- Currently procured by Government
- Coverage by school year
 - School year 2016/2017 58.8%
 - School year 2017/2018 62.4 %

Conclusion

- Screening method VIA
- Insufficient coverage, 1 day a week
- Target population defined by district
- Pathology Department requires investment in capacity building and equipment/supplies
- Continue with the expansion of see and treat clinics

HPV Vaccine Introduction - Belize

Information sheet for parents

Consent form

Educational poster for parents

PowerPoint presentation and educational videos

HPV introduction Plan

Reporting forms

Letter sent to parents by Ministry of Education

Materials developed are available for sharing
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