



CERVICAL CANCER (CACX)

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Worldwide Burden of Cacx

- Cervical cancer is a preventable and curable disease if detected early and adequately treated.
- Yet it remains one of most common cancers and the cause of cancer-related death in women across the globe.
- Over the next 12 years (2018 to 2030), the annual number of new cases of cervical cancer is expected to increase from 570,000 to 700,000. During that same period, the annual number of deaths will increase from 311,000 to 400,000.

Worldwide Burden of Cacx

- Cervical cancer is the second most common cancer worldwide.
- In Tanzania, Cervical cancer is the leading cause of cancer-related mortality in women.
- Tanzania peaks East Africa with 54,560 new cases reported yearly and 36,497 deaths reported in 2020 alone



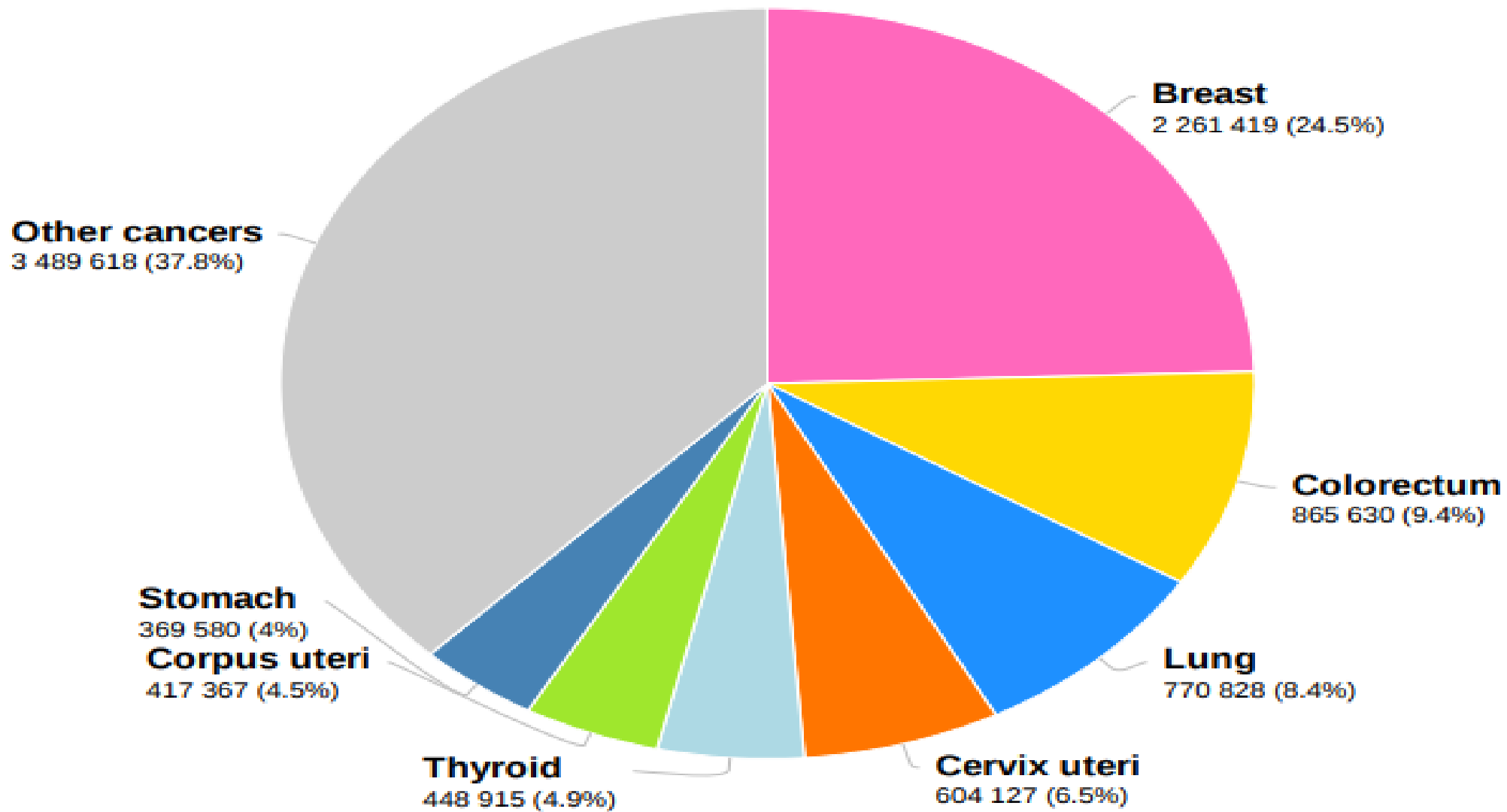
- Main causes
 - HPV infection
 - 38% HPV16
 - 32% HPV18

Table 1: Years Trend for Cancer Cases in Tanzania (2012-2021)

Type	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total	%
Cervical cancer	1896	1795	1867	1892	2,081	2,161	2,390	1,664	2,115	1,715	21,456	32
Kaposi sarcoma	789	654	680	674	741	752	711	409	435	418	7,077	11
Breast cancer	667	705	733	742	816	901	985	846	1,124	911	8,955	13
Esophageal cancer	573	601	625	643	707	745	753	671	793	643	7,265	11
Head and neck	386	411	427	439	483	526	531	481	595	482	5,122	2
Lymphoma	295	295	307	314	345	412	405	386	330	268	3,626	1
Leukemia	252	259	269	253	278	342	358	322	66	54	2,714	4
Urinary bladder	168	168	175	182	200	237	212	231	161	63	1,950	3
Skin cancer	147	147	153	161	177	198	201	187	132	107	1,751	3
Eye cancers	131	134	139	143	157	168	152	118	132	107	1,500	2
Prostate Cancer	101	116	121	129	142	251	297	263	330	268	2,111	3
Others	124	179	186	192	211	326	654	583	397	321	3,288	5
Sub Total	5,529	5,464	5,682	5,764	6,338	7,019	7,649	6,161	6,609	5,358	66,817	13



Estimated number of new cases in 2020, World, females, all ages



Total : 9 227 484

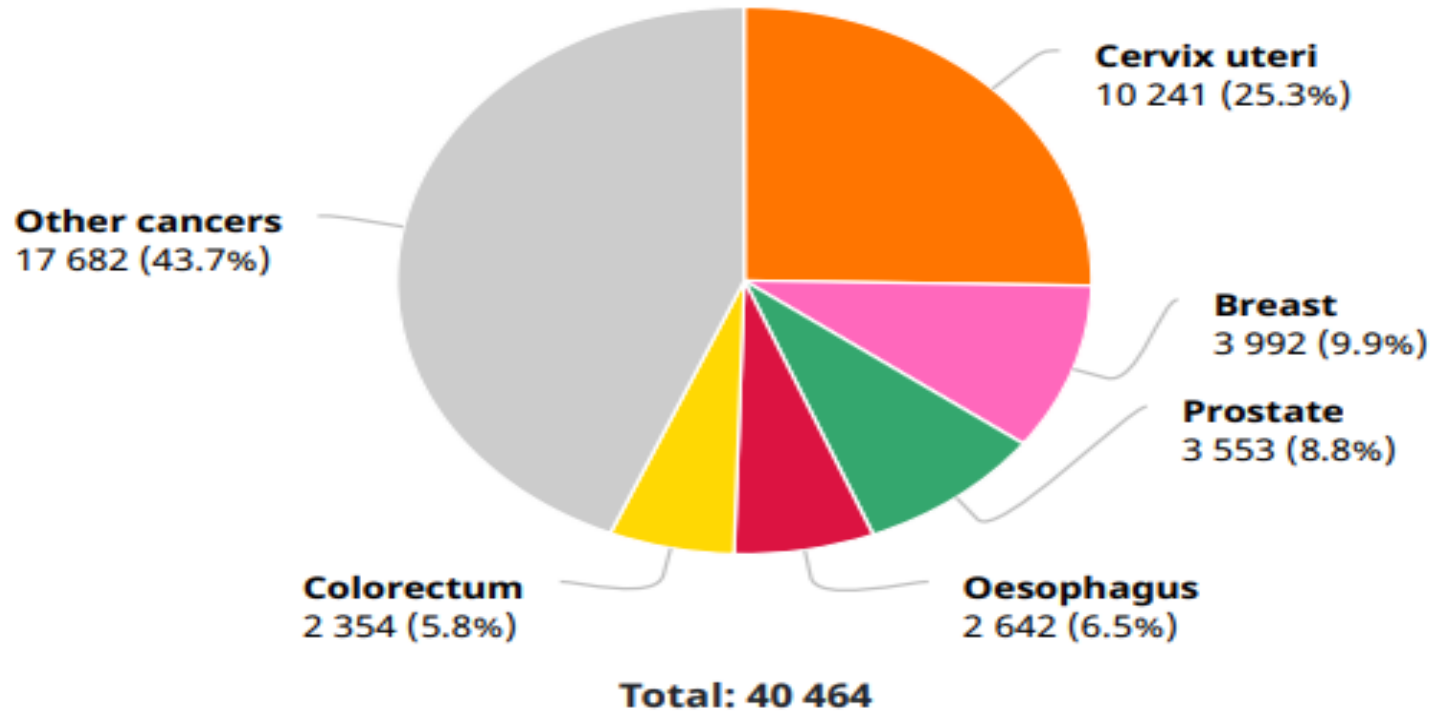
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Tanzania, United Republic of

Source: Globocan 2020

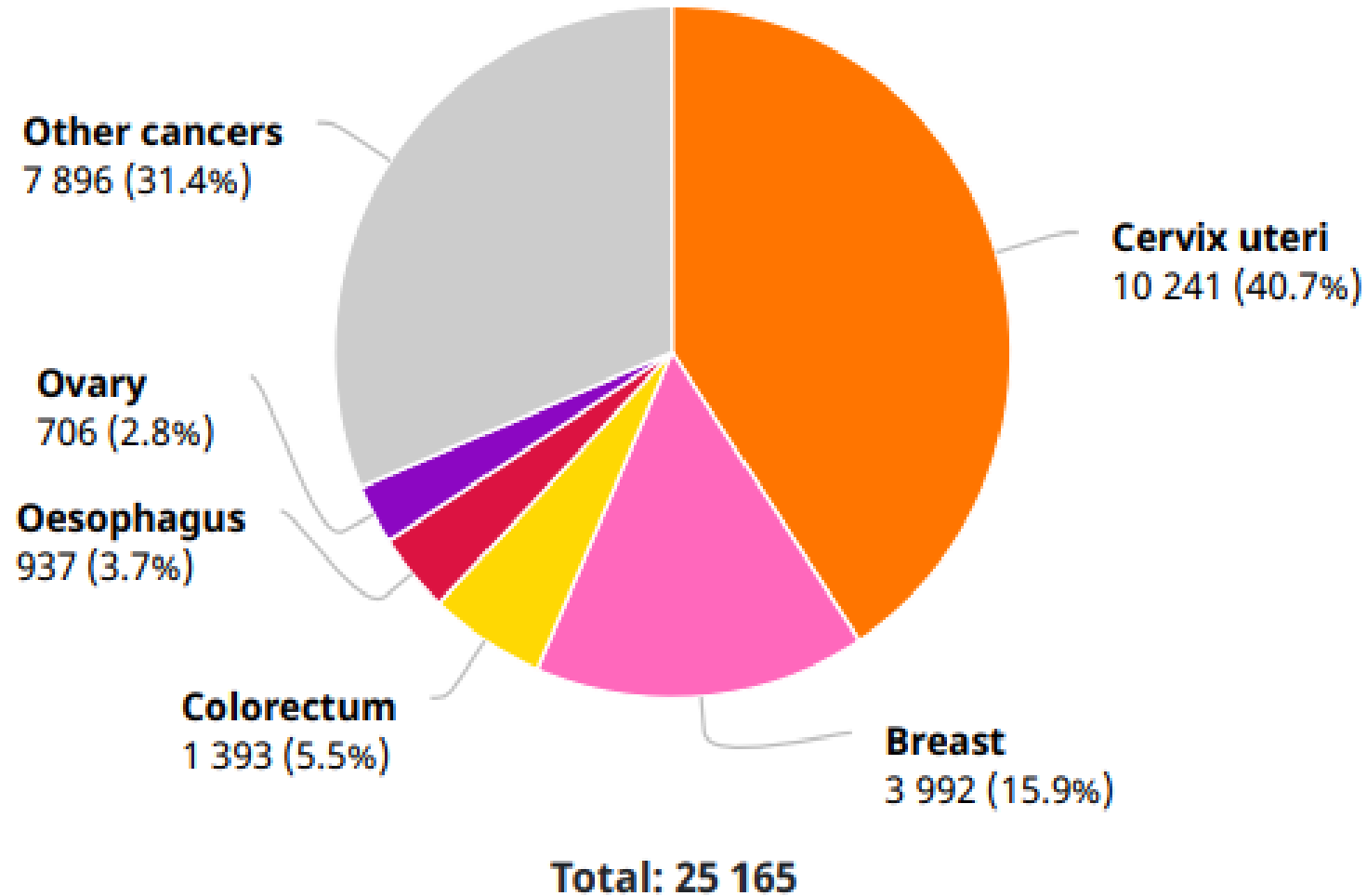
Number of new cases in 2020, both sexes, all ages



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Number of new cases in 2020, females, all ages





Tanzania, United Republic of

Source: Globocan



Incidence, Mortality and Prevalence by cancer site

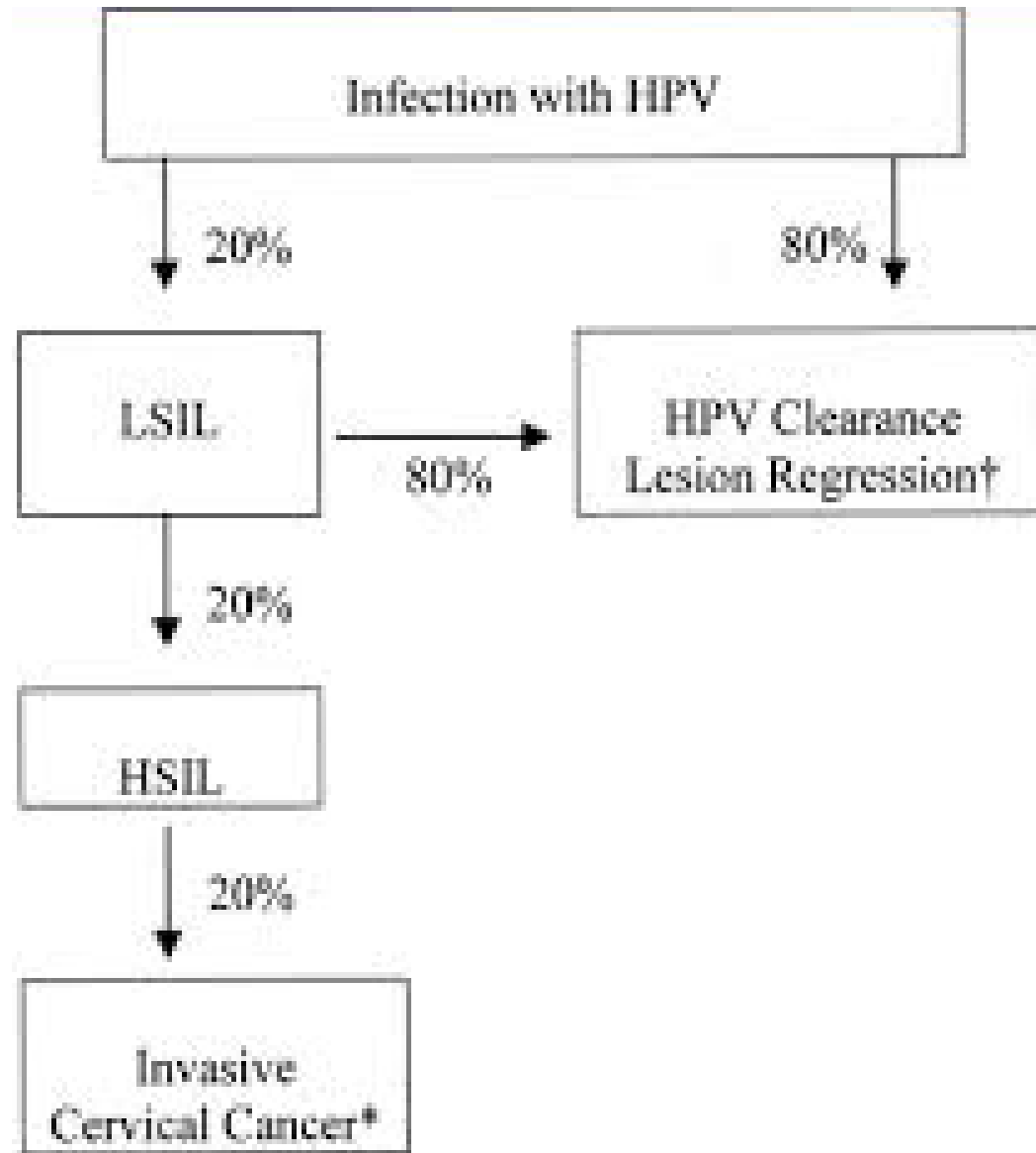
Cancer	New cases				Deaths				5-year prevalence (all ages)	
	Number	Rank	(%)	Cum.risk	Number	Rank	(%)	Cum.risk	Number	Prop. (per 100 000)
Cervix uteri	10 241	1	25.3	7.43	6 525	1	24.2	5.36	19 306	64.61
Breast	3 992	2	9.9	2.74	1 973	4	7.3	1.44	8 295	27.76
Prostate	3 553	3	8.8	4.23	1 985	3	7.4	2.20	5 710	19.13
Oesophagus	2 642	4	6.5	1.07	2 514	2	9.3	1.03	2 912	4.87
Kaposi sarcoma	1 354	5	3.3	0.36	800	8	3.0	0.21	2 804	4.69
Non-Hodgkin lymphoma	1 297	6	3.2	0.30	832	7	3.1	0.23	2 582	4.32
Stomach	1 091	7	2.7	0.51	947	6	3.5	0.44	1 489	2.49
Liver	1 038	8	2.6	0.36	1 003	5	3.7	0.35	1 235	2.07
Bladder	1 018	9	2.5	0.39	550	12	2.0	0.20	1 888	3.16
Rectum	950	10	2.3	0.41	670	10	2.5	0.28	1 784	2.99
Lung	829	11	2.0	0.39	762	9	2.8	0.36	966	1.62
Colon	735	12	1.8	0.25	520	13	1.9	0.18	1 239	2.07
Ovary	706	13	1.7	0.47	504	14	1.9	0.40	1 374	4.60
Anus	669	14	1.7	0.31	481	16	1.8	0.22	1 264	2.12



Risk factors for cervical cancer

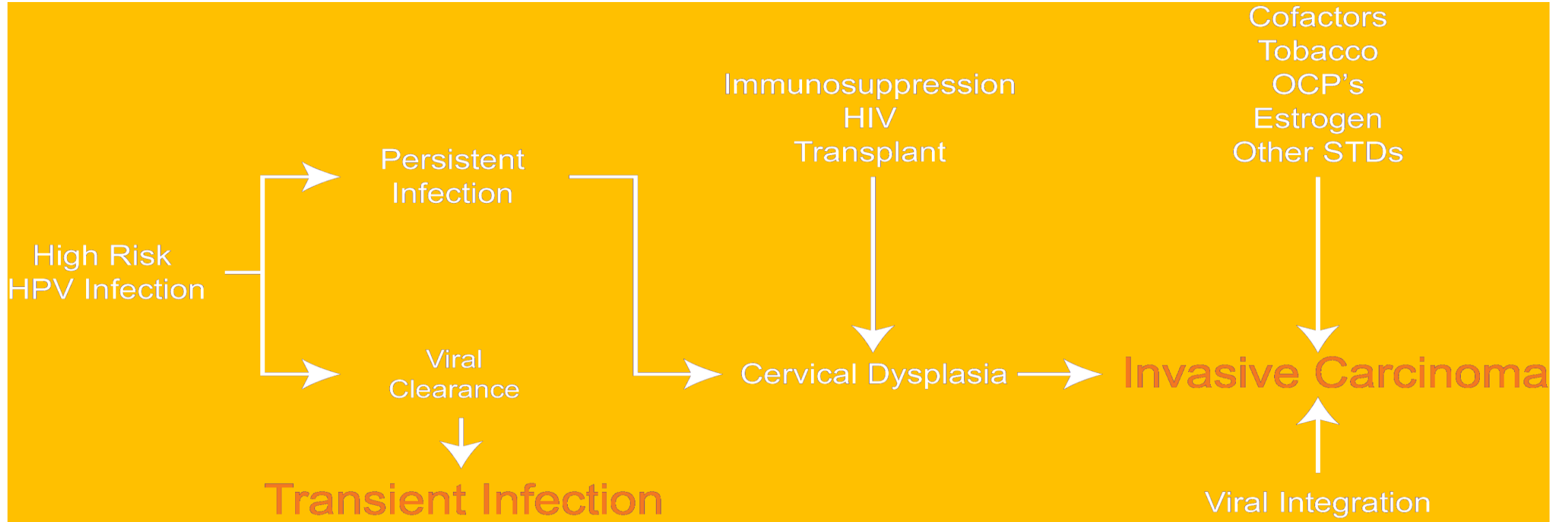
- **Classic Risk Factors for Cervical Cancer**

- Early first age of sexual contact < 15years
- Multiple sexual partners life time > 6
- High risk sexual partner
- High parity > 5
- History of sexually transmitted infections (chlamydia ,herpes)
- Immunosuppression . eg HIV infection,
- Lower socio-economic status
- Smoking
- Oral contraceptive use > 15 yrs



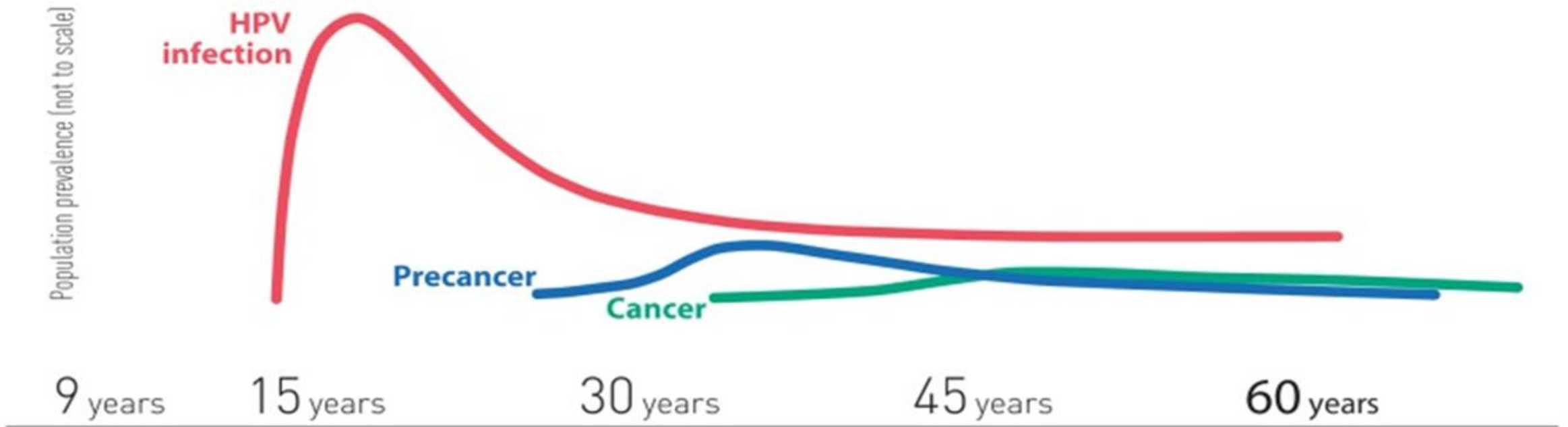


Multistage Carcinogenesis





Natural history of cervical cancer





Sensitivity and specificity of screening tests

	Sensitivity (Average/ range)	Specificity (Average/ range)
Pap smear	60% (35 - 84%)	> 90%
VIA	77% (56 – 94%)	86% (74 – 94%)
HPV testing	90% (85 – 98%)	85%



Tanzania Situation – Screening and treatment

- There is a National Cervical Cancer Prevention Program (Under MoHCDCGEC)
- There are about more than 360 sites regularly screening with VIA age 30 – 49yrs; Integrated in clinics
 - Single visit approach
 - Sites that can perform cryotherapy – 263
 - Sites that can perform LEEP – 18
- Pap smear – In major hospitals with pathology services (approx 15 countrywide)
- HPV DNA testing – mainly in research projects at ORCI, MNH and KCMC



Tanzania situation – Cacx diagnosis

- Clinical diagnosis performed in all district hospitals particularly those with cacx screening
- Pathological diagnosis only in major hospitals – BMC, KCMC, ORCI, MNH, MRH and other major hospitals – AKH, TMJ, SJMH etc (approx 12 facilities)
- Diagnosis challenge is specimen transport, cost of the test and turn-around time
- Staging of patients also a challenges – not the typical EUA; usually it is done in exam rooms

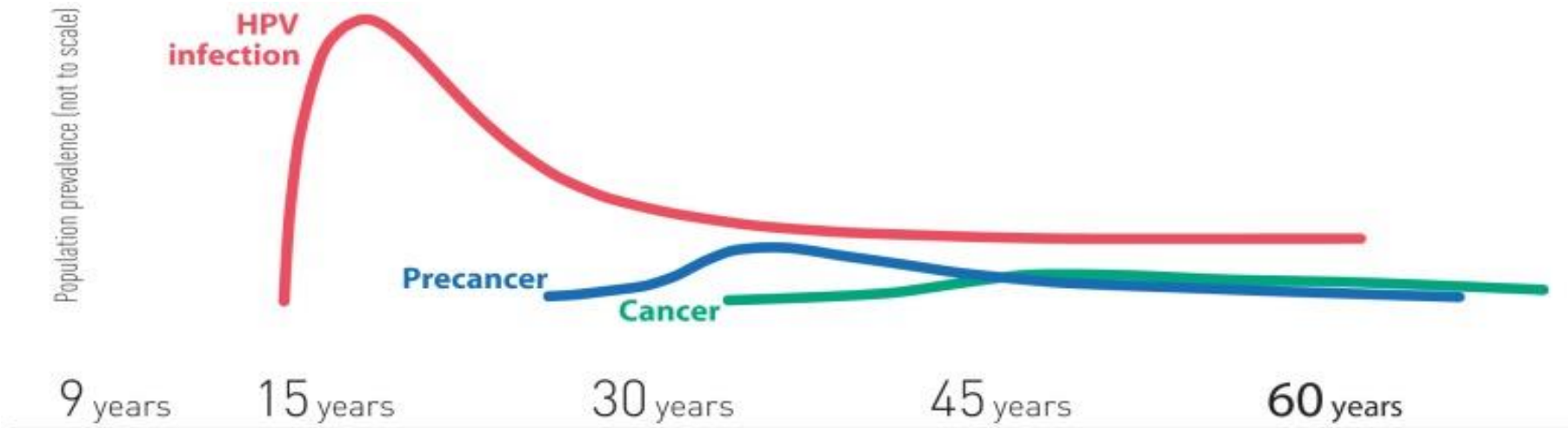


Tanzania situation – Cacx treatment

- Wartheims hysterectomy – Stage IB and IIA
 - Only 3% of cacx pts attended at ORCI had WH
 - Challenge is most patients have advanced stage disease, facilities for the procedure and expertise
 - Stage IB and IIA usually receive cmemoradiotherapy
- External beam& Intracavitary RT - Stage IIB and III
 - About 80% of cacx patients attended at ORCI
 - Usually with wkly chemo – Chemo-sensitizer
 - At ORCI, Besta Clinic, BMC, Good smariatan-Ifakara
- Palliative care – Stage IV patients



WHO approach to comprehensive cervical cancer prevention



PRIMARY PREVENTION
Girls 9–13 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
Screening and treatment as needed

- “Screen-and-treat” with low-cost technology, e.g. VIA followed by cryotherapy
- HPV testing for high-risk HPV types (i.e. types 16 and 18, and also types 31, 33, 45, and 58).

TERTIARY PREVENTION
All women as needed
Treatment of invasive cancer at any age

- Ablative surgery
- Radiotherapy
- Chemotherapy

Palliative care

Source: Adapted from WHO guidance note: comprehensive cervical cancer prevention and control: a healthier future for girls and women. Geneva: World Health Organization; 2013. .

Primary Prevention	Secondary Prevention	Tertiary Prevention
<p>Girls 9-14 years HPV Vaccination</p>	<p>Women 30 years old and older</p>	<p>All women as needed</p>
<p>Girls and boys, as appropriate</p> <ul style="list-style-type: none"> • Health information and warnings about tobacco use • Reproductive Health Education • Male circumcision 	<p>“Screen and Treat” - single visit approach</p> <ul style="list-style-type: none"> • Point-of-care rapid HPV testing for high-risk HPV types • Followed by immediate treatment • On-site treatment 	<p>Treatment of invasive cancer at any age and palliative care</p> <ul style="list-style-type: none"> • Surgery • Radiotherapy • Chemotherapy • Palliative care



Tanzania Situation: HPV vaccination

- Recommended: The target for vaccination will be Pre and young adolescent girls before first coitus
- The recommended age group is **9-14 years in class 4**
- Out of school population will be targeted through facility or outreach approach
- Two doses initially – day 0 and at 6 months
- Currently single dose- Immunogenicity
 - **Gardasil vaccine – quadrivalent – HPV 6, 11, 16, 18**



Comparison with Maternal Mortality

	PREGNANCY-RELATED COMPLICATIONS (MATERNAL MORTALITY)	CERVICAL CANCER
ANNUAL DEATHS	358,000 women DIE ANNUALLY	270,000 women DIE ANNUALLY
MORTALITY TRENDS	↓34% DECREASE IN MORTALITY 1990-2008	↑45% INCREASE IN MORTALITY 1990-2008
PRIORITIZATION IN MILLENIUM DEVELOPMENT GOAL (MDG)?	YES (MDG 5—IMPROVING MATERNAL HEALTH FROM PREGNANCY RELATED COMPLICATIONS)	NO
CURRENT ANNUAL INVESTMENT IN DEVELOPING WORLD	USD 12 billion	??? EXACT FIGURE UNKNOWN

2011 CCA REPORT CARD

Even In Sustainable Development Goals (SDGs) no specific goal for CACX!



Conclusion

- Cervical Cancer is a major public health concern in Tanzania due to its incidence, morbidity and mortality
- Prevention programs are important for reducing incidence
- Overt cervical cancer management is challenging and is expensive
- Investing in cervical cancer prevention and control saves lives, improves the quality of the woman's life and is cost saving to the country



Thank you!



References

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- MOHCDGEC – Human papilloma virus vaccine guideline Dec 2017
- ACOG- 2016 Guideline: Cervical cancer prevention and control
- RCOG-2016 guideline: Cervical cancer screening and treatment
- UpToDate 2024 Cervical cancer prevention and control
- Tanzania service delivery guideline for cervical cancer prevention and control
- Globocan 2020 Graph production: Global Cancer Observatory (<http://gco.iarc.fr>)
- WHO – Non-communicable diseases: https://www.who.int/health-topics/noncommunicable-diseases#tab=tab_1
- NCD Countdown 2030: pathway to achieving Sustainable Development Goal target 3.4 by NCD Countdown 2030 collaborators: <https://www.thelancet.com/action/showPdf?pii=S0140-6736%2820%2931761-X>
- Medicalization of Global Health 1-4, by Jocalyn Clark