INSTITUTE OF
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How will we control Cancer in Nigeria

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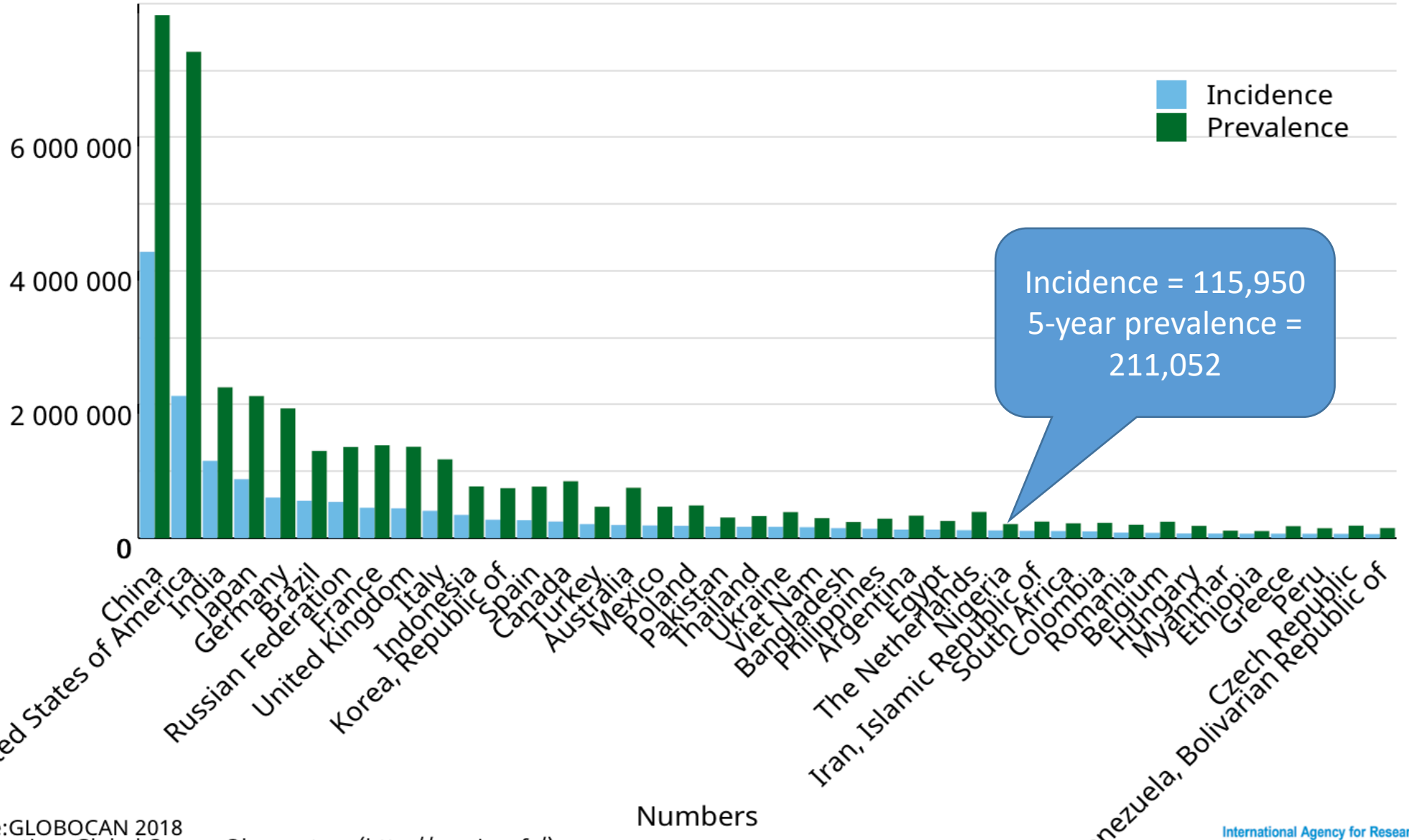
Estimated number of cases all cancers, both sexes, all ages



Data source:GLOBOCAN 2018
Graph production: Global Cancer Observatory (http://gco.iarc.fr/)

International Agency for Research on Cancer
World Health Organization

Nigeria Today

- The current population of Nigeria is **197,147,158** as of Monday, October 8, 2018
- Nigeria is the **7th** most populous country in the world and its population is equivalent to **2.57%** of the total world population.
- **51.0%** of the population is **urban**
- The **median age** in Nigeria is **17.9 years**.

Nigeria Yesterday

- The population of Nigeria in 1960 was **45,137,812**
- Nigeria was the **13th** most populous country in the world and its population was equivalent to **1.49%** of the total world population.
- **15.4%** of the population was **urban**
- The **median age** in Nigeria was **19.1 years**.

Nigeria Tomorrow

- The population of Nigeria will be **410,637,868** by 2050
- Nigeria will be the **3rd** most populous country in the world and its population will be equivalent to **4.2%** of the total world population.
- **72.0 %** of the population will be **urban**
- The **median age** will be **22.4 years**.

Demographic pressure on cancer incidence and prevalence in Nigeria

- For comparison, we look at a developed country whose population in 1960 was similar to that of Nigeria.
- In **1960**, the population of France was **46m,** it was the **12th** most populous country in the world, **61.7%** was urban and the median age was **33.1 years.**
- In **2018**, France's population is **65m (42% compared to 337% increase for Nigeria)**, it is the **22nd** most populous country and its median age is **41.4 years.**
- By **2050**, France will have **71m (54% from 1960 compared to 810% increase for Nigeria)**
- This demographic change means there are more Nigerians who will develop cancer in future

One of the singular most important interventions for cancer control in Nigeria is a multi-sectoral intervention to manage our population growth and rural-urban demographic transition.

Common infections attributable to cancers in Nigeria

- Female

Virus	Cancer	PAR%	ASR
• HPV	Cervix	100	29.0
• HBV/HCV	Liver	92	7.5
• Total			43.0

- Male

Virus	Cancer	PAR%	ASR
• HBV/HCV	Liver	92	13.8

- Other infections/infestations that contribute to cancer in Nigeria include EBV, HHV8, *H. pylori*, Schistosoma, and HIV

Major risk factors for cancer - infections

- Almost a quarter of all new cancers (23.8%) in Nigeria are associated with infections while 22.0% were attributable to infections.
- Therefore slightly more than one in five cancers in Nigeria can be eliminated if we control these infections by vaccination or treatment.

The major cancers associated with infections are Cancer of the Cervix in women and Liver Cancer in men

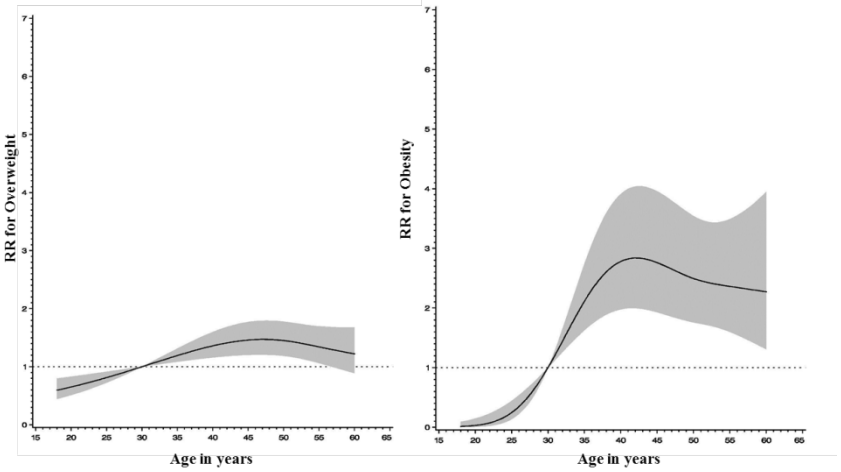
TABLE 3 | Total number of cancer cases associated with infections in Nigeria from 2012 to 2014.

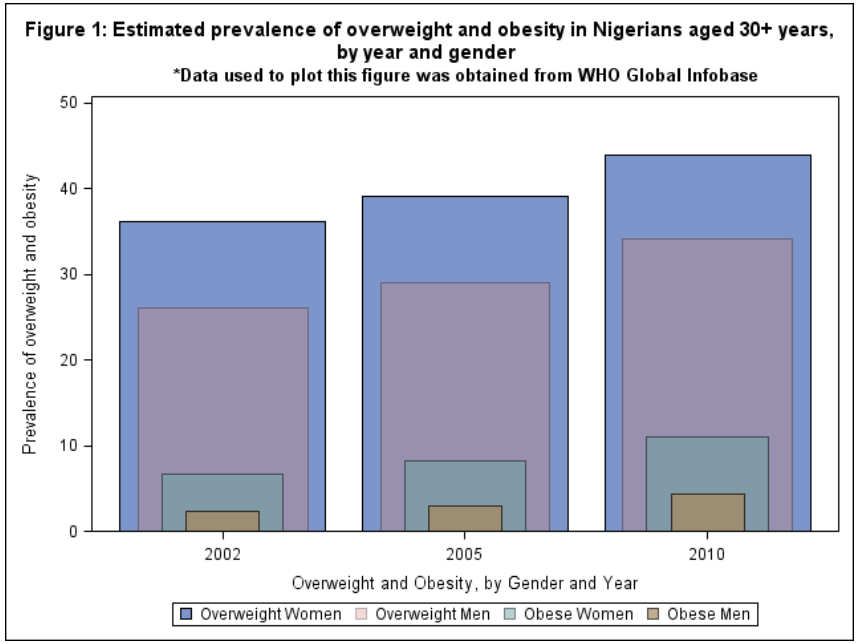
Sex	Cancer site	ICD-O code	No. of cancer cases	% of total cancer	ASR
Female	Cervix	C53	392	30.0	28.3
	Vulva	C51	25	1.8	1.3
			8	0.6	0.4
		C21	17	1.3	0.7
	Oropharynx	C01–C02; C09–C10	8	0.6	0.5
	Bladder	C67	14	1.1	1.1
	Liver	C22	52	3.9	2.7
	Nasopharynx	C11	34	2.5	1.5
	Stomach	C16	23	1.7	1.4
		C82–C85; C96	49	3.7	2.3
		C81	17	1.2	0.5
		C46	26	2.0	1.1
	Penis		2	0.2	0.1
	Anus	C21	21	2.7	1.4
	Oropharynx	C01–C02; C09–	15	1.9	0.8
	Bladder	C67		3.8	1.4
	Liver	C22	93	11.9	4.0
	Nasopharynx	C11	47	6.1	1.7
	Stomach	C16	33	4.4	1.7
	NHL	C82–C85; C96	61	7.6	2.7
	HL	C81	28	8.7	1.0
	KS	C46	35	4.6	1.3
Total			1,030	23.8	44.4

Prevention of Human Papilloma Virus, Hepatitis B and C, HIV infections, treatment of Hepatitis C, HIV, H. pylori, Schistosomiasis would substantially reduce incidence and prevalence of cancers in Nigeria

Major risk factors for cancer - Obesity

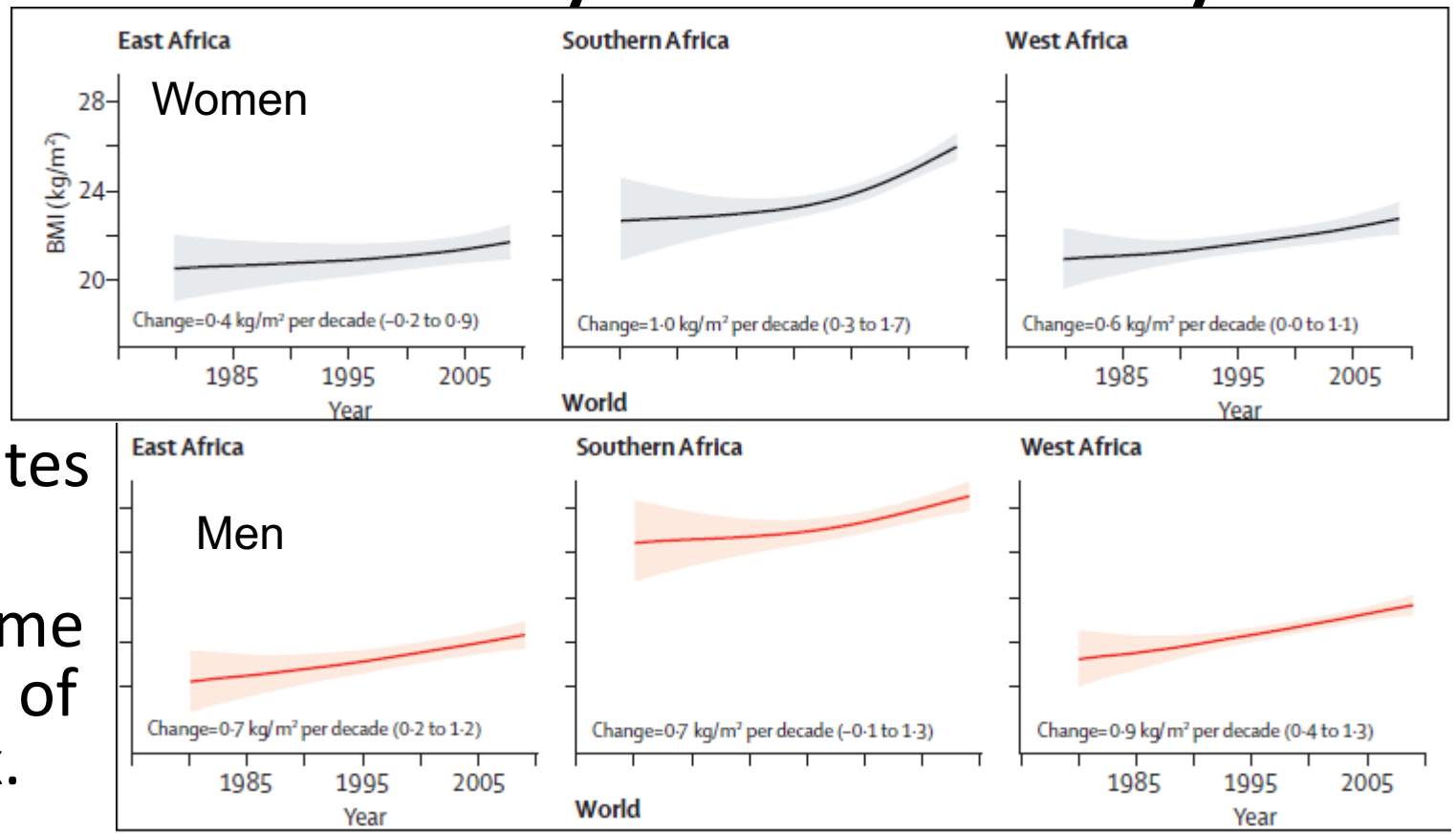
- Obesity due to lack of exercise and diet constitute a major risk factor for cancer in Nigeria
- The mean BMI (SD) of urbanized Nigerians was recently estimated at 27 (4.8) kg/m^2. The prevalence of overweight was 74% and of obesity was 56%.
- Risk factors for obesity are age, female gender, having a professional job and belonging to middle or high socio-economic status





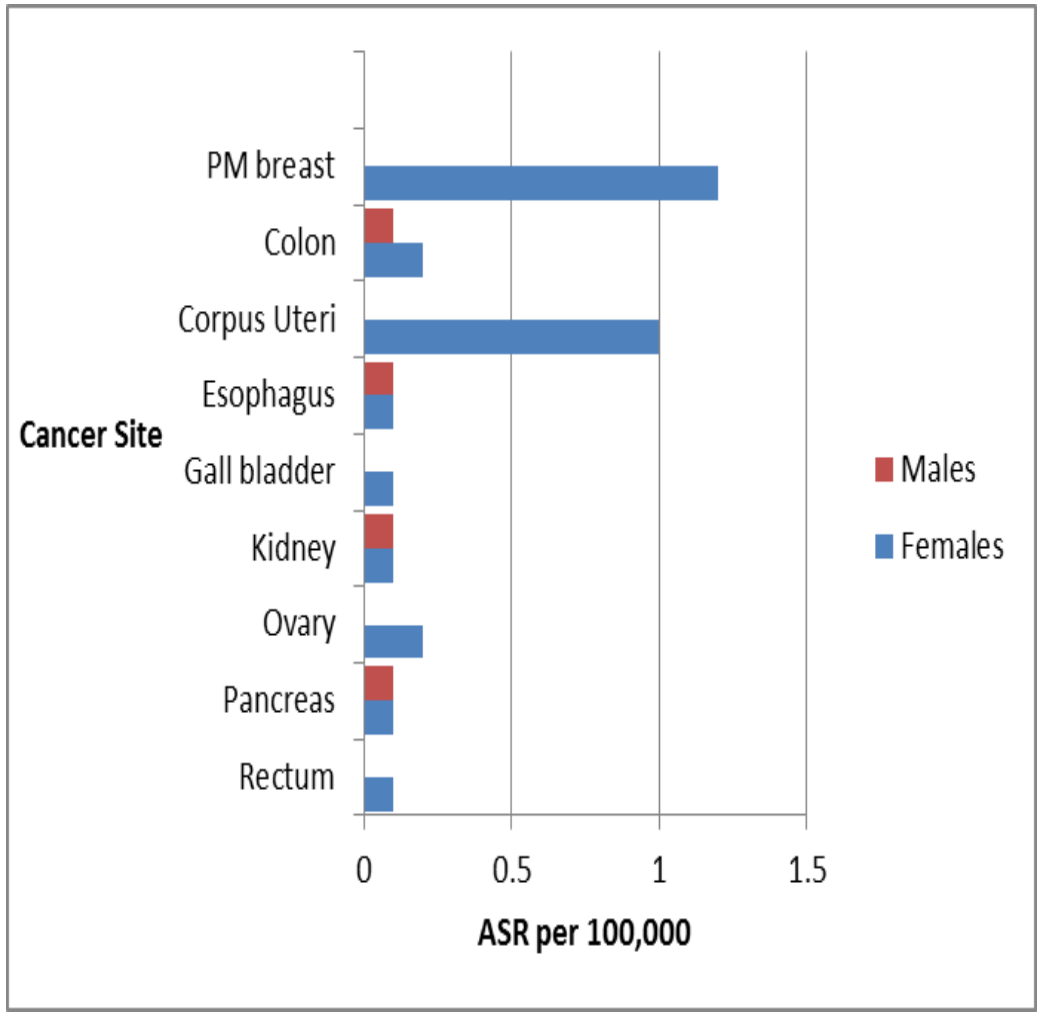
Major risk factors for cancer – Physical inactivity

- Physical inactivity is very prevalent in Nigeria
- More than 80% of urbanized, professional Nigerians do not meet the WHO recommendations of 30 minutes of physical activity daily.
- There is low level of leisure-time physical activity, independent of age, sex and body-mass index.
- Marriage and older age were associated with physical inactivity in multivariable analysis.



Cancers attributable to obesity

- The incidence of cancer in Nigeria was estimated to be 113.9 per 100,000 per year in 2014.
- About one in five (21.0%) of these cancers were associated with overweight and obesity , while 1.4% were attributable to it.
- Postmenopausal (PM) breast cancers, colorectal cancers and ovarian cancers were the commonest cancers associated with overweight and obesity overall.
- Obesity associated cancers were commoner in women than in men



Efforts to reduce obesity and increase recreational physical activity will mainly reduce risk of cardiovascular and metabolic diseases but will also reduce cancer incidence and prevalence, particularly among women

Recommendations from Leaders in Cancer Research and Policy from 15 countries meeting at the NIH, Nov 2012

- **Reliable, population-based registries** that define the incidence, mortality, and survival rates of different types of cancers are fundamental to the design of local, regional and national plans
- **Implementation of prevention measures** to mitigate factors now known to promote cancer—tobacco, certain infectious agents, ultraviolet radiation, alcohol, obesity, lack of exercise, and diet
- **Screening** individuals for certain cancers (of the cervix, breast, prostate, and colorectum, in particular)
- **Optimal cancer treatment**
- **Basic and preclinical cancer research**

- Addressing the Growing International Challenge of Cancer: A Multinational Perspective Varmus, Harold and Kumar, Harpal S. Science Translational Medicine 2013; 5 (175) 175cm2: March 6, 2013

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NSCR Activities in 2017/2018

- Establishment of Adamawa and Minna PBCRs
- Upgrade of Maiduguri, Uyo and Benin registries to PBCRs
- Establishment of HBCRs in Braithwaite Memorial Specialist Hospital, Port Harcourt and Lakeshore Cancer Center, Lagos State.
- Collaborated with AFCRN to review Ekiti Cancer Registry for provisional AFCRN membership
- Collaborated with AFCRN to train and establish the Sierra Leone Cancer Registry

NSCR Activities in 2017/2018

- The book ‘Cancer in Nigeria 2009-2016’ is the second in a series of regular reports to the Nigerian nation on cancer incidence in the country.
- This book is a compilation of cancer data from different parts of Nigeria, hereby providing us information on trends and pattern of cancers in different regions and each state of the country.
- The aim of the book is to provide data to guide policies on cancer prevention and control, resource allocation, support cancer research and encourage the sustainability of cancer registration in the country.
- It is available for download on the NSCR website - https://nigeriancancerregistries.net

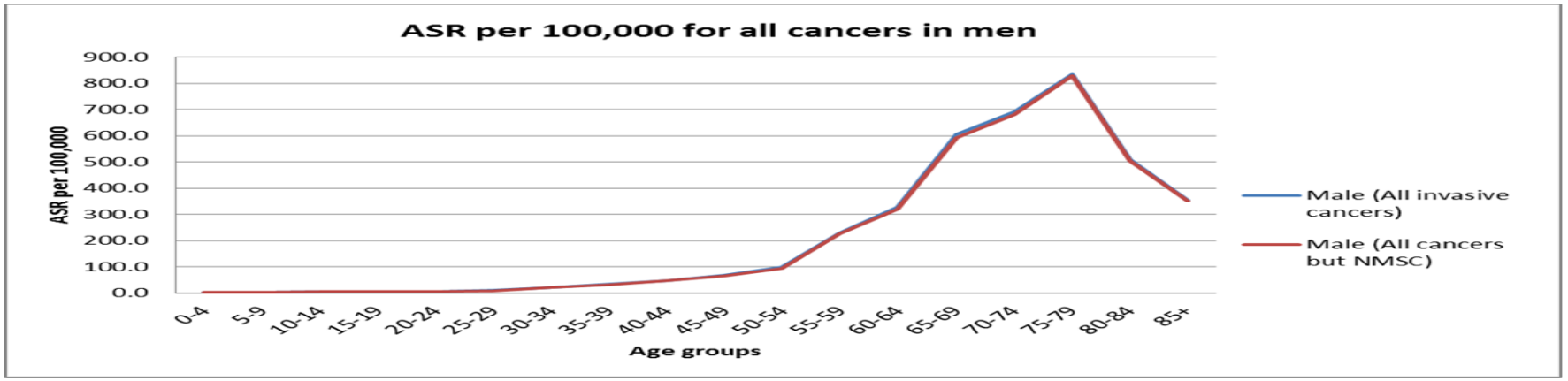
NSCR Website

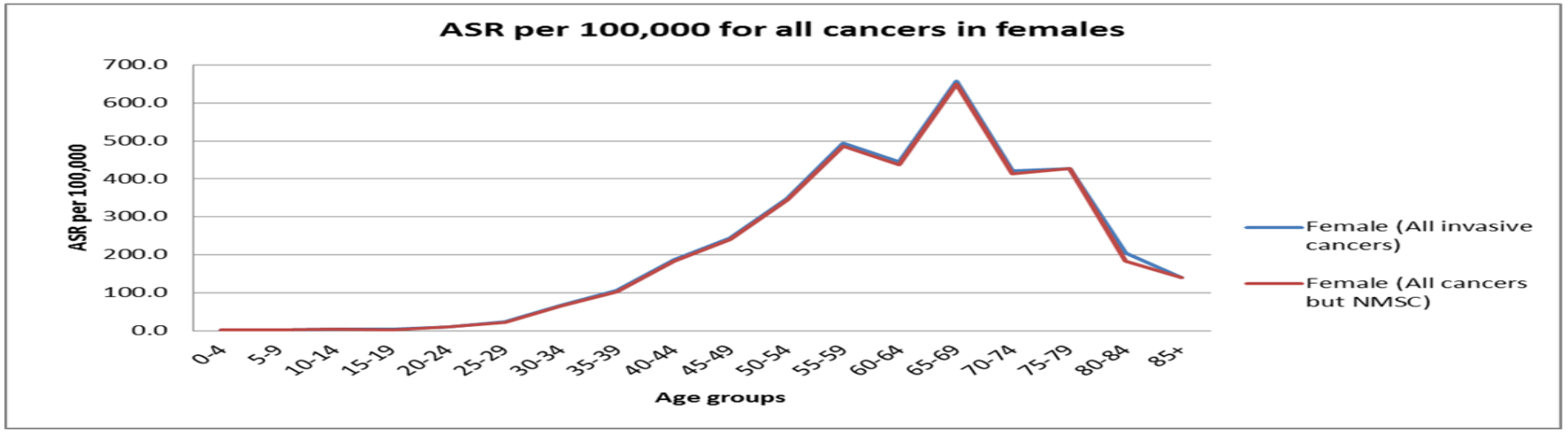
- Site displays most current information about cancer registries in Nigeria
- Contact information of cancer registries and their directors
- Upcoming trainings
- New initiatives and projects
- Access to cancer registries data

National Cancer Incidence based on PBCRs Data

- We derived the national cancer incidence statistics using population-based data from the Abuja, Edo and Ekiti Cancer Registries. These registries had quality data with comparable incidence rates.
- The incidence rate of all cancers in Nigeria in 2016 was 107.8 per 100,000.
- Of these 60.3% (ASR = 130.0 per 100,000) were reported in females and 39.7% (ASR = 85.5 per 100,000) were reported in males.
- The five most common cancers in women were breast (51.4 per 100,000), cervix (29.2 per 100,000), ovary (6.0 per 100,000), colon and rectum (5.2 per 100,000) and non-melanoma skin cancers (2.2 per 100,000).
- In men, the five commonest cancers were prostate (44.9 per 100,000), colon and rectum (5.2 per 100,000), liver (4.4 per 100,000), connective soft tissue (2.3 per 100,000) and non-melanoma skin cancers (2.0 per 100,000).

Pattern of Cancer Incidence by Age

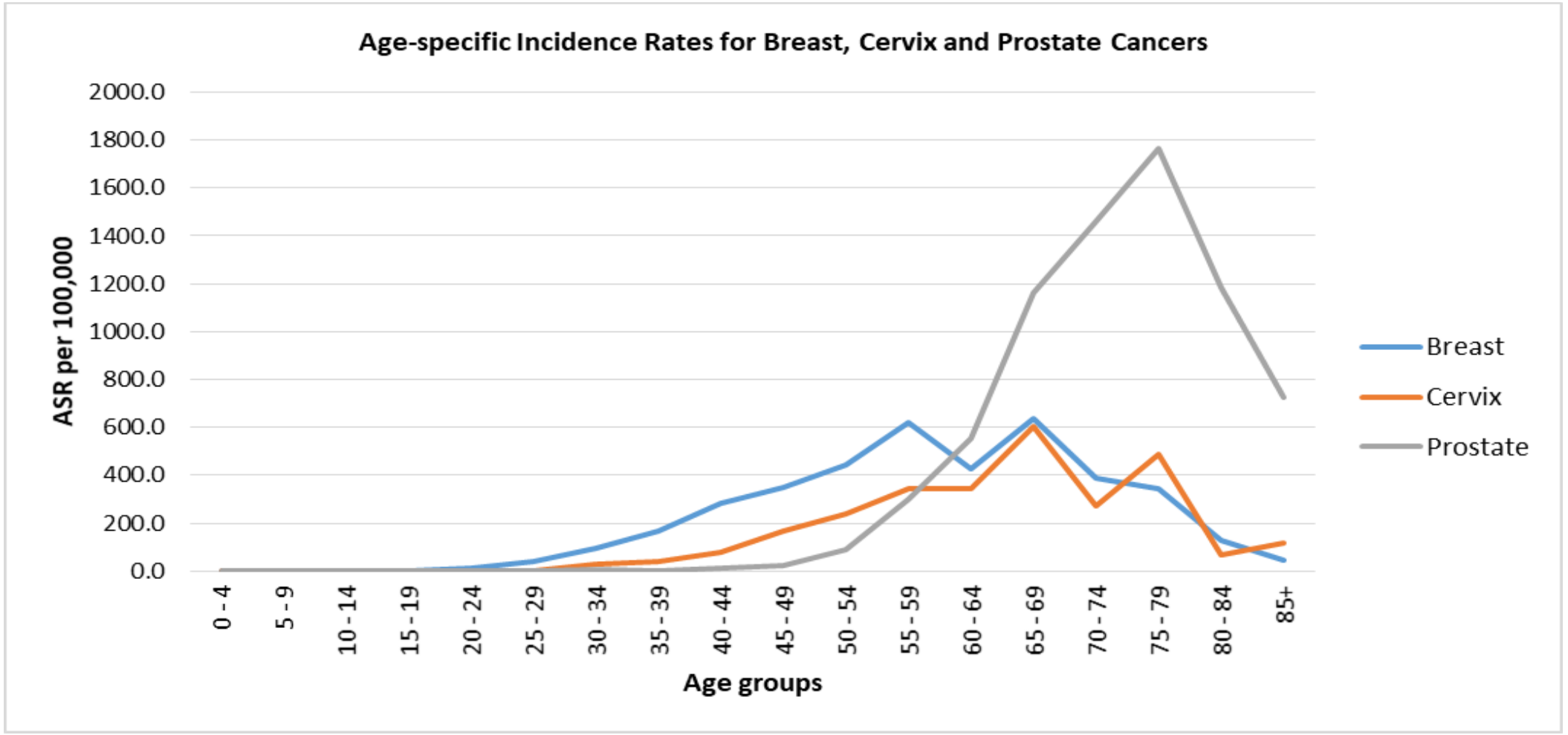




ASR for cancers by age groups in Nigeria (2014-2016) - Abuja, Benin and Ekiti cancer registries

This is consistent with the experience in other populations. Cancer is a disease of aging populations and the older populations get, the more cancers are seen in the society

Age-specific Incidence Rates – Commonest Cancers



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