

Epidemiology of breast cancer in Sub-saharan Africa

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Outline / objective of presentation

- Describe cancer burden
- Evolution of cancer knowledge and tools for diseases investigation
- Practical suggestions for the future
- Conclusion

Why should we consider cancer

- Cancer is part of Non communicable disease profile
- Second major contributor to global disease burden, hence a public health concern.
- Projected to increase, major contribution from Sub Saharan Africa
 - Incidence
 - Prevalence
 - Mortality
- Demands complex preventive approaches
- Drains health resources of a society

Bray et al., 2024; Chen et al., 2023; Xu et al., 2023 ; Sung et al., 2021

Breast cancer

- Fischer defined breast cancer as a systemic disease
 - Fischer's alternative hypothesis (Fischer. 1999)
- Breast cancer is a Heterogeneous disease (Prat & Parker. 2020)
 - Based on ER, PR, HER2nue (receptors status) & Ki67 index
- Shows heterogeneity in risk factors based on (Hiatt et al. 2020)
 - Gender, racial, social, economic, environmental and genetics
 - Modifiable and non-modifiable risk factors

ALL CANCERS



Incidence

Cases

19 976 499

ASR (World)

196.9

Mortality

Deaths

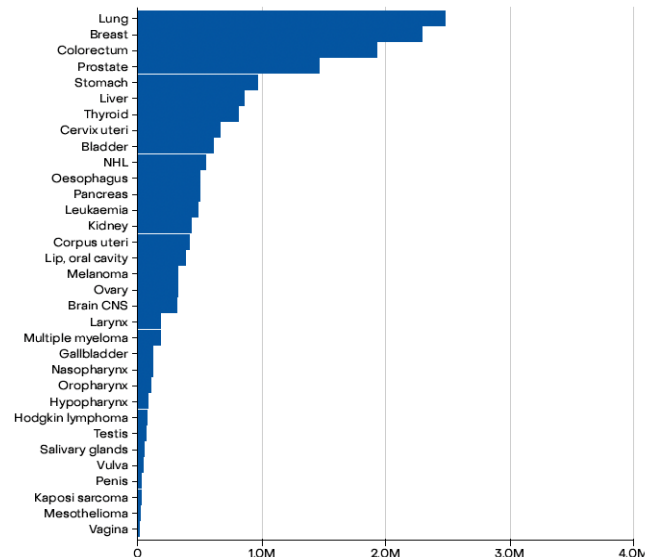
9 743 832

ASR (World)

91.7

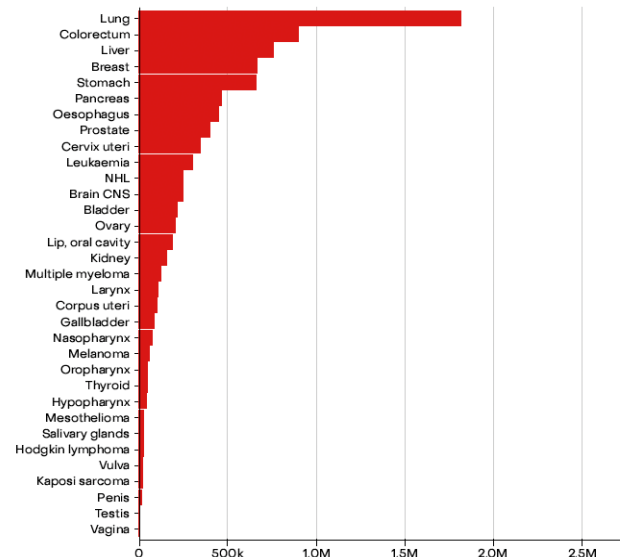
Cancer site ranking

Incidence



Number of new cases, both sexes, all ages

Mortality



Number of deaths, both sexes, all ages

Global burden
of cancer

AFRICA

Number of new cases

1 185 216

Number of deaths

763 843

Number of prevalent cases
(5-year)

2 611 478

Statistics at a glance, 2022

	Males	Females	Both sexes
Population	703 122 445	703 606 315	1 406 728 760
Incidence*			
Number of new cancer cases	506 032	679 184	1 185 216
Age-standardized incidence rate	125.7	140.7	132.3
Risk of developing cancer before the age of 75 years (cum. risk %)	13.4	14.3	13.8
Top 3 leading cancers (ranked by cases)**	Prostate Liver Colorectum	Breast Cervix uteri Colorectum	Breast Cervix uteri Prostate
Mortality*			
Number of cancer deaths	346 945	416 898	763 843
Age-standardized mortality rate	89.9	89.8	88.9
Risk of dying from cancer before the age of 75 years (cum. risk %)	9.3	9.4	9.3
Top 3 leading cancers (ranked by deaths)**	Prostate Liver Lung	Breast Cervix uteri Liver	Breast Cervix uteri Liver
Prevalence*			
5-year prevalent cases	1 035 465	1 576 013	2 611 478

Population(s) Included: Northern Africa, Middle Africa, Western Africa, Southern Africa, Eastern Africa



Kilometers
0 250 500 1000

Data source and methods

Incidence

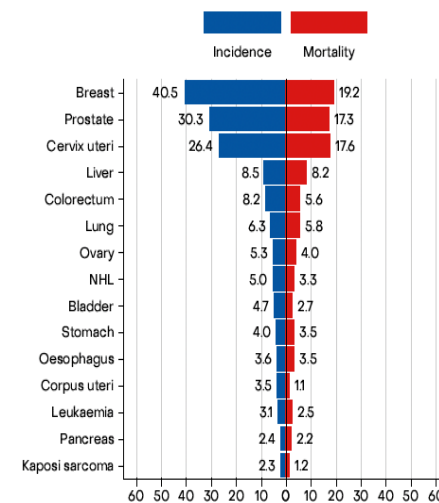
Sum of region-specific cases.

Mortality

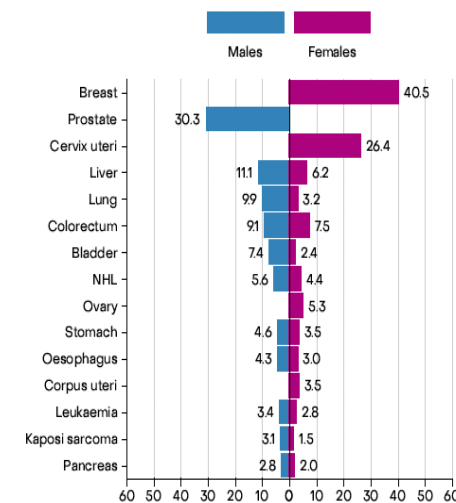
Sum of region-specific deaths

Prevalence

Sum of region-specific prevalent cases.



ASR (World) incidence and mortality rates, top 15 cancers**



ASR (World) incidence rates per sex, top 15 cancers**



SUB-SAHARAN AFRICA HUB



Number of new cases

847 974

Number of deaths

558 878

Number of prevalent cases (5-year)

1 784 684

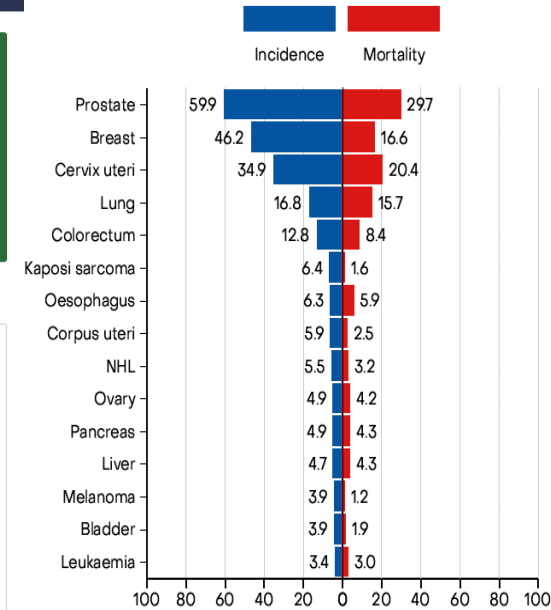
Statistics at a glance, 2022

	Males	Females	Both sexes
Population	574 789 075	576 562 709	1 151 351 784
Incidence*			
Number of new cancer cases	344 977	502 997	847 974
Age-standardized incidence rate	117.6	139.6	127.8
Risk of developing cancer before the age of 75 years (cum. risk %)	12.5	14.2	13.3
Top 3 leading cancers (ranked by cases)**	Prostate Liver Colorectum	Breast Cervix uteri Colorectum	Breast Cervix uteri Prostate
Mortality*			
Number of cancer deaths	236 305	322 573	558 878
Age-standardized mortality rate	84.1	93.5	88.2
Risk of dying from cancer before the age of 75 years (cum. risk %)	8.7	9.8	9.3
Top 3 leading cancers (ranked by deaths)**	Prostate Liver Colorectum	Cervix uteri Breast Colorectum	Cervix uteri Breast Prostate
Prevalence*			
5-year prevalent cases	677 206	1 107 478	1 784 684

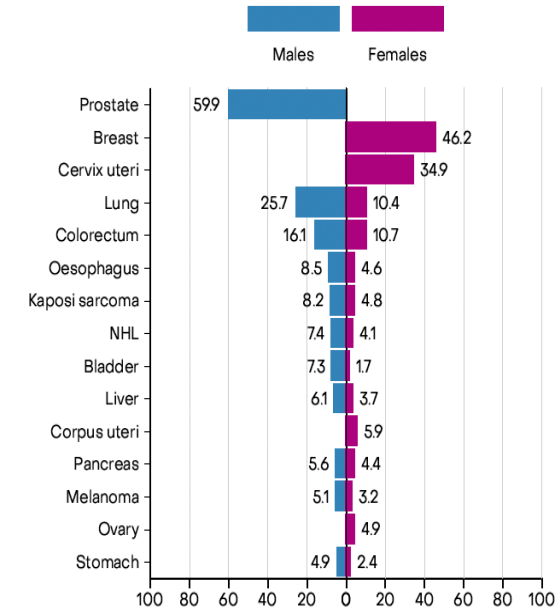
Population(s) included: Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo, Democratic Republic of, Congo, Republic of, Côte d'Ivoire, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, France, La Réunion, Gabon, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome and Principe, Senegal, Sierra Leone, Somalia, South Africa, South Sudan, Eswatini, Tanzania, United Republic of, The Republic of the Gambia, Togo, Uganda, Zambia, Zimbabwe



Kilometers
0 250 500 1000



ASR (World) incidence and mortality rates, top 15 cancers**



ASR (World) incidence rates per sex, top 15 cancers**

ZAMBIA

Number of new cases

15 296

Number of deaths

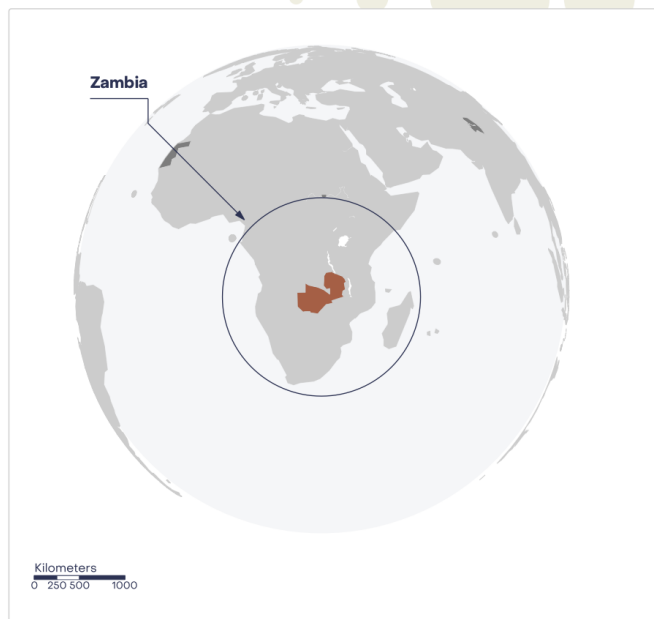
9 770

Number of prevalent cases
(5-year)

33 022

Statistics at a glance, 2022

	Males	Females	Both sexes
Population	9 642 901	9 827 337	19 470 238
Incidence*			
Number of new cancer cases	6 433	8 863	15 296
Age-standardized incidence rate	162.6	164.8	159.5
Risk of developing cancer before the age of 75 years (cum. risk %)	16.3	16.5	16.2
Top 3 leading cancers (ranked by cases)**	Prostate Kaposi sarcoma Oesophagus	Cervix uteri Breast Kaposi sarcoma	Cervix uteri Kaposi sarcoma Prostate
Mortality*			
Number of cancer deaths	4 121	5 649	9 770
Age-standardized mortality rate	110.7	113.1	109.2
Risk of dying from cancer before the age of 75 years (cum. risk %)	10.9	11.8	11.3
Top 3 leading cancers (ranked by deaths)**	Kaposi sarcoma Prostate Oesophagus	Cervix uteri Kaposi sarcoma Breast	Cervix uteri Kaposi sarcoma Prostate
Prevalence*			
5-year prevalent cases	12 549	20 473	33 022



Data source and methods

Incidence

Country-specific data source: [{"dt_list": "Lusaka Cancer Registry"}]

Method: Most recent rates from a single registry applied to 2022 population

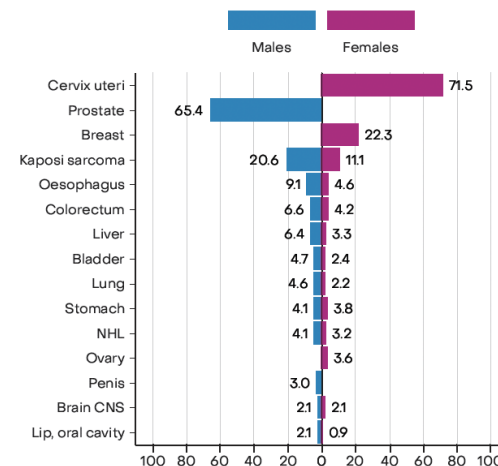
Mortality

Country-specific data source: No data

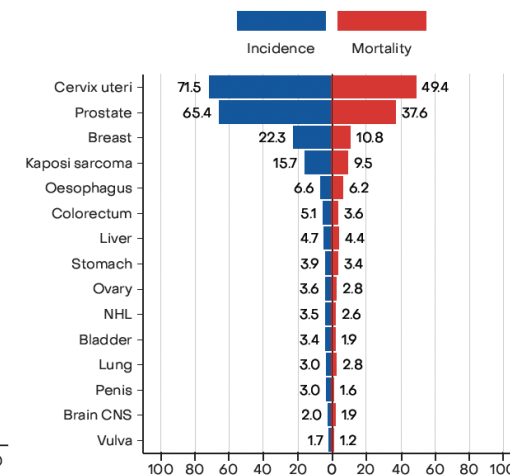
Method: Estimated from national incidence estimates by modelling, using mortality:incidence ratios derived from survival estimation

Prevalence

Computed using sex-, site- and age-specific incidence to 1-,3- and 5-year prevalence ratios from Nordic countries for the period (2011-2020), and scaled using Human Development Index (HDI) ratios.



ASR (World) incidence rates per sex, top 15 cancers**

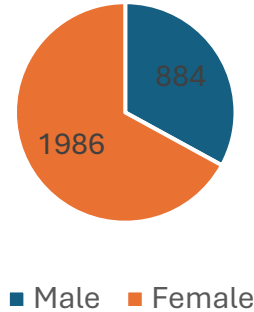


ASR (World) incidence and mortality rates, top 15 cancers**

CDH DATA REPORT 2020

CANCER TYPE	#s
Cervical	942
Breast	260
Prostate	170
Lymphomas	109
Colorectal	78
Oesophagus	63
Eye	63
Kaposi sarcoma	54
Liver	50
Stomach	37

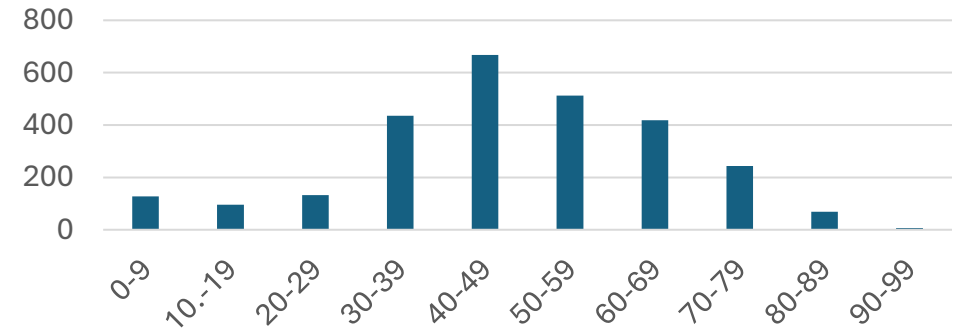
GENDER DISTRIBUTION



The ratio of male to female patient is 1:2

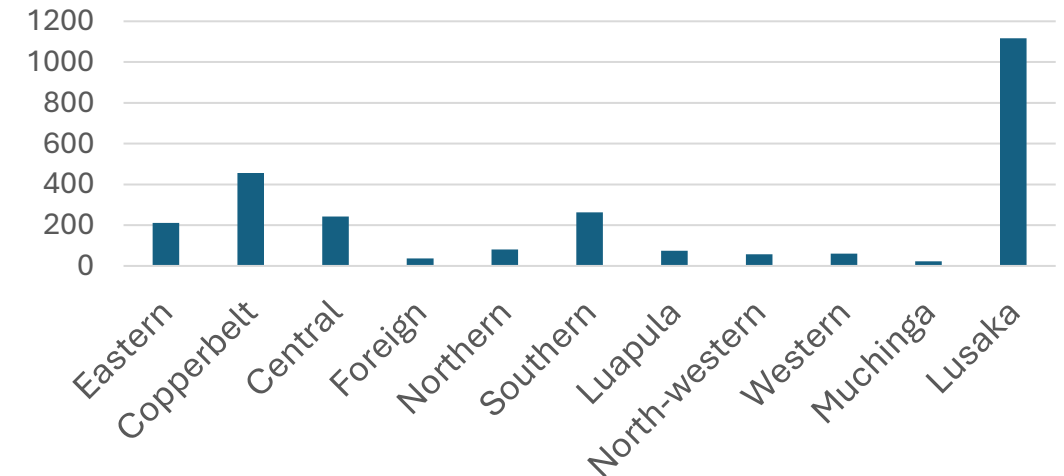
- The total number of OPD cases was 2870
- Among the top 10 cancers at CDH cervical, breast and prostate cancer are the most common .

AGE DISTRIBUTION



The average age is around 45

PROVINCIAL DISTRIBUTION

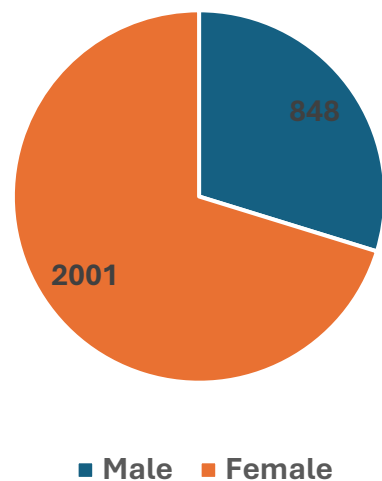


Most of the patients seen at CDH come from Lusaka province representing about 40% of the total patients

CDH ANNUAL REPORT 2024

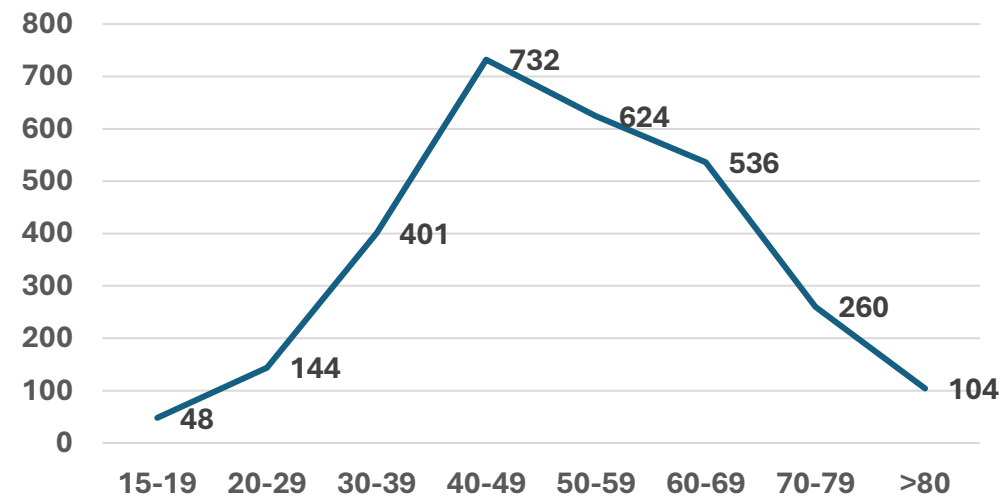
CANCER TYPE	#	%
Cervical Cancer	1024	36
Breast Cancer	356	13
Prostate Cancer	215	8
Colorectal Cancer	109	4
Oesophagus Cancer	94	3
Vulva Cancer	90	3
Stomach Cancer	79	3
Lymphoma's	66	2
Liver Cancer	61	2
Endometrium Cancer	45	2

GENDER DISTRIBUTION



The ratio of Male to Female patient is 1:2

AGE DISTRIBUTION

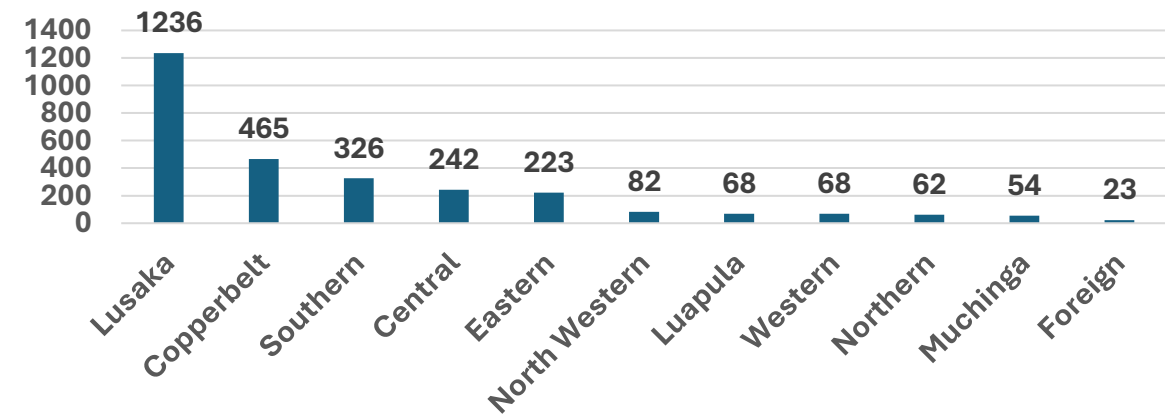


The average age is around 45

The total number of OPD cases was 3044.

Among the top 10 cancers at CDH Cervical, Breast and Prostate cancer are the most common.

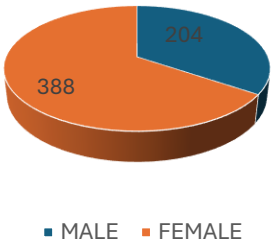
LOCATION



Most of the patients seen at CDH come from Lusaka province representing 43% of the total patients.

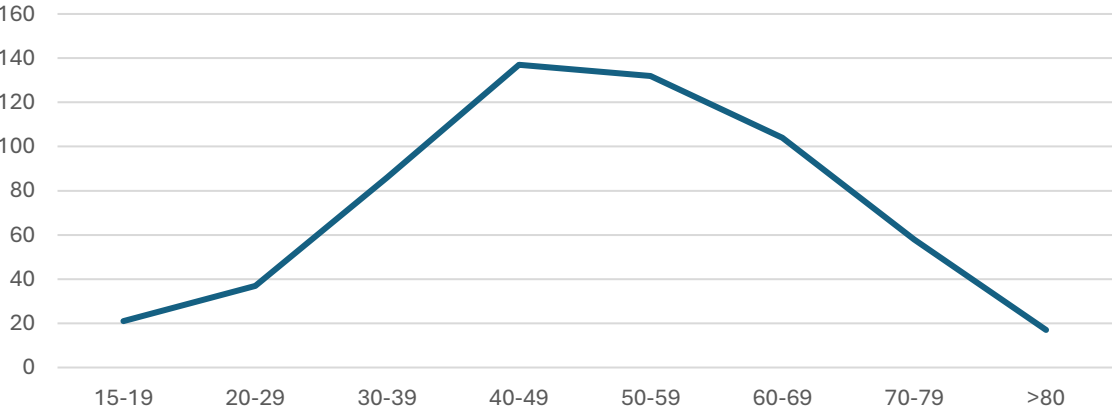
ADULT MORTALITY 2020

GENDER DISTRIBUTION



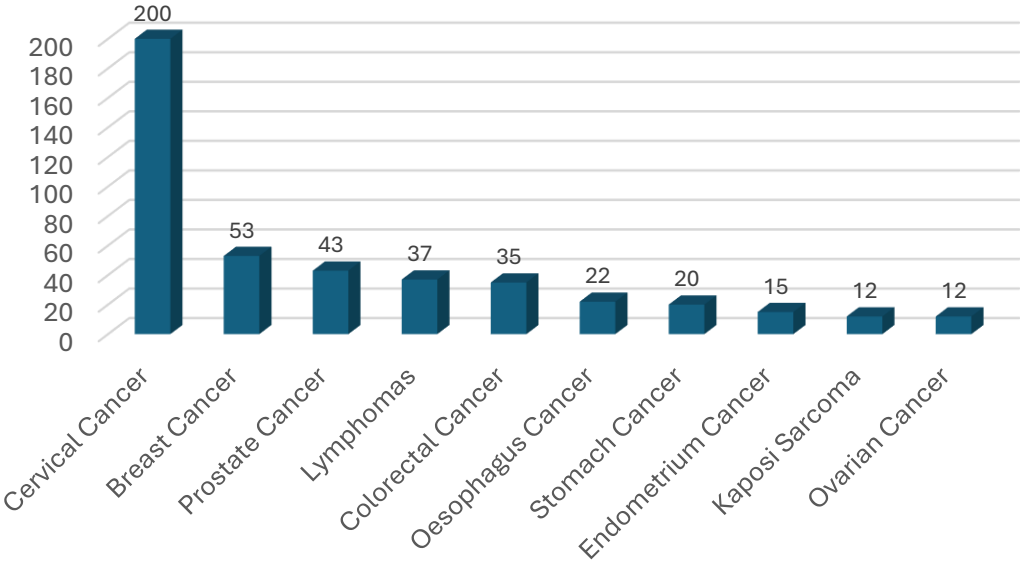
We recorded a total of 592 adult mortality cases with 388 being women representing 65%.

AGE DISTRIBUTION



The highest age group of mortality was between 40-49 representing 23% followed by 50-59 representing 22%.

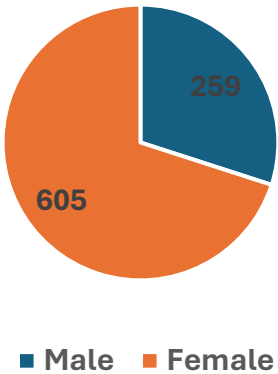
TOP TEN CANCERS



The leading cause of death among adults was Cervical Cancer which represented 34% followed by Breast Cancer which represented 9%.

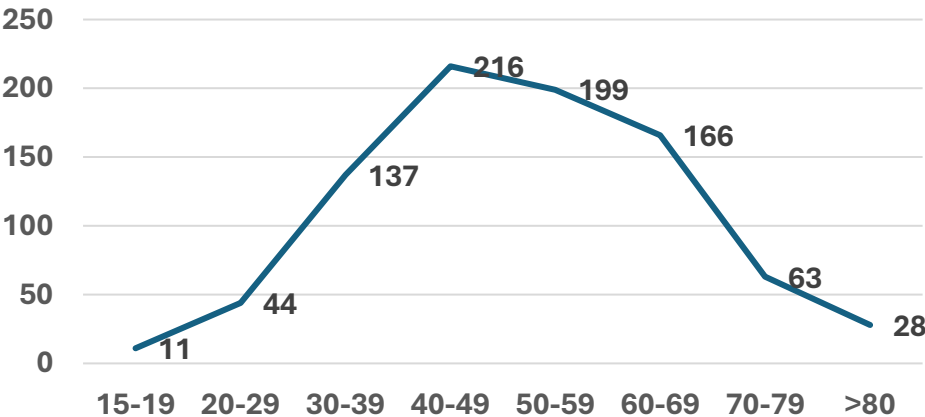
ADULT MORTALITY 2024

GENDER DISTRIBUTION



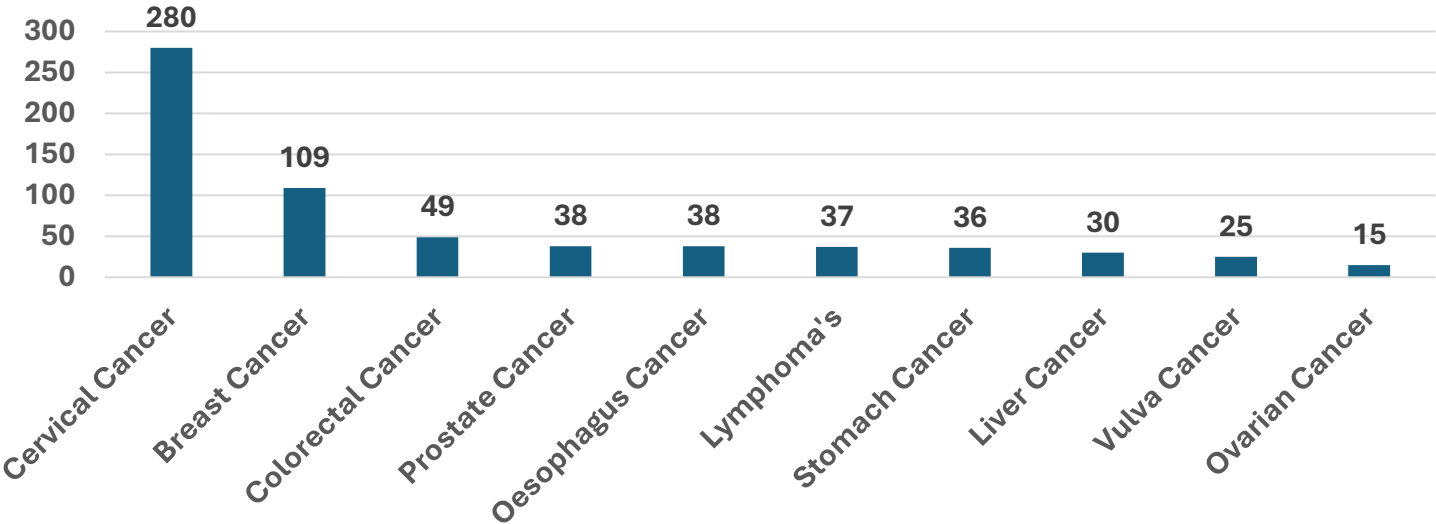
CDH recorded a total of 864 adult mortality cases with 605 being female representing 70%.

AGE DISTRIBUTION



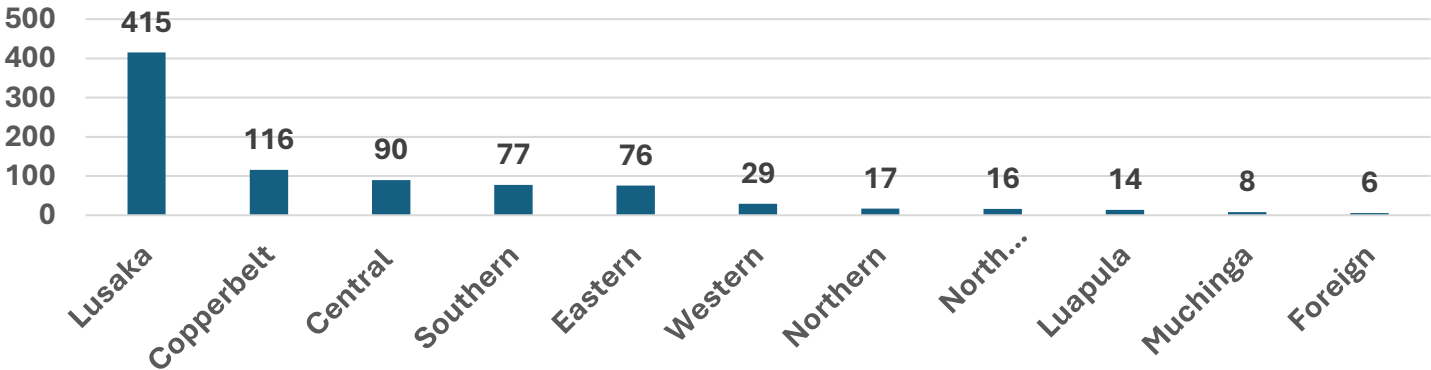
The highest age group of mortality was between 40-49 representing 25% followed by 50-59 representing 23%.

TOP TEN CANCER DIAGNOSIS



The leading cancer among adults is Cervical Cancer representing 32% followed by Breast Cancer representing 13%.

LOCATION



The highest number of patients are from Lusaka representing 48%.

Cancer disparities

INEQUITIES IN BREAST CANCER DEATHS

High-income countries 9 out of 10 survive



India 6 out of 10 survive



South Africa 4 out of 10 survive



*over 5 years

Data source and methods

Incidence

Country-specific data source: [{"dt_list": "Lusaka Cancer Registry"}]

Method: Most recent rates from a single registry applied to 2022 population

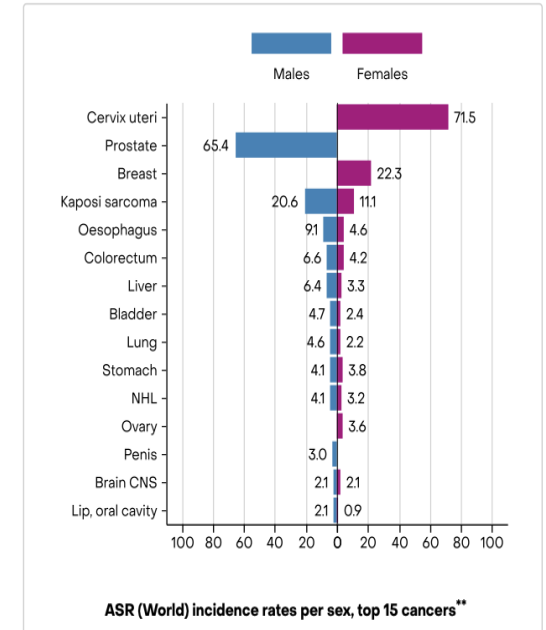
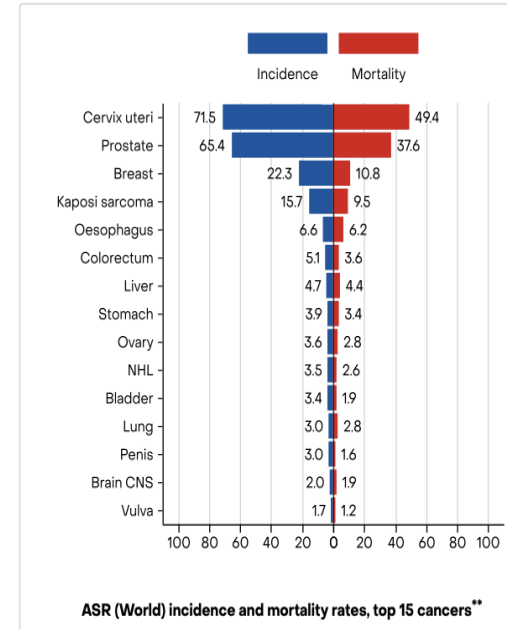
Mortality

Country-specific data source: No data

Method: Estimated from national incidence estimates by modelling, using mortality:incidence ratios derived from survival estimation

Prevalence

Computed using sex-, site- and age-specific incidence to 1-,3- and 5-year prevalence ratios from Nordic countries for the period (2011-2020), and scaled using Human Development Index (HDI) ratios.



Zambian scenario

- ~70% diagnosed late: Stage III & IV
- Mortality ~ 50% at 3 – 5 years

GBCI - gbci@who.int

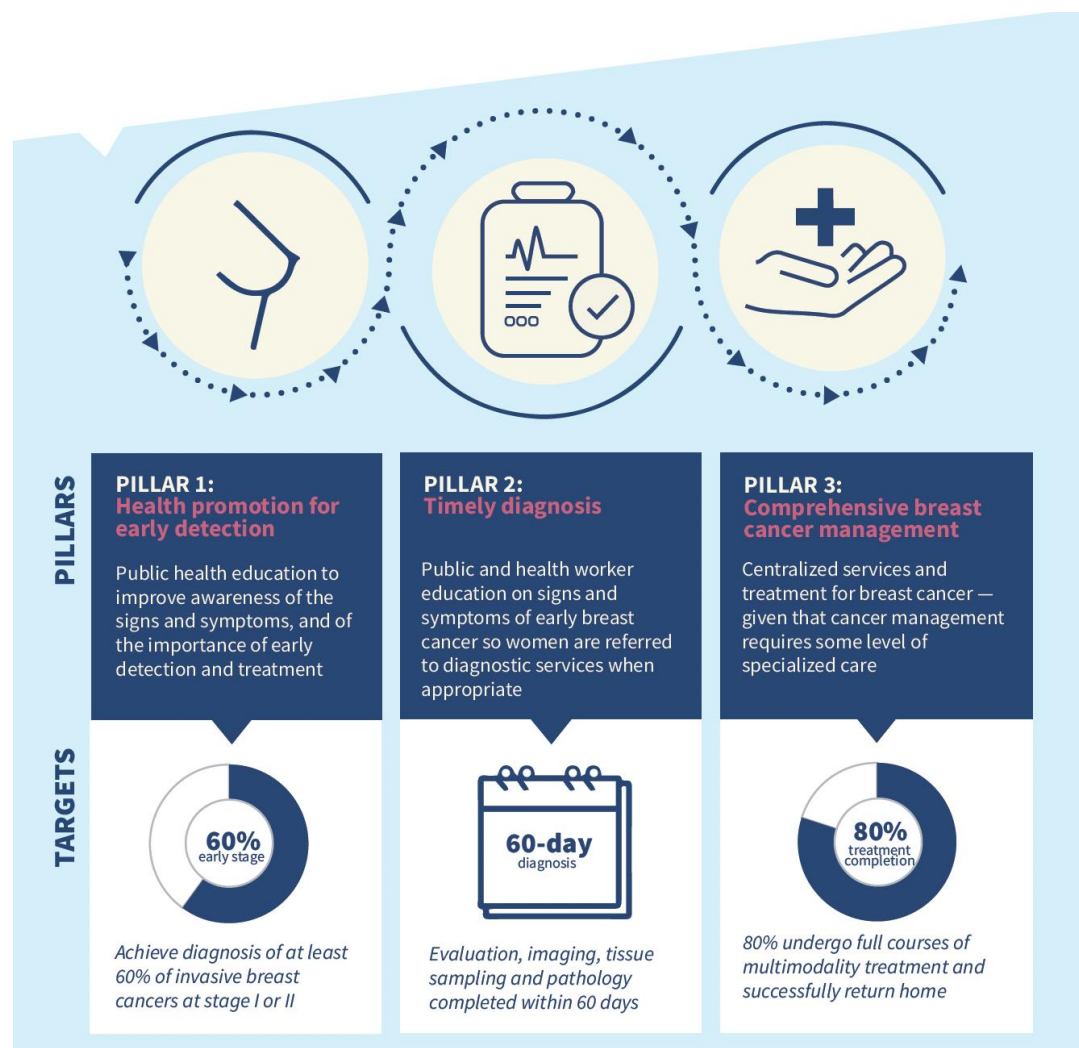
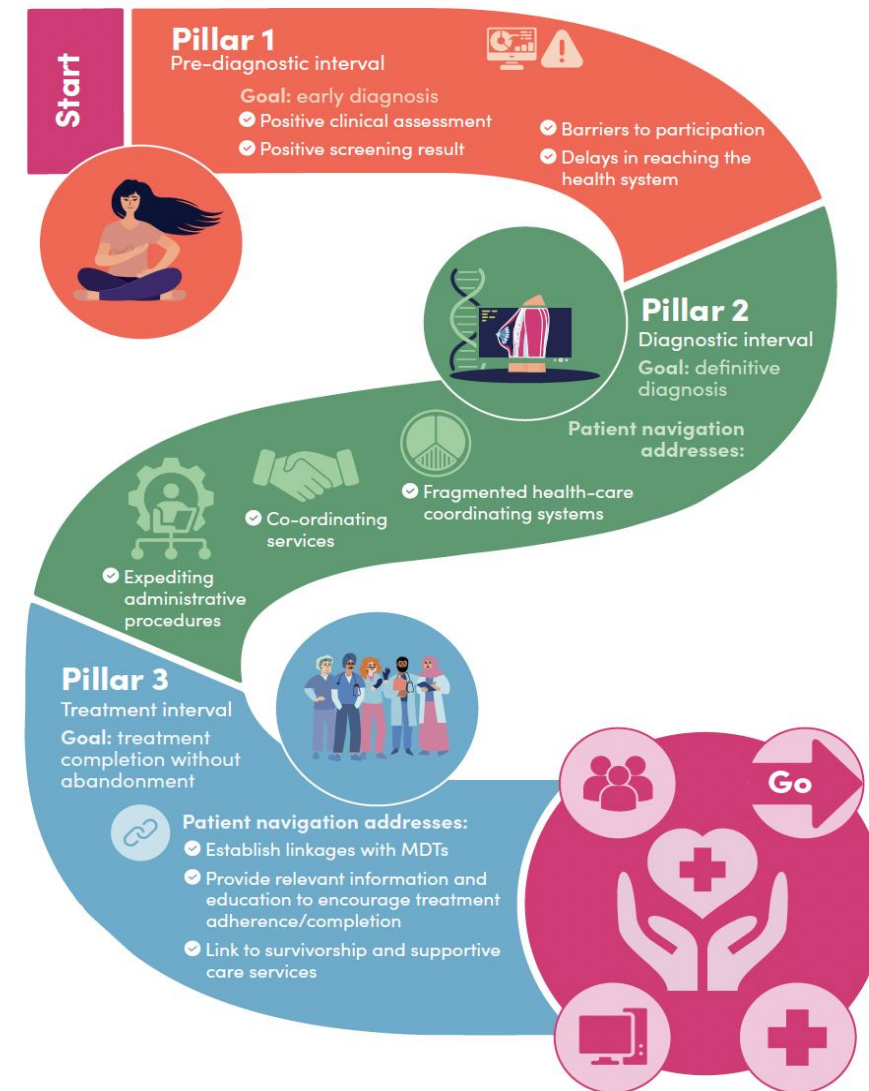


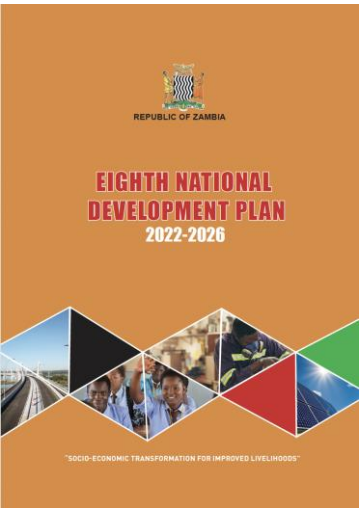
Fig. 1. Patient navigation and the three pillars of the GBCI breast cancer patient care pathway



Patient navigation for early detection, diagnosis and treatment of breast cancer: technical brief. Geneva: World Health Organization; 2024. Licence: CC BY-NC-SA 3.0 IGO.

The future of breast health in Zambia

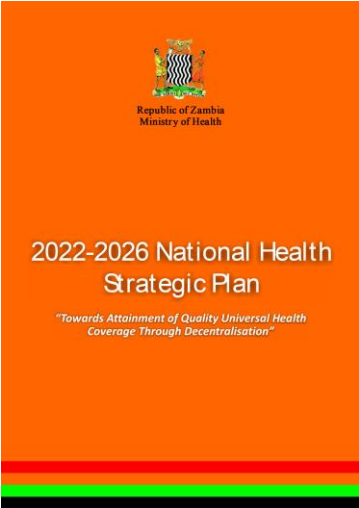
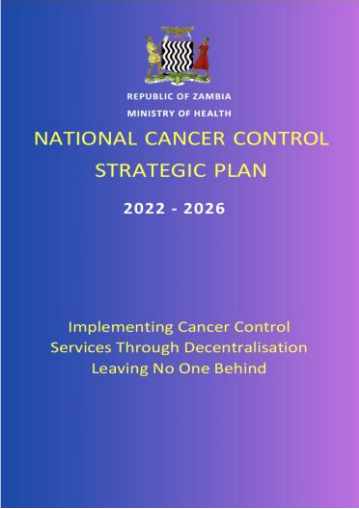
- Increase awareness
 - HCW awareness
 - Community awareness
- Expand services
 - Establish breast health services country wide
 - Patient navigation system
 - Data



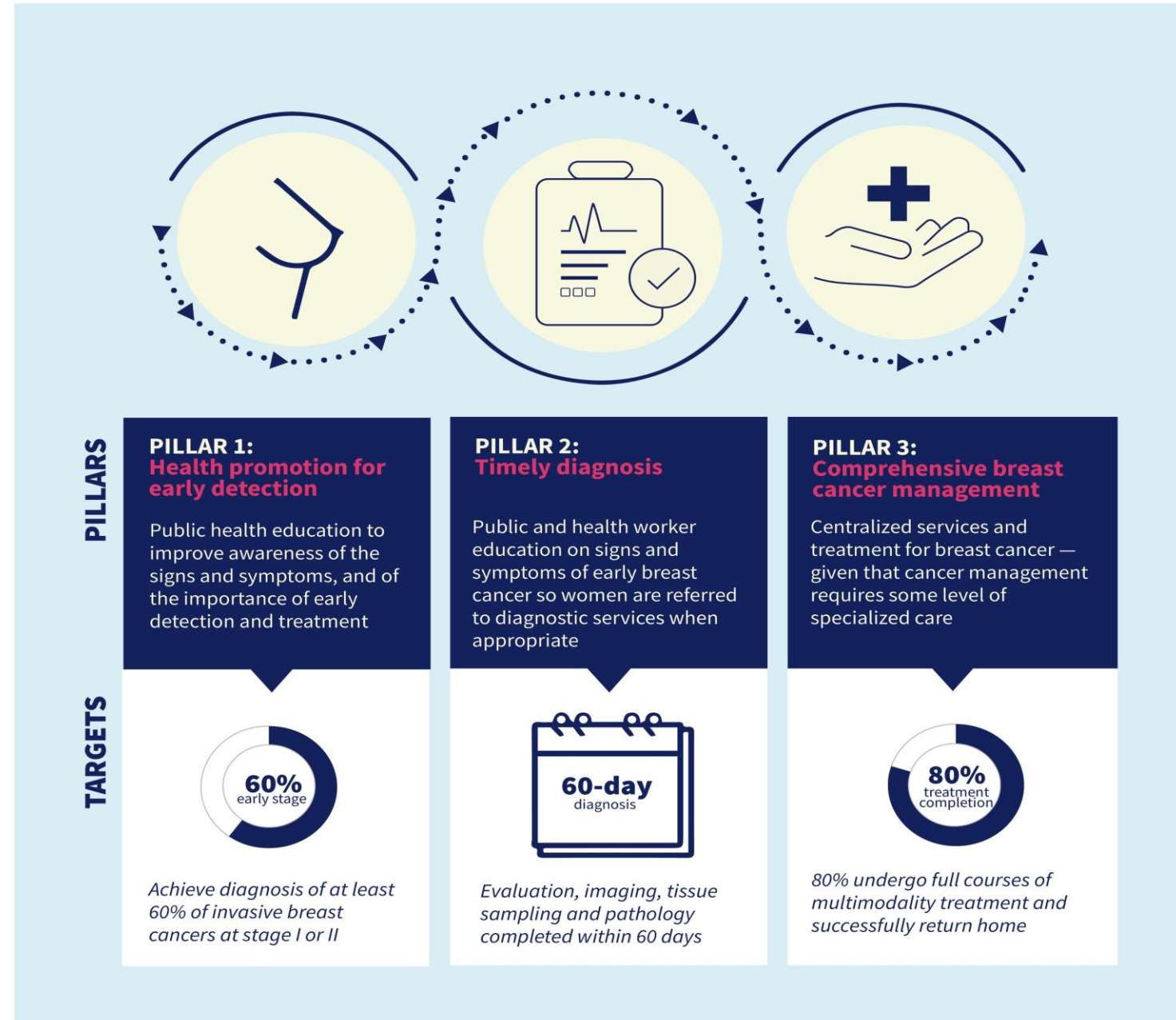
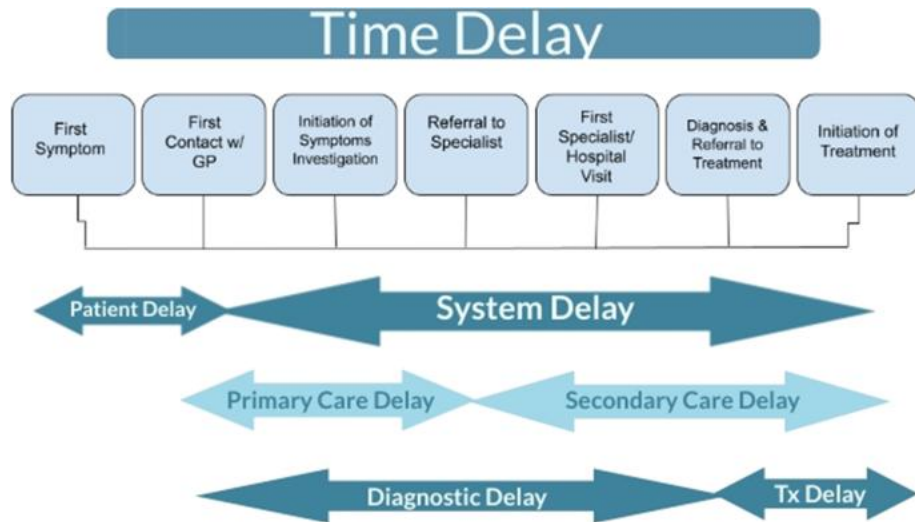
BREAST CANCER CONTROL
MASTER TRAINERS MANUAL

Lusaka, Zambia

1



Approach to BC MDT to achieve improve survival



Barriers from an “expert” opinion

- System failures
 - Patient navigating through a complex referral system and health service delivery (laboratory, pathology, radiology)
 - Repeated reviews without diagnostic or management impact
 - Lack of awareness regarding breast cancer
- Patient factors
 - Lack or awareness
 - Fear
 - Socioeconomic challenges

Thank you for your attention

Welcome your thoughts