



# Centers of Excellence in Cancer HEALTH SYSTEMS COMPONENTS: BREAST CANCER AS A MODEL

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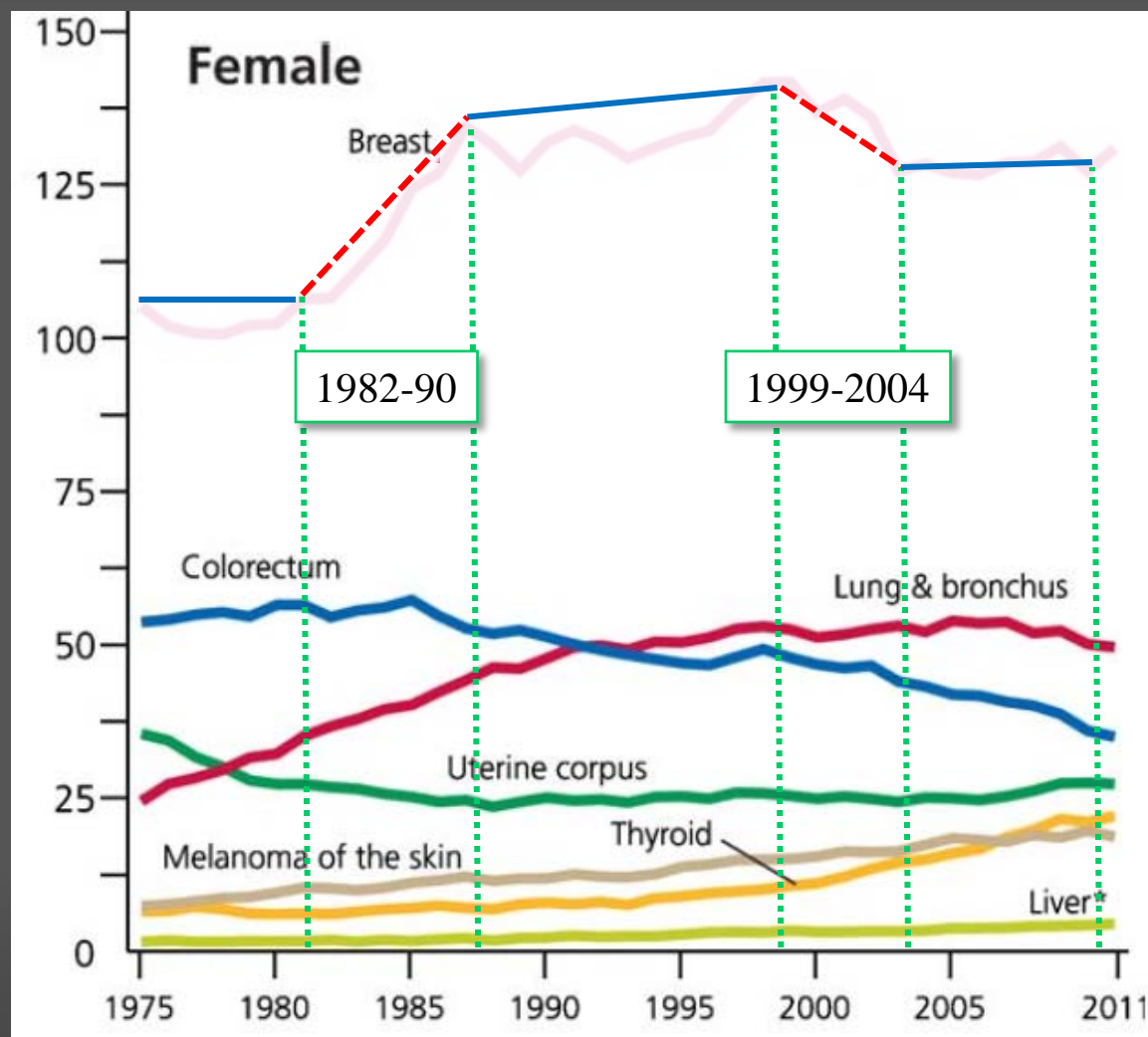


# HEALTH SYSTEMS COMPONENTS

- Measuring the Cancer Burden
- Cancer Control Planning
- Networks and Patient Triage
- Longitudinal Care and Follow-Up



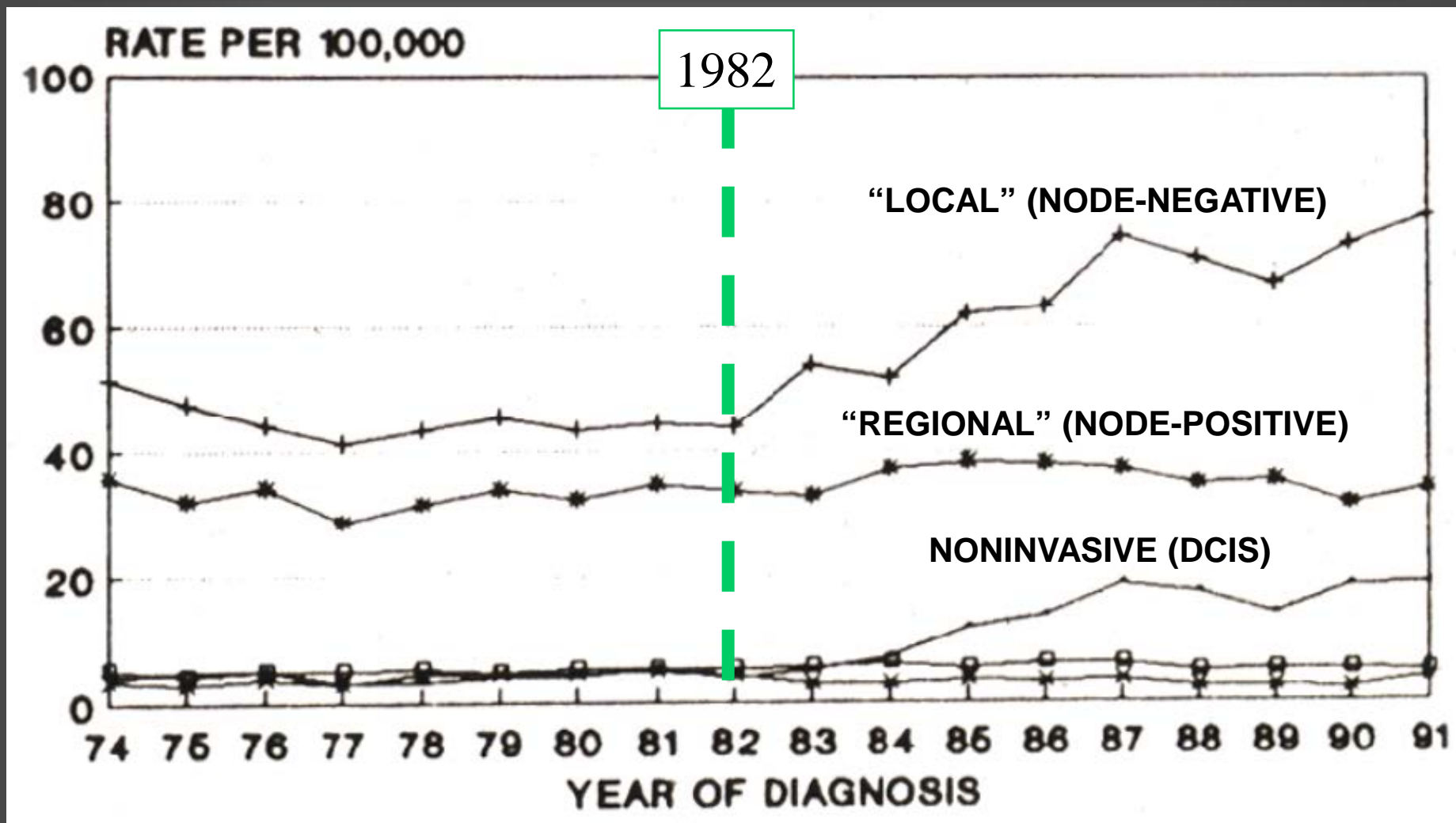
# U.S. CANCER INCIDENCE 2015 (EST.)



SOURCE: Seigel Ca Cancer J Clin 65:5, 2015

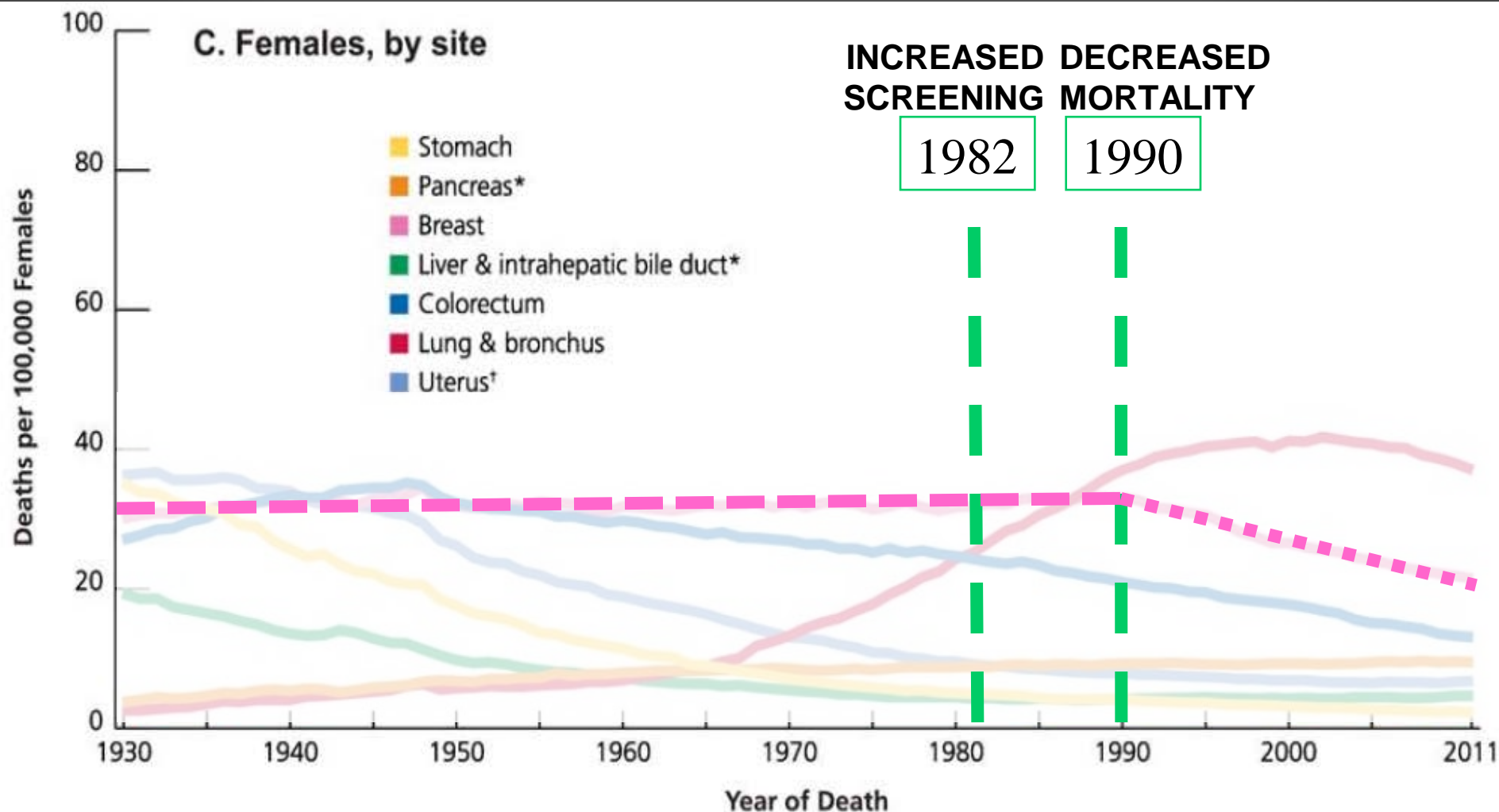


# AGE ADJUSTED INCIDENCE 1973-1991





# U.S. CANCER MORTALITY 2015 (EST.)



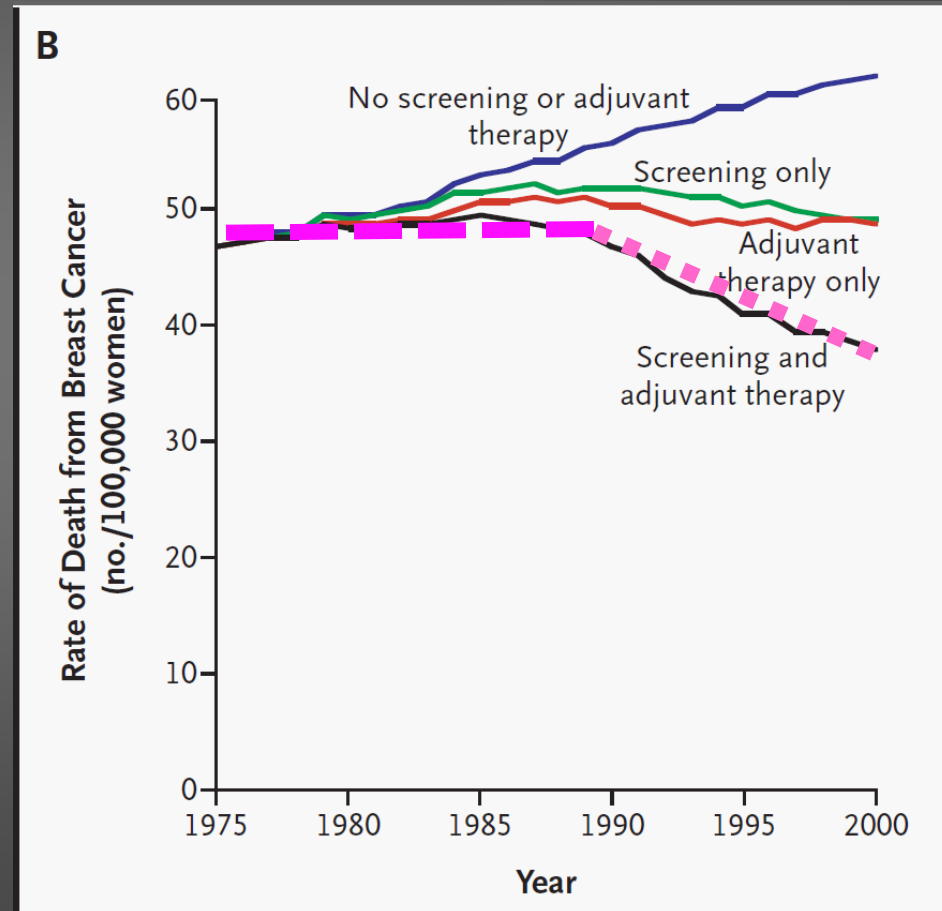
SOURCE: Seigel Ca Cancer J Clin 65:5, 2015



# MORTALITY MODELING

## SCREENING AND ADJUVANT THERAPY

- Early detection is essential to improving outcome.
- Effective early detection requires prompt accurate histologic diagnosis.
- To save lives, screening programs must be linked to timely, effective treatment.







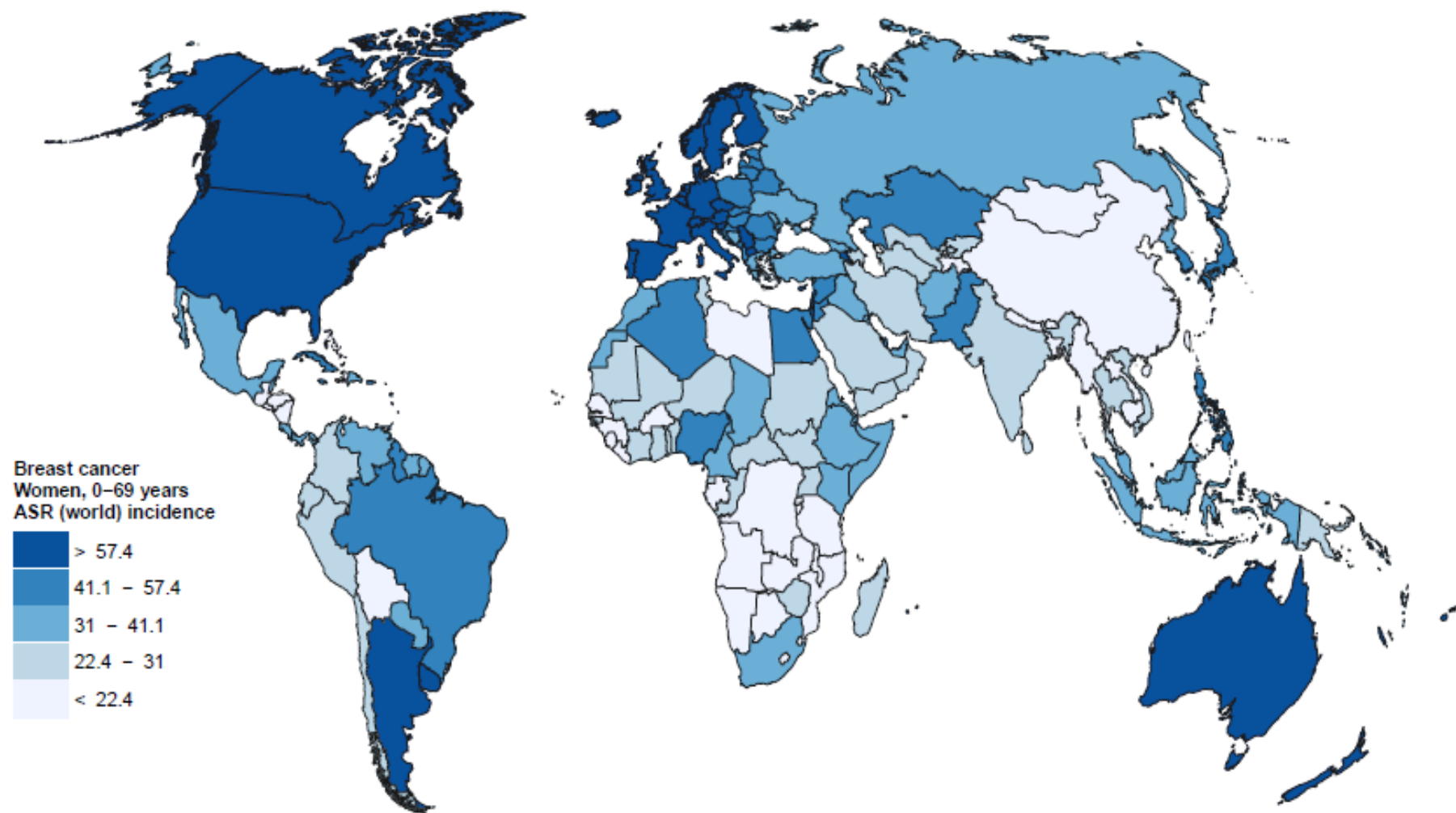
# GLOBAL BREAST CANCER BURDEN

## INCIDENCE AND MORTALITY: 2015-2024

- Most common cancer among women
  - ❖ 19.7 million cases in next decade
  - ❖ 10.6 million cases in less developed countries
  - ❖ By 2020, over 1 million cases per year in LMCs
- Most common cancer killer among women
  - ❖ 5.8 million women will die in next decade
  - ❖ 3.9 million deaths in less developed countries
  - ❖ >1.5 million deaths premature and preventable



# BREAST CANCER GLOBAL INCIDENCE

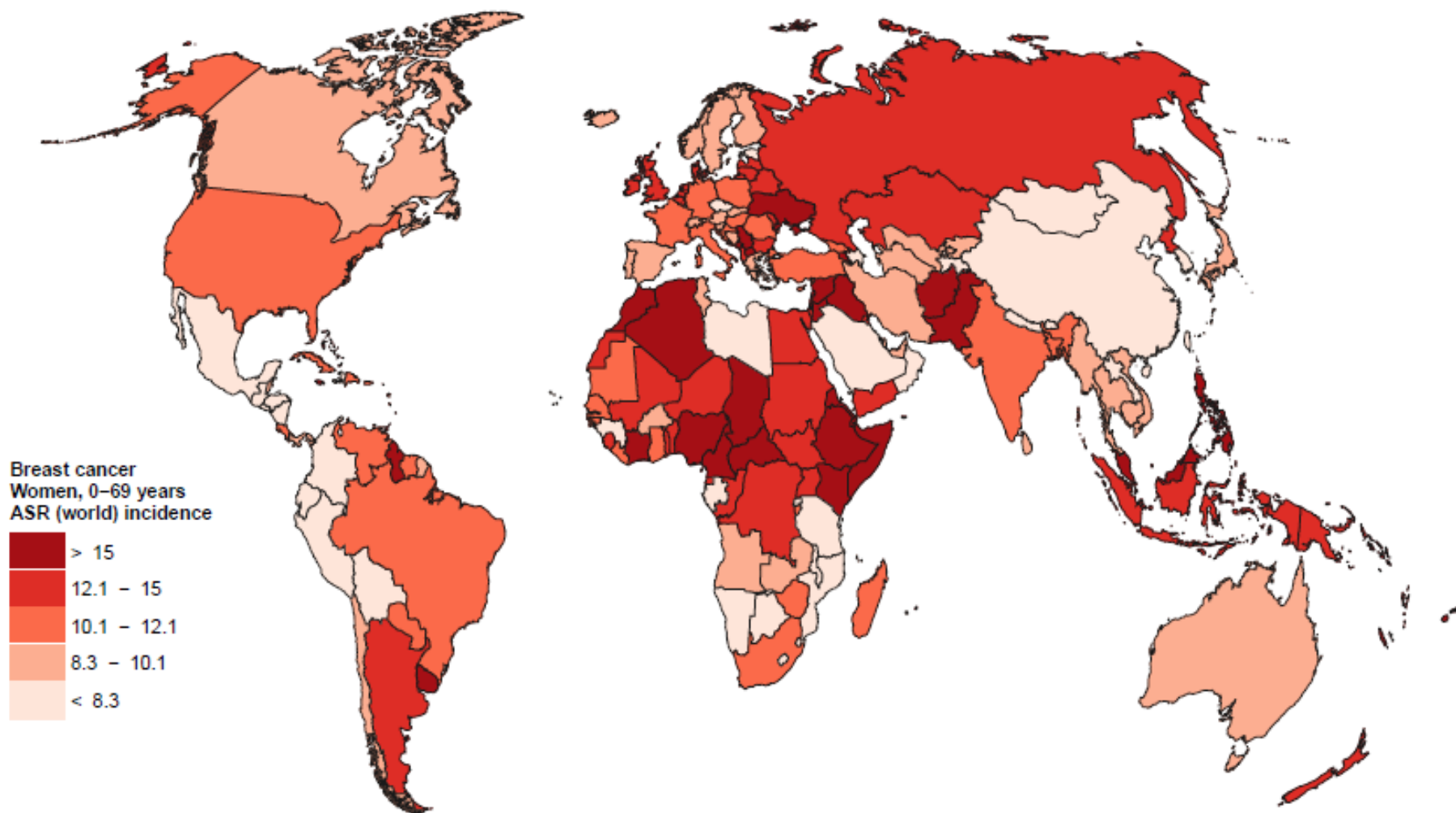


SOURCE: Globocan 2012 (IARC)





# BREAST CANCER GLOBAL MORTALITY



SOURCE: Globocan 2012 (IARC)



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# CANCER CONTROL STRATEGIES

## PRIMARY PREVENTION

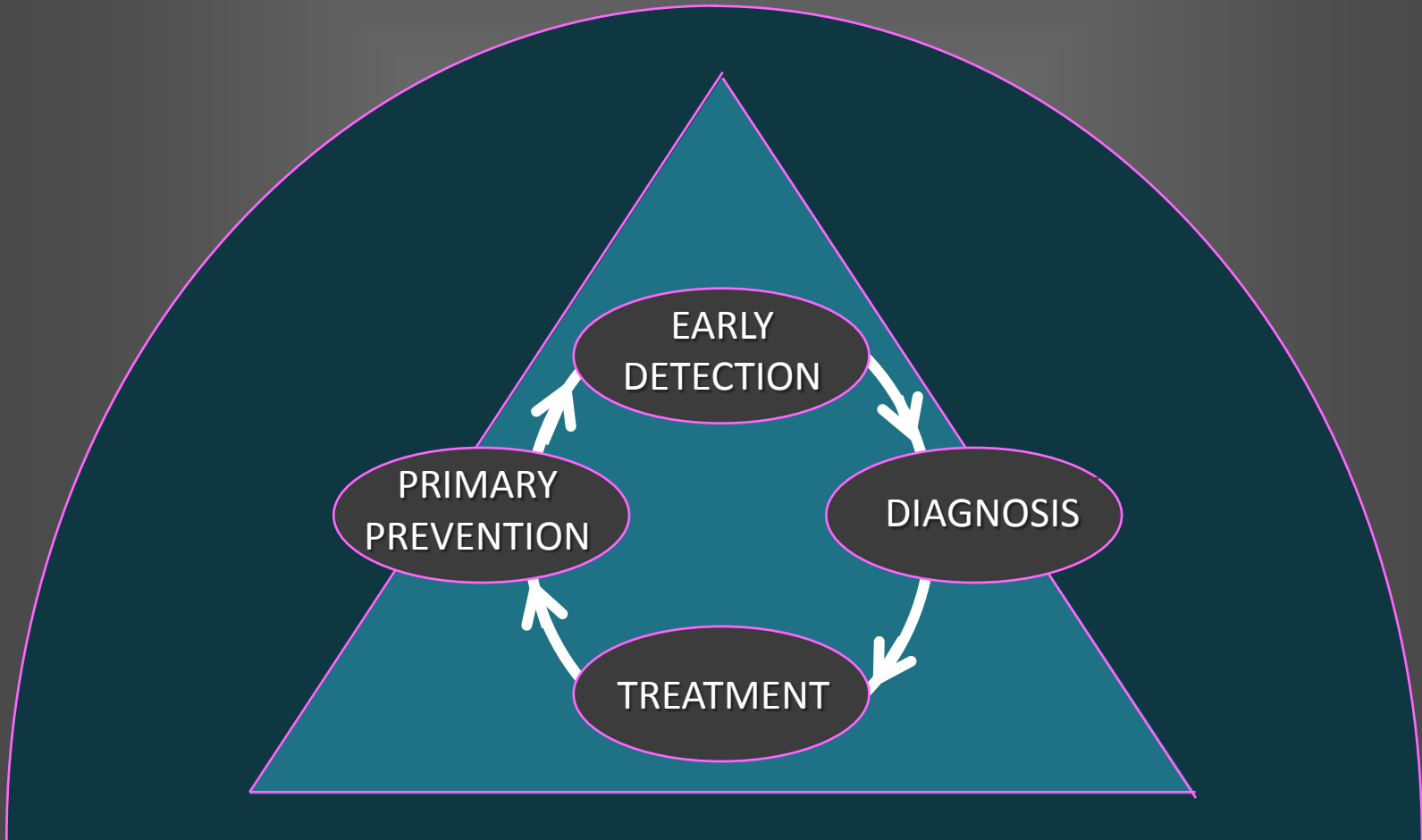
Population-Attributable Fraction (PAF) reflects potential prevention impact

Etiology	Carcinogenic risk factor (associated PAF)	Overall PAF (%)	Risk reduction programs	Key multisectoral partners	Estimated cost-effectiveness
Infectious etiologies	HPV (cervical cancer 90–100%)* Hepatitis B and C (HCC 77%)* <i>H. pylori</i> (gastric cancer 75%)*	18	Vaccinations	Health care workers Pharmaceutical companies Legislative bodies	Very cost-effective
Behavioral factors	Tobacco (30%)† Obesity (20%)† Diet (5%)† Alcohol (4%)†	66	Tobacco cessation Exercise programs Public education and outreach	General population (health literacy) Legislative bodies Health care workers	Very cost-effective
Environmental factors	Air pollution Aflatoxins	4	Environmental regulations	Legislative bodies Business sector	Potentially cost-effective
Clinical interventions	Chemoprevention (such as tamoxifen, aspirin, celecoxib, or finasteride) Surgical procedures (such as prophylactic mastectomy or prophylactic oophorectomy)	N/A	Insurance coverage for correctly selected individuals at elevated risk	Health care workers Pharmaceutical companies General population	Cost-effective



# CANCER CONTROL STRATEGIES

## DISEASE-BASED APPROACH





# CANCER CONTROL STRATEGIES

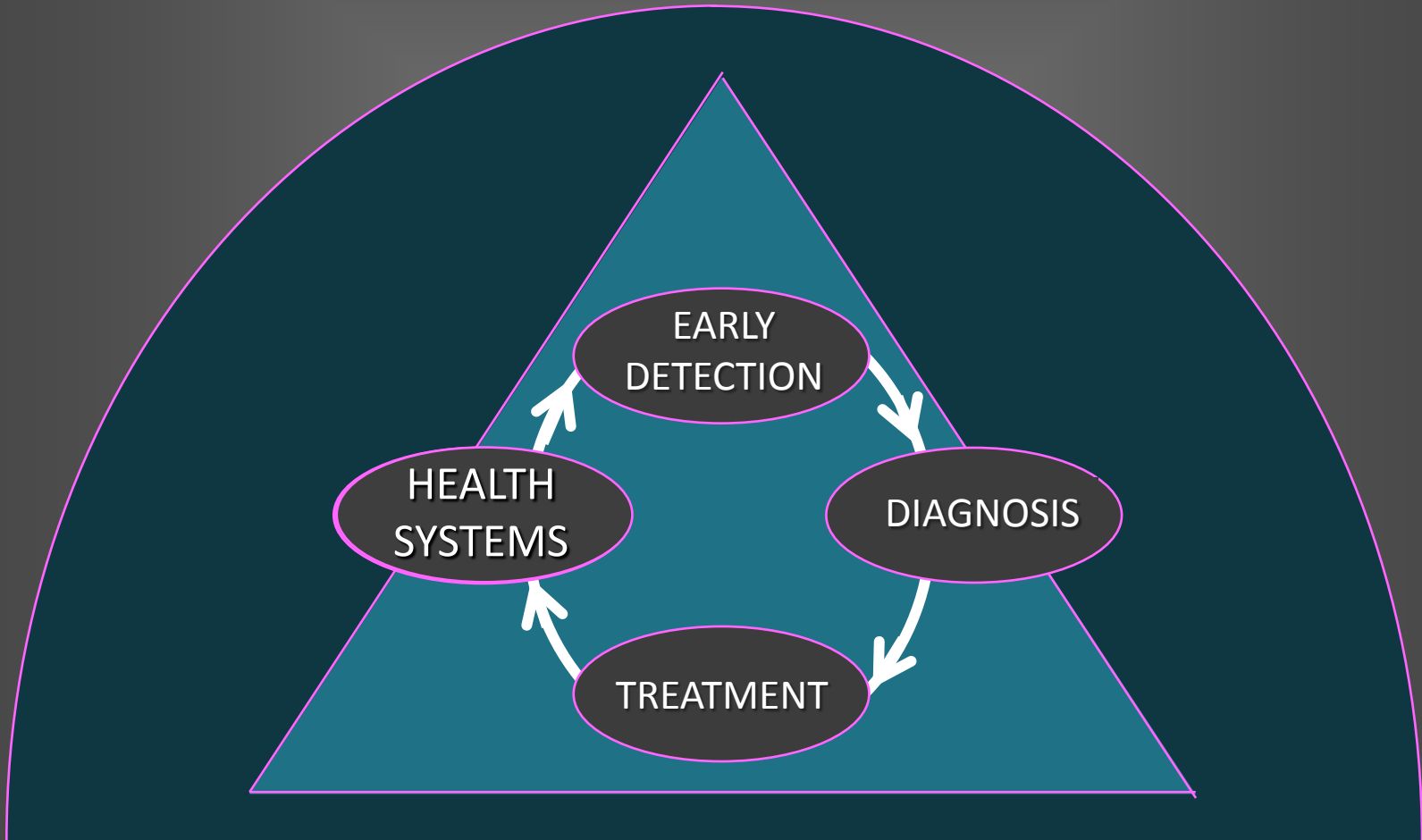
## BREAST CANCER PREVENTION

Health behaviors associated  
with reduced breast cancer risk

1. Prolonged lactation
2. Regular physical activity
3. Weight control
4. Avoid excess alcohol intake
5. Avoid prolonged use of exogenous hormones
6. Avoid excessive radiation exposure



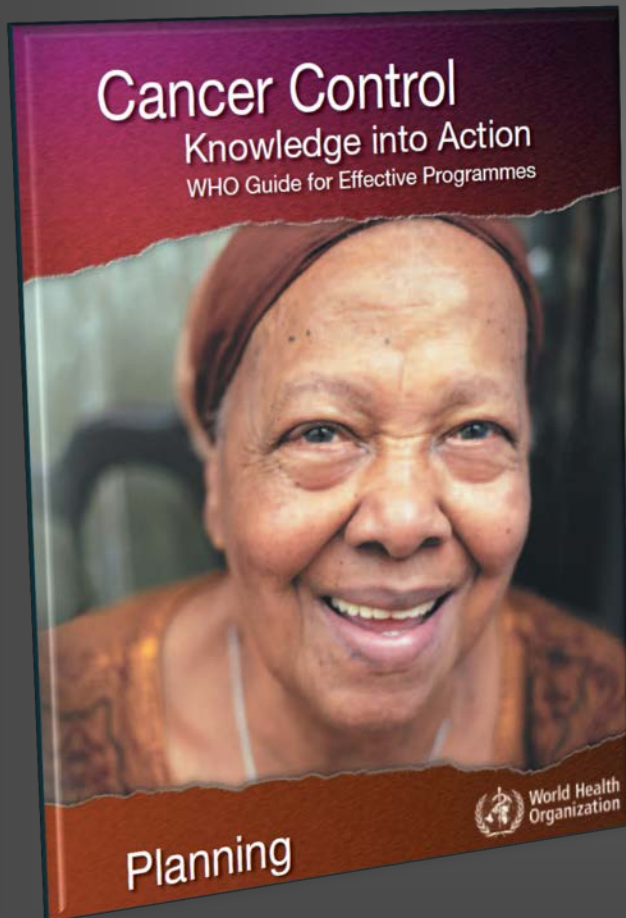
# CANCER CONTROL STRATEGIES COMPREHENSIVE APPROACH







# CANCER CONTROL PLANNING WORLD HEALTH ORGANIZATION



## *Practical Guides for Managers*

Planning

Prevention

Early detection

Diagnosis and treatment

Palliative care

Policy and advocacy

[www.who.int/cancer/publications/cancer\\_control\\_planning/en/](http://www.who.int/cancer/publications/cancer_control_planning/en/)

# International Cancer Control Partnership (ICCP)

**ICCP Mission:** Assist cancer planners and public health actors in the development, implementation and evaluation of high quality National Cancer Control Plans.

## Priorities:

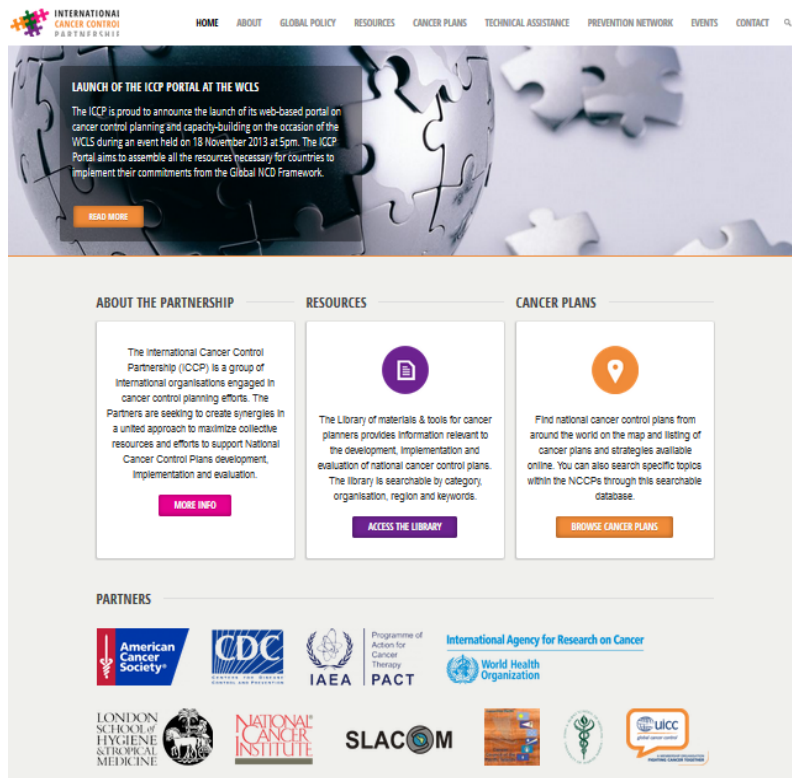
- Develop and promote advocacy at global and local levels to make cancer control a priority;
- Promote a coordinated approach to technical assistance and training;
- Work within the ICCP to coordinate efforts around development and dissemination of evidence-based materials and address data gaps;
- Promote communities of practice on specific areas (the Networks);
- Provide an online one-stop shop of best-practice resources – ICCP Portal.

## Knowledge-sharing and TA activities along the Cancer Care Continuum:



## The ICCP Portal

***An online one-stop shop for cancer planners and policymakers hosted by UICC with inputs from ICCP Partners.***



- **What is the ICCP Portal?** The ICCP created a Portal that pools together many vital resources to assist countries in implementing commitments from the Global NCD Framework in the cancer field - all in ONE PLACE.
- **A knowledge-sharing platform featuring:**
  - Interactive map of cancer & NCD Plans;
  - Library of materials & tools;
  - Case studies;
  - Technical assistance opportunities;
  - Prevention campaigns repository;
  - Events, Global Initiatives, and more.

**[www.iccp-portal.org](http://www.iccp-portal.org)**

# ICCP Map of Cancer and NCD Plans

**SELECT A CANCER PLAN**  
Please note that this is not an exhaustive list of cancer plans and, with your help we hope to add more cancer plans

**AFRICA**

**AMERICAS**

Nicaragua  
Panama

**NORTHERN AMERICA**

Bermuda  
Canada  
Mexico  
Guam, Western and Micronesia

**ASIA**

**EUROPE**

**OCEANIA**

Enter keyword(s) to search within the cancer plans (e.g. tobacco, prevention or cervical cancer) **SEARCH**

**SUGGEST A CANCER PLAN**

*National Strategy for Prevention and Control of Noncommunicable diseases (NCDs)	Afghanistan	2013 to 2018	<a href="#">Download PDF file</a>
Cancer Plan for the African Continent 2013-2017	Africa	2013 to 2017	<a href="#">Download PDF file</a>
National Cancer Control Program	Albania	2011 to 2020	<a href="#">Download PDF file</a>
* National Non Communicable Disease Policy - Preventing Chronic Conditions Working Towards a Healthy Life for all Samoans	American Samoa	2010 to 2015	<a href="#">Download PDF file</a>
* Estrategia Nacional para la Prevención y Control de Enfermedades no Transmisibles	Argentina	2009	<a href="#">Download PDF file</a>
Western Australia Cancer Plan	Australia	2012 to 2017	<a href="#">Download PDF file</a>
New South Wales Cancer Plan	Australia	2011 to 2015	<a href="#">Download PDF file</a>
Queensland Strategic Directions for Cancer Prevention and Control	Australia	2009 to 2012	<a href="#">Download PDF file</a>
South Australia Cancer Control Plan	Australia	2011 to 2015	<a href="#">Download PDF file</a>
Victoria's Cancer Action Plan	Australia	2008 to 2011	<a href="#">Download PDF file</a>
Tasmania Cancer Framework and Strategic Cancer Plan	Australia	2010 to 2013	<a href="#">Download PDF file</a>
Northern Territory Cancer Plan	Australia	2013 to 2016	<a href="#">Download PDF file</a>
Cancer Australia National Strategic Plan	Australia	2011 to 2014	<a href="#">Download PDF file</a>
National Cancer Control Strategy	Bangladesh	2009 to 2015	<a href="#">Download PDF file</a>
* Strategic Plan for the surveillance and prevention of non communicable diseases	Bangladesh	2011 to 2015	<a href="#">Download PDF file</a>
National Cancer Plan	Belgium	2008 to 2010	<a href="#">Download PDF file</a>

## ➤ Interactive map and searchable database of publicly available cancer & NCD Plans

- 127 cancer plans (incl. US states' plans and other sub-national plans);
- 30 NCD Plans, integrating a cancer component;
- In English, French and Spanish;
- Searchable database helping to identify best practices and lessons learned in other countries;

## ➤ Case Studies

- Cancer planners sharing their experience on specific areas (Morocco, Turkey)



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# LMC IMPLEMENTATION RESEARCH

LOWER-MIDDLE INCOME COUNTRY



Early Detection and Patient Triage



# Breast cancer care model



Photos courtesy of Ben Anderson

Regional Cancer Institute  
(Trujillo)



La Fora Reference Hospital



Health Centers

- Mammography
- Pathology
- Surgery
- Chemotherapy
- Radiotherapy

- FNA

- Community education
- CBE



Slide used with permission from

# Two phases

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- **Phase 1:**
  - Pilot demonstration of the model of care.
- **Phase 2:**
  - National scale-up of the model.
  - Integration of post-treatment support for patients:
    - Clinical support at the local level for women who need follow-up care and monitoring.
    - Psychosocial support in the community.

# BREAST CANCER ASSESSMENT

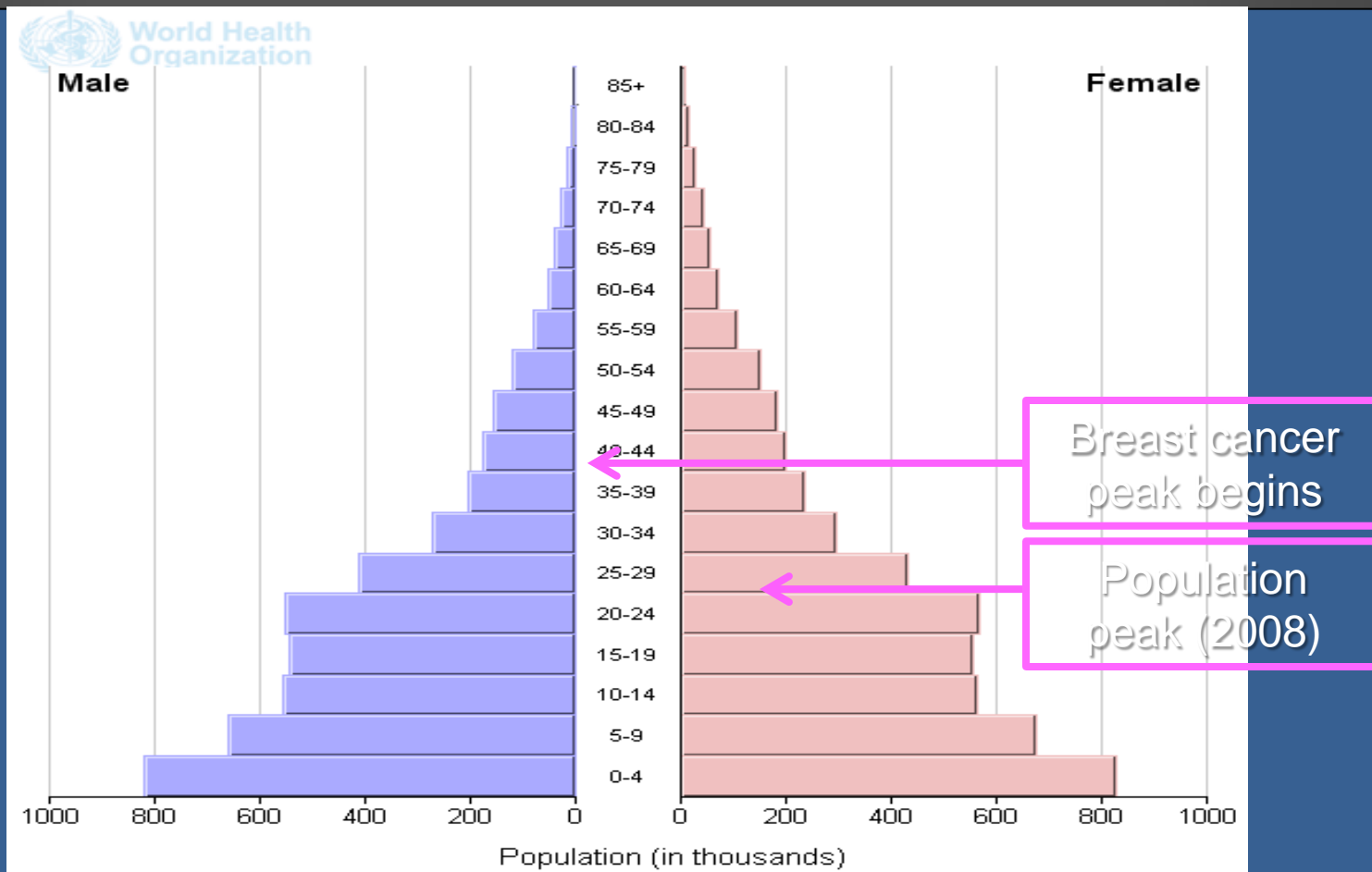
## LOW INCOME COUNTRY



## Early Detection Capacity Analysis

# BREAST CANCER ASSESSMENT

## RWANDA, EAST AFRICA



# BREAST CANCER ASSESSMENT

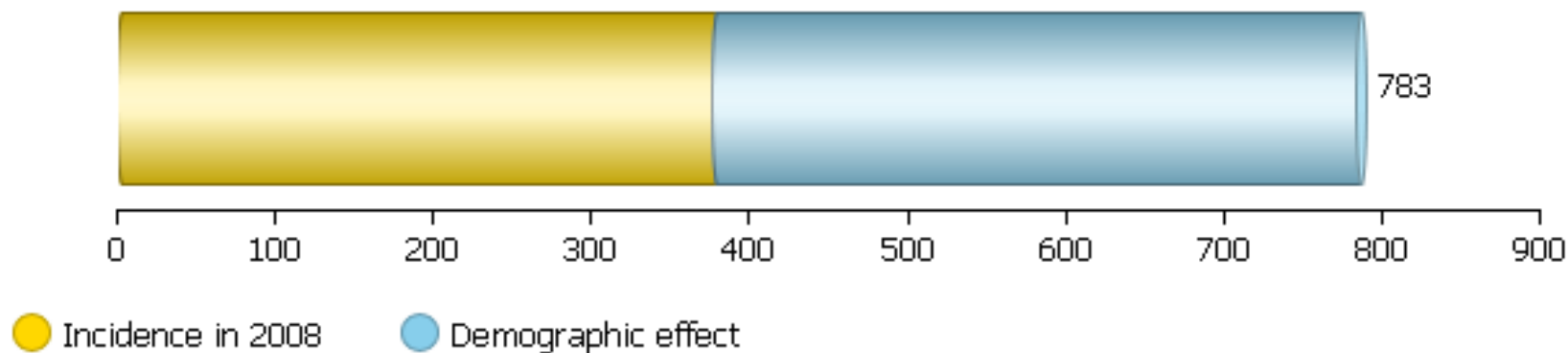
## RWANDA, EAST AFRICA

### Projected New Breast Cancer Cases in Rwanda

**2008: 376 cases**

**2015: 456 cases**

**2030: 783 cases**



GLOBOCAN 2008 (IARC) (22.5.2013)



# HEALTH FACILITY OVERVIEW

## RWANDA, EAST AFRICA

### Tertiary

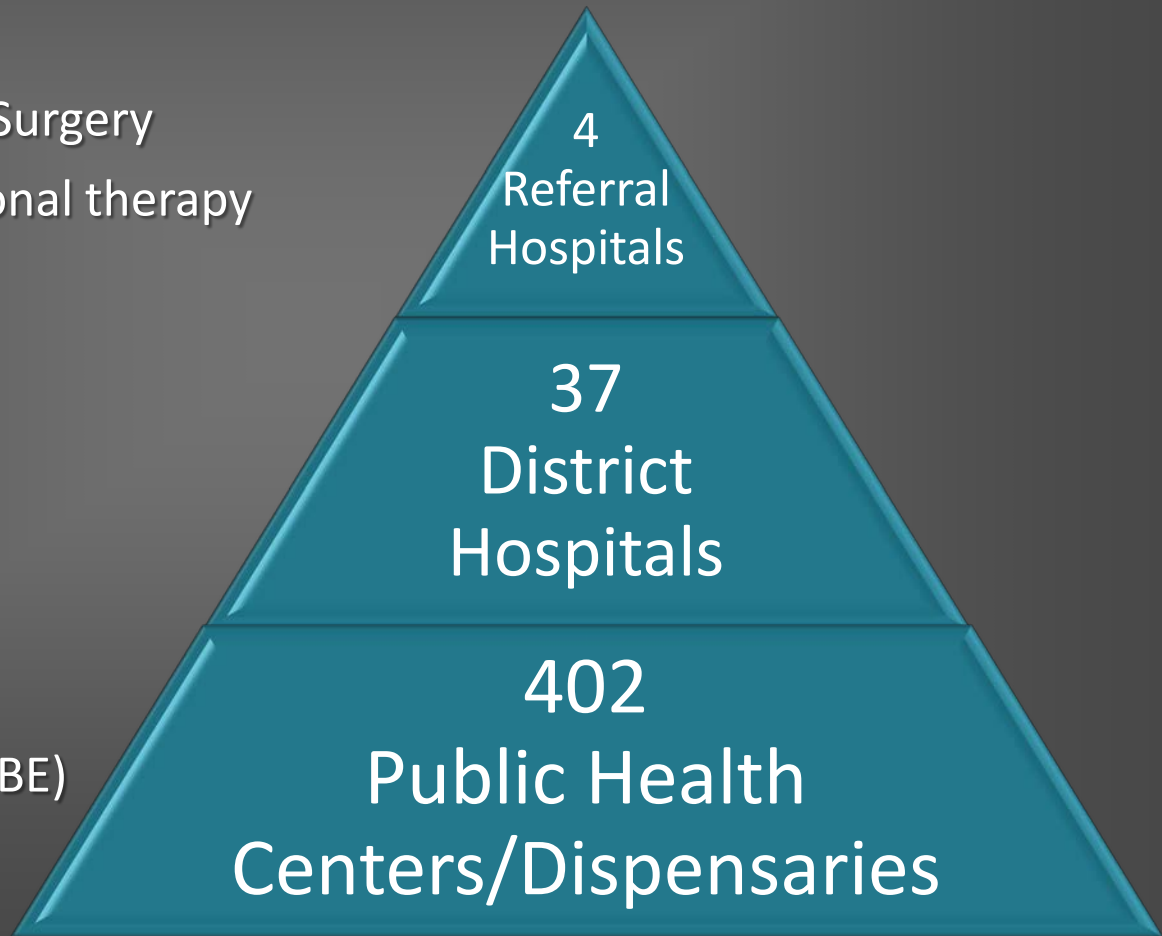
- Anatomic pathology / Surgery
- Chemotherapy /hormonal therapy
- Radiotherapy(?)

### Secondary

- Clinical Diagnosis
- Tissue Sampling

### Primary

- Clinical Breast Exam (CBE)
- Awareness Education



Source: MOH, 2009





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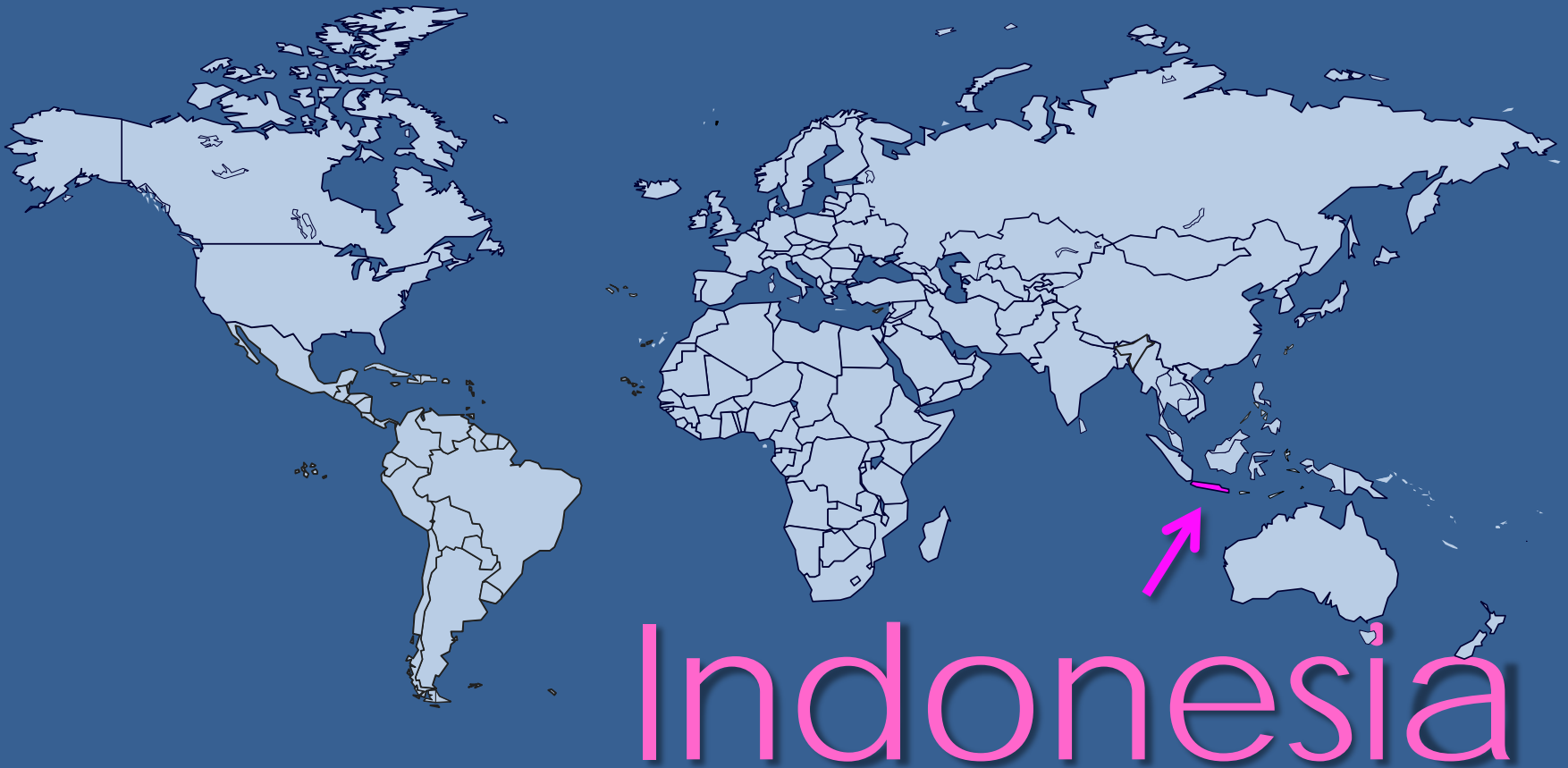
**Global status report**  
on noncommunicable diseases  
2010



- Biennial mammographic screening (50–70 years) with breast cancer treatment are among “**best buys**”
- Could avert 19% of cancer burden
- BUT breast cancer interventions impractical for poorer countries:
  - ❖ **implementation costs**
  - ❖ **limited feasibility of treatment** in primary care setting in LMCs

# LMC IMPLEMENTATION RESEARCH

LOWER-MIDDLE INCOME COUNTRY



CBE training for nurse midwives



## METHODS

- 47 nurse midwives and 15 volunteer health workers in 5 districts of Jakarta, Indonesia trained in breast health education, screening and clinical breast examination (CBE)
- Women invited to local health facilities to receive a CBE and independently administered mammogram
- Demographic questionnaire completed by all participants
- Women with suspicious findings on either mammography or CBE underwent diagnostic work-up and fine needle aspiration (FNA) for diagnosis



## RESULTS

- 1,179 women underwent both mammography and CBE
  - 289 women (24.5%) were found to have a suspicious finding on CBE, mammography or both
- 14 women (1.2%) were found to have a breast cancer
  - Of the 14 breast cancers, 13 (93%) appreciated on CBE
  - 167 (14.2%) CBE exams required additional work-up to diagnose 13 of the 14 cancers seen on mammography



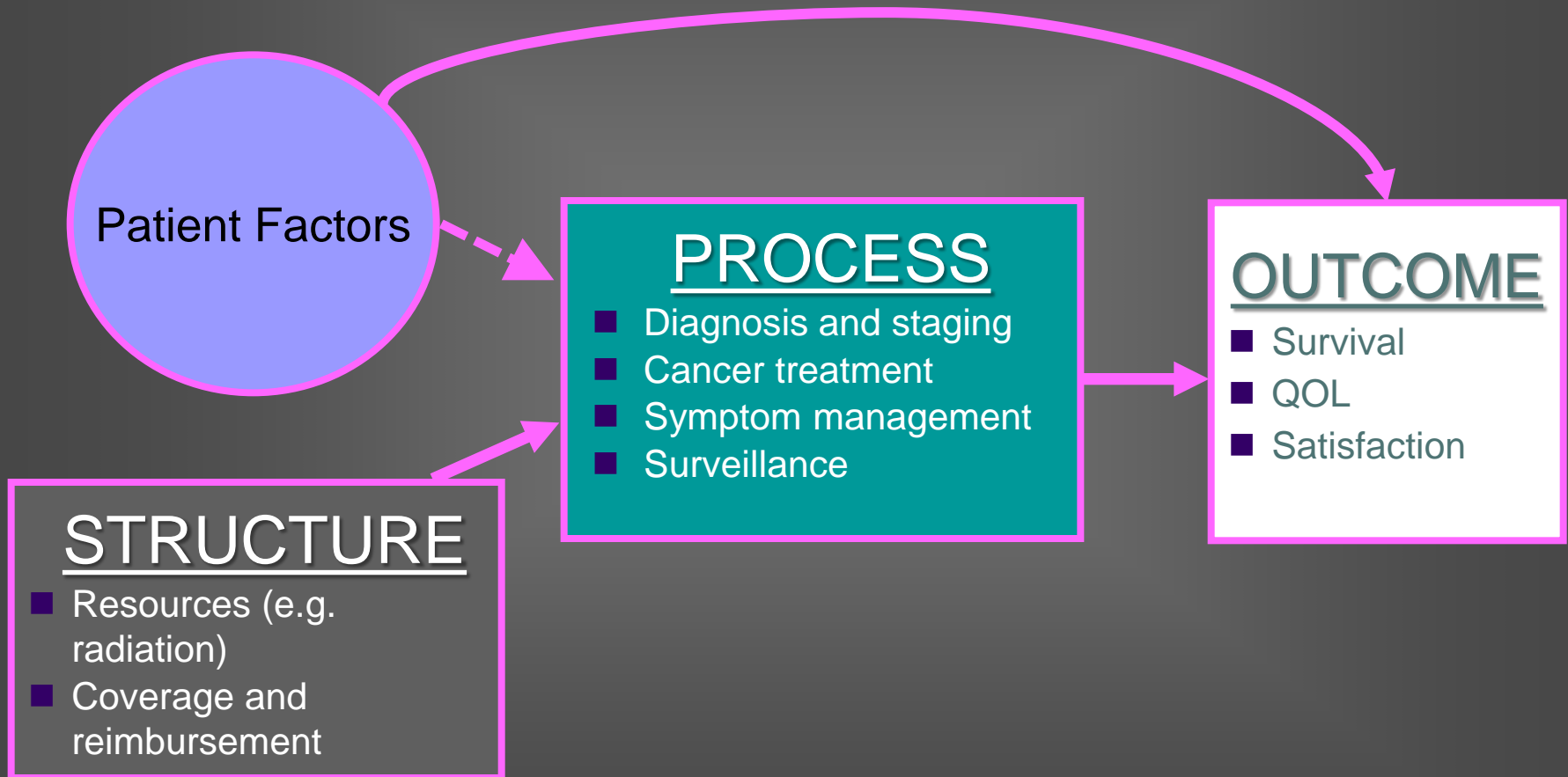
## RESULTS

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  - 289 women (24.5%) were found to have a suspicious finding on CBE, mammography or both
- 14 women (1.2%) were found to have a breast cancer
  - **8 of 14 patients (57%) failed to undergo treatment**
    - 2 of 14 breast cancer patients refused surgery
    - 6 of 14 breast cancer patients lost to follow-up





# METRICS & QUALITY IMPROVEMENT





# HEALTH SYSTEM COMPONENTS

## SUMMARY

- Cancer statistics and health metrics determine the cancer burden that needs to be addressed by the health system.
- Individualized cancer control planning provides a framework for organizing cancer management at the country level.
- Cancer treatment requires organized health networks to triage patients effectively from primary care to Centers of Excellence.
- Because cancer treatment protocols must be completed to be effective, the system must follow patients longitudinally over time.



*The* Breast Health Global Initiative

[www.bhgi.info](http://www.bhgi.info)



**BCI 2.5**

Making breast cancer a global priority

[www.BCI25.org](http://www.BCI25.org)