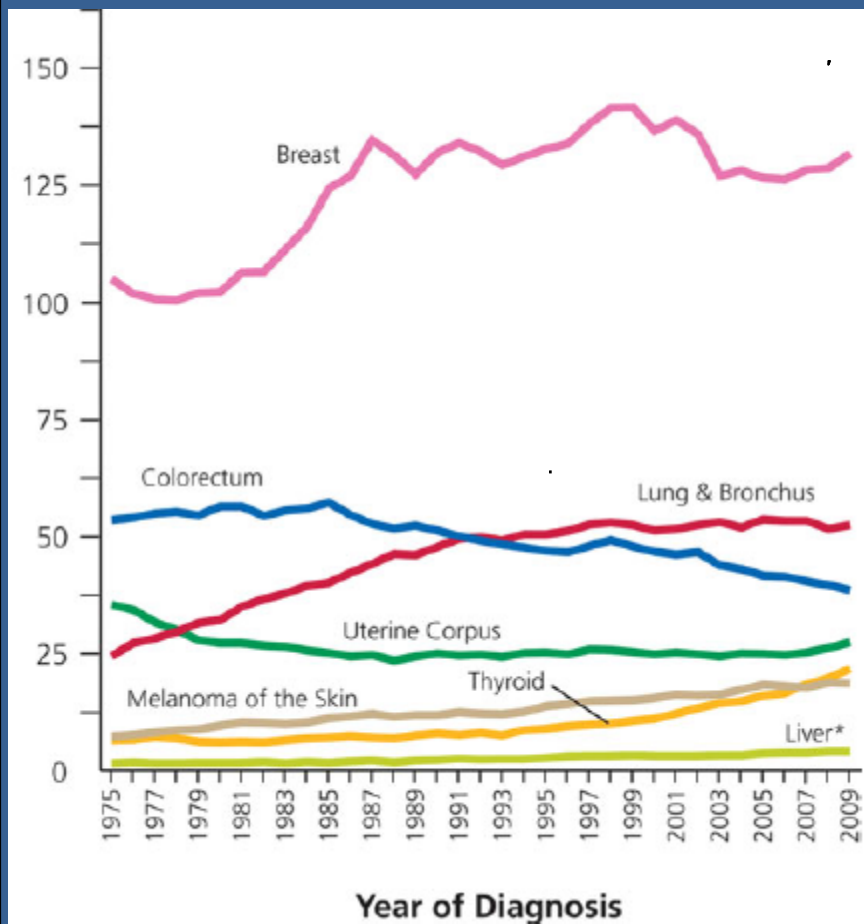


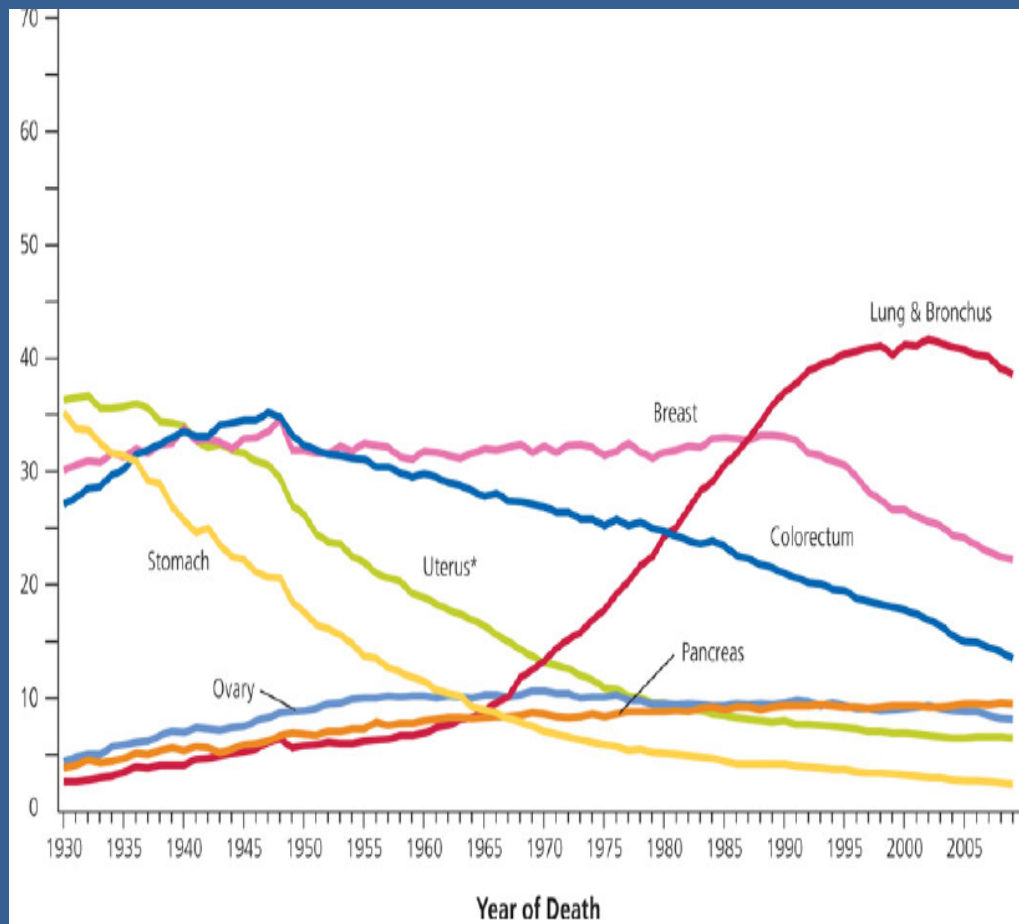
BREAST CANCER EPIDEMIOLOGY

FEMALE CANCER: UNITED STATES (2013)

Incidence



Mortality





GUIDELINES FOR BREAST CANCER CONTROL: ISSUES & OPTIONS FOR IMPLEMENTATION IN LOW AND MIDDLE INCOME COUNTRIES

Benjamin O. Anderson, M.D.

Chair and Director

Breast Health Global Initiative

Fred Hutchinson Cancer Research Center

Professor of Surgery & Global Health Medicine

University of Washington

Seattle, Washington



Founding Organizations

FRED HUTCHINSON
CANCER RESEARCH CENTER

A LIFE OF SCIENCE

susan G.
komen
FOR THE cure





BREAST CANCER ISSUES & OPTIONS

- Breast cancer as an NCD
- Resource-stratified framework
- Implementation projects



BREAST CANCER ISSUES & OPTIONS

- Breast cancer as an NCD
- Resource-stratified framework
- Implementation projects



GLOBAL BREAST CANCER BURDEN

INCIDENCE AND MORTALITY: 2015-2024

- Most common cancer among women
 - ❖ 17.5 million cases in next decade
 - ❖ 9.1 million cases in less developed countries
 - ❖ By 2024, over 1 million cases per year in LMCs
- Most common cancer killer among women
 - ❖ 5 million women will die in next decade
 - ❖ 3.6 million deaths in less developed countries
 - ❖ 650,000 deaths are premature and preventable

GLOBAL CANCER BURDEN:

FEMALE CANCER MORTALITY BY AGE

	Breast cancer (deaths in thousands [95% uncertainty intervals])		
	15-49 years	≥50 years	Total
Global	94.0 (87.1-102.3)	331.2 (269.9-352.8)	425.2 (358.6-453.4)
Developing	67.8 (61.6-74.2)	145.9 (125.8-160.2)	213.7 (188.6-231.2)
Developed	26.1 (24.1-29.4)	185.3 (143.2-200.4)	211.4 (169.3-228.5)

	Cervical cancer (deaths in thousands [95% uncertainty intervals])		
	15-49 years	≥50 years	Total
Global	55.9 (39.5-78.7)	144.1 (98.9-195.7)	200.1 (139.0-276.3)
Developing	46.2 (32.7-64.3)	109.2 (73.1-146.3)	155.4 (106.2-212.1)
Developed	9.7 (6.8-13.1)	35.0 (25.6-49.3)	44.7 (32.3-62.3)



**World Health
Organization**

EXECUTIVE BOARD

132nd session

Provisional agenda item 6.2

EB132/7

11 January 2013

Draft action plan for the prevention and control of noncommunicable diseases 2013–2020

Report by the Secretariat



NCD GLOBAL ACTION PLAN

CANCER-RELATED GOALS

- Reduction in modifiable risk factors (tobacco, physical activity, obesity, saturated fat, alcohol)
- Maintain disease registries, including for cancer, if sustainable, with appropriate indicators
- Promote breast feeding (exclusive for 6 months, continue until 2 years with complementary feeding)
- Early detection is stated as “essential”, but no specific targets for diagnosis or treatment are referenced.



BREAST CANCER ISSUES & OPTIONS

- Breast cancer as an NCD
- Resource-stratified framework
- Implementation projects



BREAST CANCER ISSUES & OPTIONS

- Breast cancer as an NCD
- Resource-stratified framework
- Implementation projects



U.N. HUMAN RIGHTS LAW (1966)

INTERNATIONAL COVENANT ON ECONOMIC, SOCIAL AND CULTURAL RIGHTS (ICESCR), ARTICLE 12(1)

“The States Parties to the present Covenant recognize the right of everyone to the enjoyment of the highest attainable standard of physical and mental health.”

WORLD BANK COUNTRY GROUPS

WORLD BANK CLASSIFICATION (ATLAS METHOD)

World Bank Country Groups <i>(GNI per capita)</i>	Low Income <i>(\$995 or less)</i>	Lower Middle Income <i>(\$996 - \$3,945)</i>	Upper Middle Income <i>(\$3,946 - \$12,195)</i>	High Income <i>(\$12,196 or more)</i>
Average female life expectancy at birth	57.8 yrs	69.3 yrs	74.4 yrs	82.4 yrs
Average GNI per capita (2009 US dollars)	\$403	\$1,723	\$6,314	\$36,953
Total national health expenditure per capita	\$22	\$76	\$458	\$4,266
Fraction of GDP spent on health care	5.1%	4.3%	6.4%	11.2%

Health expenditure figures 2010 for calendar year 2007; GNI = gross national income
<http://data.worldbank.org/data-catalog/health-nutrition-and-population-statistics>.

BREAST CANCER EPIDEMIOLOGY

STAGE AT DIAGNOSIS: UNITED STATES VS. INDIA

STAGE	EXTENT	5 year SURVIVAL	DISTRIBUTION	
			USA	INDIA
0	Noninvasive	100%	16%	----
I	Early stage disease	100%	40%	1%
II	Early stage disease	86%	34%	23%
III	Locally advanced	57%	6%	52%
IV	Metastatic disease	20%	4%	24%

USA:
90% DCIS or early staged invasive disease at diagnosis

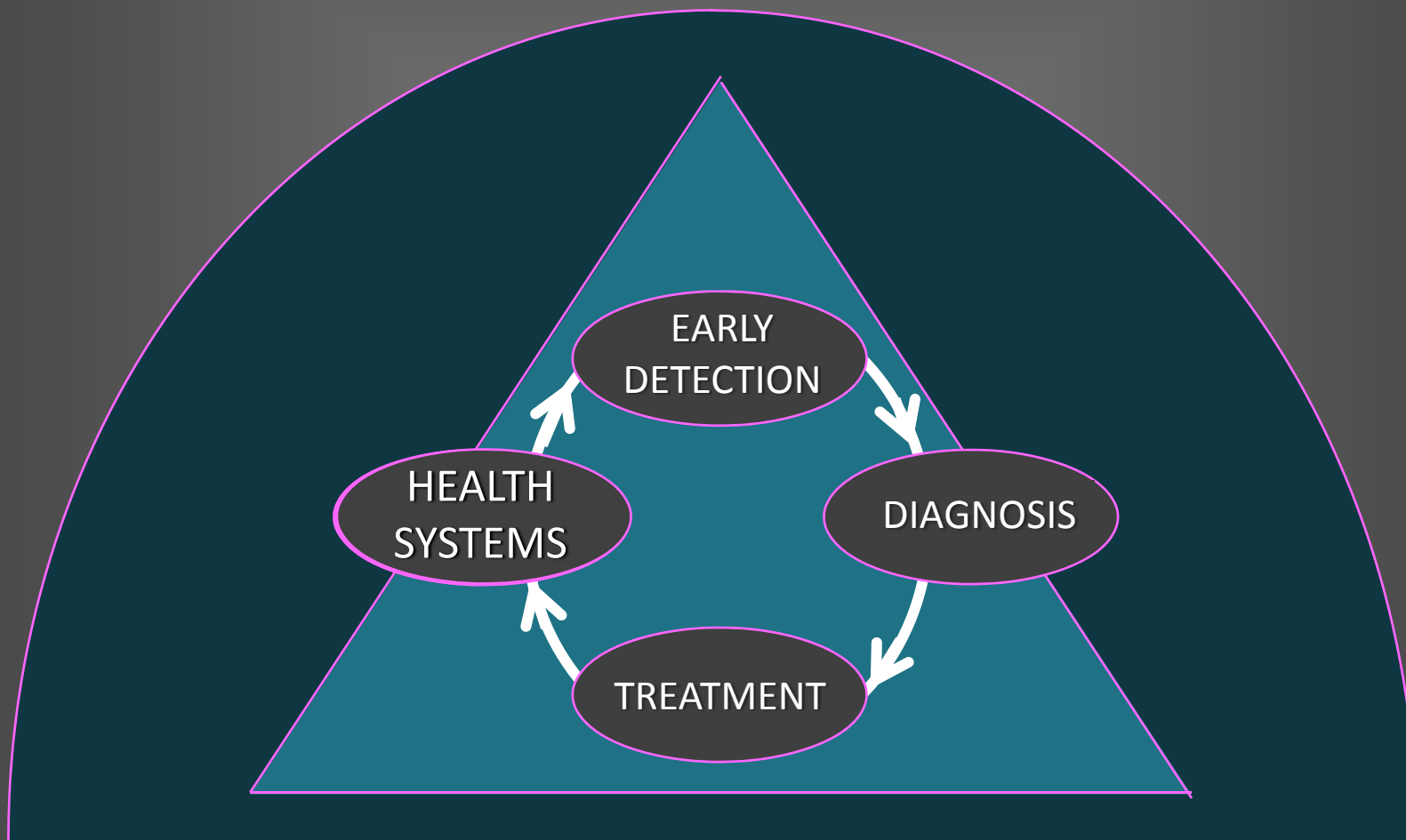
INDIA:
76% locally advanced or metastatic at diagnosis

Sources: SEER Survival Monograph (NCI), 2007;
Chopra, Cancer Institute Chennai, 2001



GLOBAL SUMMIT 2005 – BETHESDA

RESOURCE STRATIFICATION





BHGI GUIDELINE DEVELOPMENT

- Comprehensive guidelines by selected expert panels
- Consensus opinions based on evidence review
- Publication of a) consensus and b) individual manuscripts

GUIDELINE DEVELOPMENT SUMMITS:

Global Summit 2002: Health Care Disparities

Global Summit 2005: Resource Stratification

GUIDELINE VALIDATION SUMMITS:

Global Summit 2007: Guideline Implementation

Global Summit 2010: Healthcare Delivery



GLOBAL SUMMIT 2005 – BETHESDA

RESOURCE STRATIFICATION

- **Basic level:** Core resources or fundamental services necessary for any breast health care system to function.
- **Limited level:** Second-tier resources or services that produce major improvements in outcome such as survival.
- **Enhanced level:** Third-tier resources or services that are optional but important, because they increase the number and quality of therapeutic options and patient choice.
- **Maximal level:** Highest-level resources or services used in some high resource countries that have *lower priority* on the basis of extreme cost and/or impracticality.



BHGI GUIDELINE TABLES

HEALTH CARE SYSTEMS

Level of resources	Patient and Family Education	Human Resource Capacity Building	Patient Navigation	Cancer Care Facility	Breast Care Center
Basic	General education regarding primary prevention of cancer, early detection and self examination Development of culturally adapted patient and family education services	Primary care provider education re breast cancer detection, diagnosis and treatment Nursing education re cancer patient management and emotional support Pathology technician education re tissue handling and specimen preparation Trained community worker	Field nurse, midwife or healthcare provider triages patients to central facility for diagnosis and treatment	Health facility Operating facility Outpatient care facility Pharmacy Home hospice support External consultation Pathology laboratory	Breast healthcare access integrated into existing healthcare infrastructure
Limited	Group or one-on-one counseling involving family and peer support Education regarding nutrition and complementary therapies	Nursing education re breast cancer diagnosis, treatment and pt management Imaging technician education re imaging technique and quality control Volunteer recruitment corp to support care	On site patient navigator (staff member or nurse) facilitates patient triage through diagnosis and treatment	Clinical information systems Health system network Imaging facility Internal pathology laboratory Radiation therapy	"Breast Center" with clinician, staff and breast imaging access Breast prostheses for mastectomy pts
Enhanced	Education regarding survivorship Lymphedema education Education regarding home care	Organization of national volunteer network Specialized nursing oncology training Home care nursing Physiotherapist & lymphedema therapist On-site cytopathologist	Patient navigation team from each discipline supports patient "handoff" during key transitions from specialist to specialist to ensure completion of therapy	Centralized referral cancer center(s) Radiation therapy: low energy linear accelerator, electrons, brachytherapy, treatment planning system	Multidisciplinary breast programs Oncology nurse specialists Physician assistants
Maximal		Organization of national medical breast health groups		Satellite (non-centralized or regional) cancer centers	

EARLY DETECTION

Level of resources	Public Education and Awareness	Detection Methods
Basic	Development of culturally sensitive, linguistically appropriate local education programs for target populations to teach value of early detection, breast cancer risk factors and breast health awareness (education + self-examination)	Clinical history and CBE
Limited	Culturally and linguistically appropriate targeted outreach/education encouraging CBE for age groups at higher risk administered at district/provincial level using healthcare providers in the field	Diagnostic breast US +/- diagnostic mammography in women with positive CBE Mammographic screening of target group*
Enhanced	Regional awareness programs regarding breast health linked to general health and women's health programs	Mammographic screening every 2 years in women ages 50-59* Consider mammographic screening every 12-18 months in women ages 40-49*
Maximal	National awareness campaigns regarding breast health using media	Consider annual mammographic screening in women ages 40 and older Other imaging technologies as appropriate for high-risk groups†

DIAGNOSIS

Level of resources	Clinical	Imaging and Lab Tests	Pathology
Basic	History Physical examination Clinical breast exam (CBE) (BPE) Tissue sampling for cancer diagnosis (cytologic or histologic) and indication of treatment		"Biopsy diagnosis obtained for every breast cancer case via accessible sampling procedures Pathology report including complete description and progress of specimen information to "next level" (not final data, histologic type and tumor grade) Process to avoid delay in response by the state society including timely assessment of response to therapy Determination and reporting of TNM stage
Limited	US guided FNAB of palpable/suspicious axillary nodes Sentinel lymph node (SLN) biopsy with blue dye‡	Diagnostic breast ultrasound (US) Fine needle aspirate cytology (FNAC) if available Biopsy (core biopsy, FNAB) Complete blood count (CBC)†	Determination of ER status by IHC Determination of margin status, DCIS, concurrent presence of UT Protein section or touch prep (Cyt. analysis)†
Enhanced	Image guided breast sampling Phylogenetic analysis of tumor tissue using endo-US guidance SLN biopsy with radioisotope	Diagnostic mammography Ultrasound Sentinel lymph node biopsy Core biopsy, FNAB Complete blood count (CBC)†	Measurement of HER2/neu status using immunohistochemistry (IHC) or fluorescence in situ hybridization (FISH) to determine if HER2/neu is amplified
Maximal		IHC stain (IHC) on breast tissue, HER2/neu testing Mammographic dense breast imaging	IHC staining of sentinel nodes for cytokeratin to detect micrometastases Pathology double immunohistochemistry tests

STAGE I

Level of resources	Local/Regional Treatment		Systemic Treatment (Adjuvant)		
	Surgery	Radiation Therapy	Chemotherapy	Endocrine Therapy	Biological Therapy
Basic	Modified radical mastectomy			Endocrine therapy in premenopausal women Tamoxifen [†]	
Limited	Breast conserving surgery Sentinel lymph node (SLN) biopsy with blue dye [‡]		Classical CMF± AC, EC, or FAC [‡]		I
Enhanced	Breast conserving surgery Breast reconstruction surgery	Breast-conserving whole breast irradiation as part of breast-conserving therapy	Endocrine	Aromatase inhibitors LHRH agonists	Trastuzumab for treating HER2/neu positive disease [†]
Maximal			Growth factors Trastuzumab for HER2/neu positive disease [†]		

STAGE II

Level of resources	Local/Regional Treatment		Systemic Treatment (Adjuvant)		
	Surgery	Radiation Therapy	Chemotherapy	Hormonal Therapy	Biologic Therapy
Basic	Modified radical mastectomy	x	Classical CMF AC, EC, or FAC†	Endocrine therapy in premenopausal women Tamoxifen†	
Limited	Breast conserving surgery Sentinel lymph node (SLN) biopsy with blue dye‡	Post-mastectomy radiation of chest wall and regional nodes for high-risk cases†			†
Enhanced	SLN biopsy using radioisotope Breast reconstruction surgery	Post-mastectomy whole-breast irradiation as part of breast-conserving therapy†	Endocrine therapy LHRH agonists	Aromatase inhibitors LHRH agonists	Trastuzumab for treating HER2/neu positive disease†
Maximal			Anti-HER2/neu Less dense chemotherapy		

LOCALLY ADVANCED

Level of resources	Local/Regional Treatment		Systemic Treatment (Adjuvant or Neoadjuvant)		
	Surgery	Radiation Therapy	Chemotherapy	Endocrine Therapy	Biological Therapy
Basic	Modified radical mastectomy	-	Preoperative chemotherapy with AC, EC, FAC, or CMF†	Oral endocrine in premenopausal women† Tamoxifen‡	
Limited		Postmastectomy radiation of chest wall and regional nodes†			§
Enhanced	Breast-conserving surgery Breast reconstruction surgery	Breast-conserving surgery with breast irradiation as part of breast-conserving therapy	Tamoxifen	Aromatase inhibitors LHRH agonists	Trastuzumab for treating HER2/neu-positive disease†
Maximal			Growth factors Dense chemotherapy		

METASTATIC

Level of resources	Local/Regional treatment		Systemic treatment (Palliative)		
	surgery	radiation therapy	chemotherapy	endocrine therapy	supportive therapy
Basic	Total mastectomy or ipsilateral breast lumpectomy with reconstruction or breast conserving surgery†			Ovarianectomy in premenopausal women tamoxifen†	Hormone side effects management and symptom management
Limited		Palliative radiation therapy	Classical CMF Anthracycline methotrexate or in combination		
Enhanced			Endocrine therapy agent or combination chemotherapy Trastuzumab Lapatinib	Aromatase inhibitors	Biophosphonates
Maximal			Port-cath removal	Port-cath used	Chemical sedation



BHGI SYSTEMS METRICS (2008)

MEDIAN TUMOR SIZE (MTS)

- “T” is most fundamental element in TNM staging and is measured on clinical breast exam (CBE)
- MTS is surrogate measure of early detection success in healthcare delivery system
- MTS suggests early detection strategy:
 - > 4 – 5cm: Awareness + CBE (no mammography)
 - < 2cm: Image screening needed for down-staging



BREAST CANCER ISSUES & OPTIONS

- Breast cancer as an NCD
- Resource-stratified framework
- Implementation projects



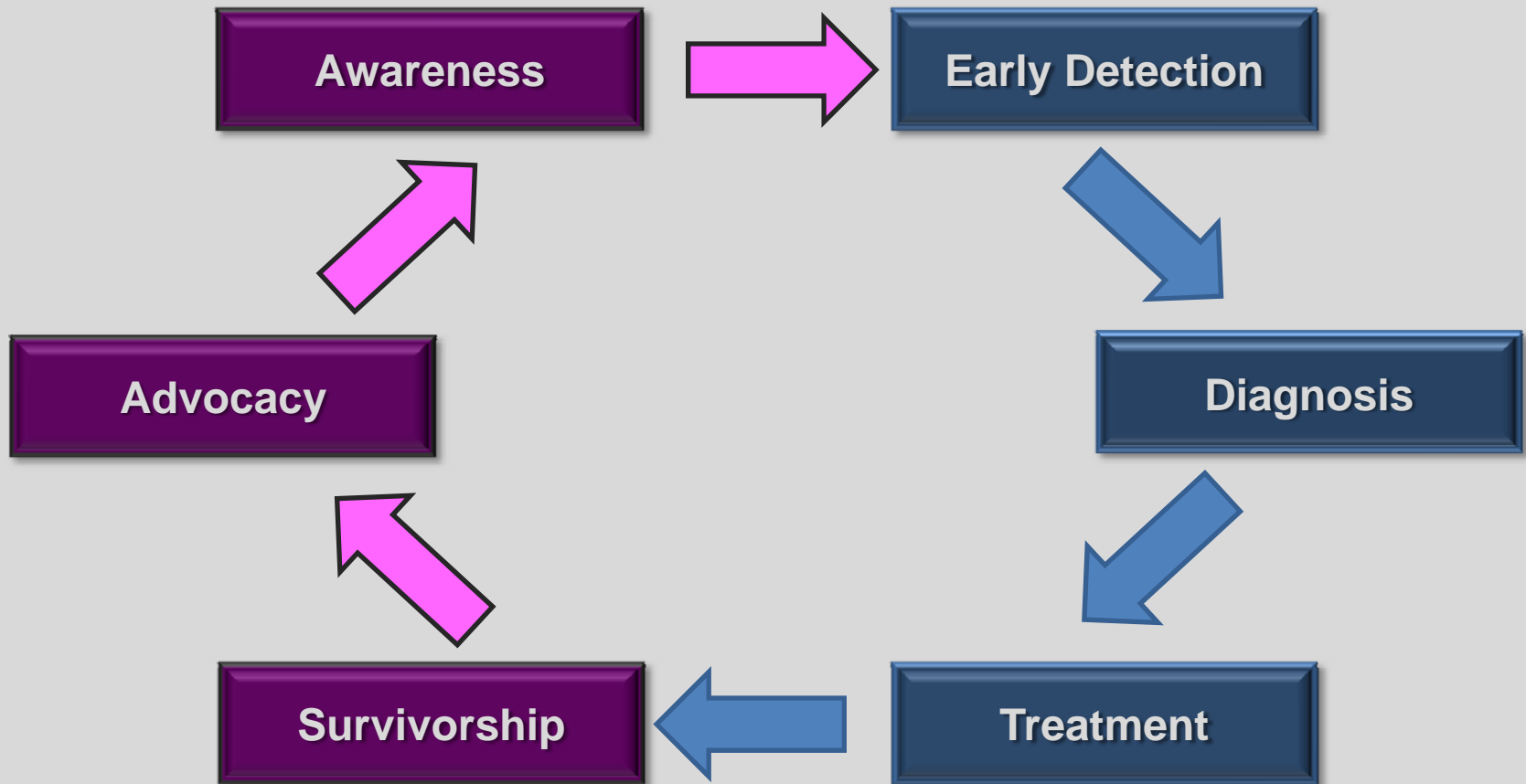
BREAST CANCER ISSUES & OPTIONS

- Breast cancer as an NCD
- Resource-stratified framework
- Implementation projects



Public Participation

Health Care Delivery





BASIC LEVEL CARE (BHGI) EARLY DETECTION / DIAGNOSIS

- Clinical down-staging (education):
 - Breast health awareness education
 - Clinical breast examination (CBE) training
- Diagnosis (with quality control):
 - Tissue sampling (needle preferred)
 - Surgical pathology services (+/- cytology)
 - Hormone receptor assessment

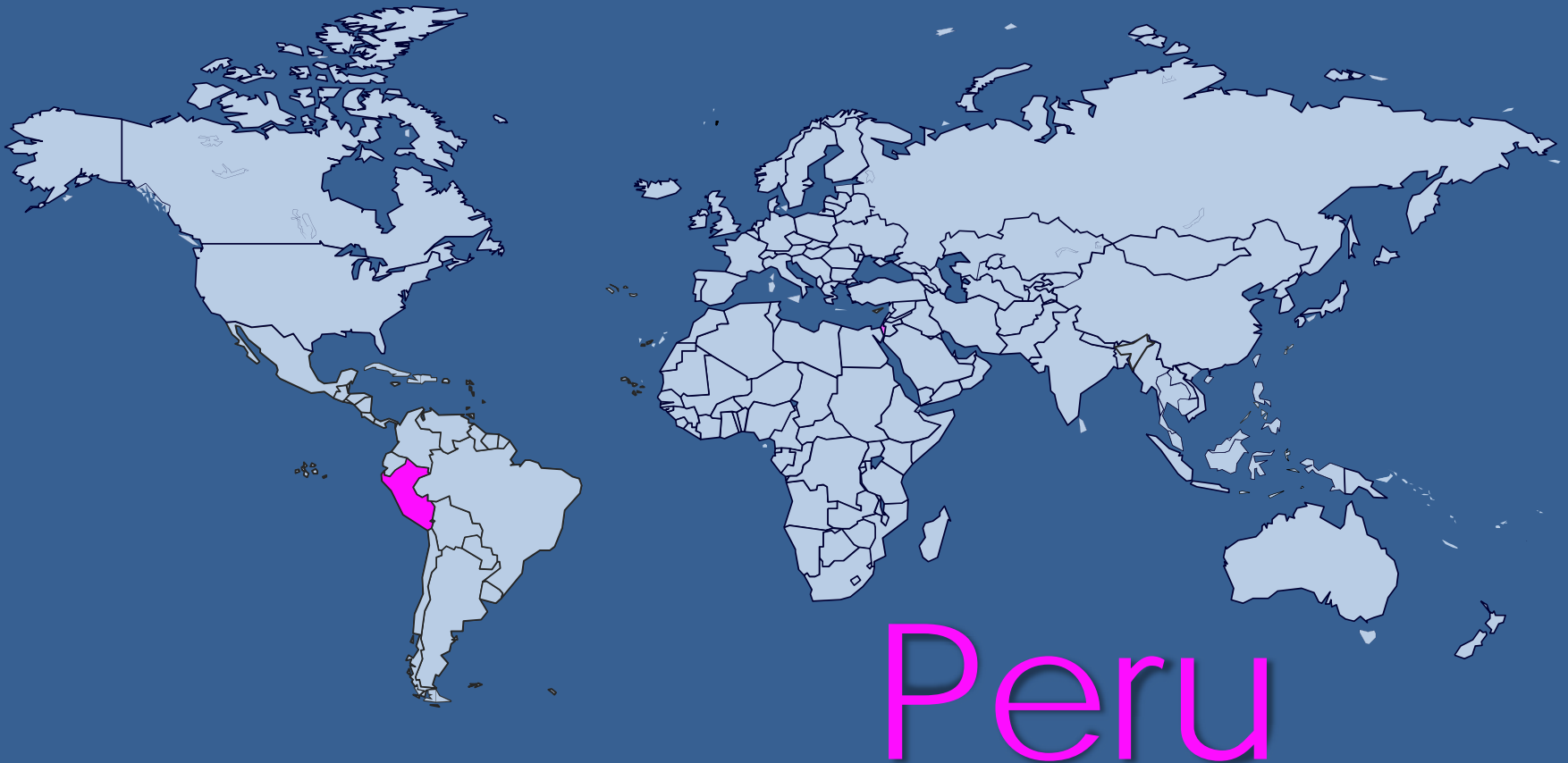


BASIC LEVEL CARE (BHGI) TREATMENT (ALL STAGES)

- Surgical services:
 - Modified radical mastectomy
 - Breast conservation (radiation required)
- Systemic therapy (on WHO essential drug list 2011):
 - Tamoxifen (vs oophorectomy)
 - Cytotoxic therapy (CMF, AC, EC, FAC)
 - Pain management

LMC IMPLEMENTATION RESEARCH

LOWER-MIDDLE INCOME COUNTRY



Early Detection and Patient Triage

Pilot project

- One health network within the region of La Libertad in Peru.
- Based on the use of CBE performed by midwives, followed by referral of women with suspected masses to the local hospital for evaluation by trained physicians.



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



Peru Site Visit 2012

Public education about breast cancer and breast health

1



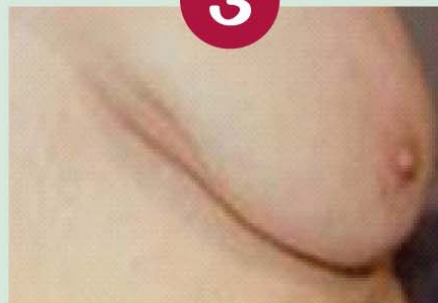
Hinchazón, calor,
oscurecimiento o
enrojecimiento de la
mama.

2



Cambio en el tamaño y/o
forma de la mama.

3



Hoyuelos o arrugas en la
piel.

4



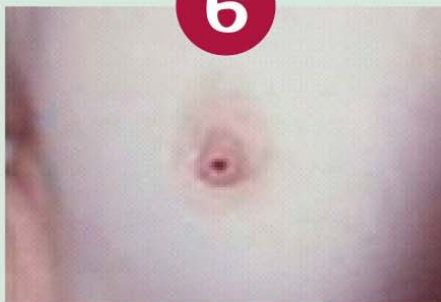
Picazón, úlceras o llaga
escamosa en la piel o
sarpullido en el pezón.

5



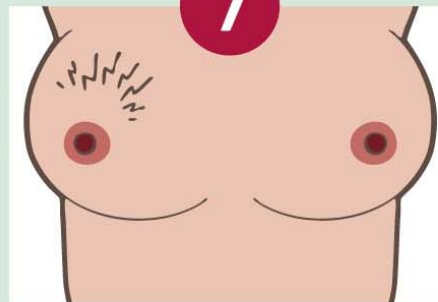
Hundimiento del pezón o
de otras partes de la
mama.

6



Secreción repentina del
pezón.

7



Dolor reciente y
persistente en alguna
parte de la mama.

8



Aparición de alguna masa,
bolita dura, o la piel más
gruesa dentro de la mama.



**Exposición del Dr. Cedano y
Dr. Manrique**



PLAN DE SUPERVISIÓN HOSPITAL REGIONAL DE LORETO

JUSTIFICACIÓN

OBJETIVOS

METODOLOGÍA

RESULTADOS

INFORME

- Capacitación de proveedores clínicos (obstetrices y médicos) en ECM.

- El 1 y 2 de julio de 2011, un grupo de médicos y enfermeras de INEN, IREN Norte y PATH, asistió a un curso conjunto en ECM y BAAF celebrado en IREN-Norte. Donde ocho obstetrices de la Red de Salud de Pacasmayo y tres médicos del Hospital La Fora recibieron la formación en teoría científica, aplicación práctica y orientación de pacientes con respecto al ECM.



PROGRAMA DE PREVENCIÓN Y CONTROL DE CÁNCER DE MAMA
HISTORIA CLÍNICA DE SALUD MAMARIA

DATOS GENERALES

Nombre del establecimiento _____ N° Historia Clínica _____

Primer Apellido Segundo Apellido Nombres DNI _____

Dirección Distrito Teléfono _____

_____/_____/_____
Fecha de nacimiento Edad (años) Establecimiento que refiere Fecha de consulta

¿Has escuchado acerca de salud mamaria de un promotor(a) de salud?

No ☐ Si, en una sesión educativa en el establecimiento de salud ☐ Si, en una sesión educativa en mi comunidad ☐ Si, a través del contacto individual con el promotor ☐

ANAMNESIS

Motivo de consulta: Por tamizaje ☐ Por síntomas mamarios ☐ Por referencia ☐

Síntomas _____

D / M / A Duración _____

Relación con ciclo menstrual: Si ☐ NO ☐ Peso: _____ Kg. Talla: _____ mt.

ANTECEDENTES MAMARIOS:

Exámenes previos: Biopsia ☐ Mamografía ☐ Ecografía ☐ Fecha: ____/____/____ Resultado: _____

Mastitis ☐ Otros: _____

Edad menarquia: _____ A Edad menopausia: _____ A G ☐ P ☐ ☐ ☐

Uso de anticonceptivos: Si ☐ NO ☐ Tipo: Oral ☐ Inyectable ☐ Duración: _____ M / A

Terapia de reemplaza hormonal: Si ☐ NO ☐ Edad primer embarazo: ____ Años Lactancia Materna: Si ☐ NO ☐

Antecedentes personales y familiares:

Historia personal de: Cáncer de mama: Si ☐ NO ☐ Cáncer de ovario: Si ☐ NO ☐ Otro cáncer: _____

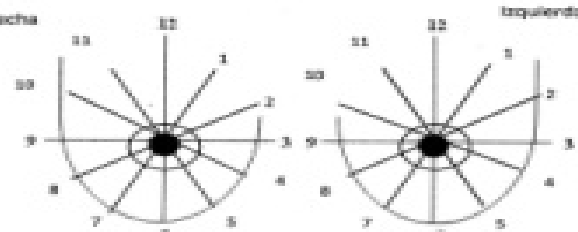
Historia de familiar directo de: Cáncer de mama: Si ☐ NO ☐ Cáncer de ovario: Si ☐ NO ☐ Otro cáncer: _____

Hábitos: Tabaco: Si ☐ NO ☐ Alcohol: Si ☐ NO ☐

EXAMEN CLÍNICO DE MAMA:

CARACTERÍSTICAS DEL TUMOR		Mama Derecha	Mama Izquierda
Tumor palpable	Tamaño Tumor 1	cm	cm
	Tamaño Tumor 2	cm	cm
Consistencia del tumor (blando, duro, pétreo, fluctuante)			
Forma del tumor (redondo, oval, diamétrico)			
Bordes del tumor (regular, irregular)			
Ganglio (axilar, inguinal)			
Secreción por pezón (color)			
Retracción (pezón, piel)			
Eczema (pezón, areola)			
Ulceración (pezón, piel)			
Enteema o edema (pezón, piel)			
"Piel de naranja"			

Derecha Izquierda



Distancia del pezón _____ cm. Distancia del pezón _____ cm.



Two phases

- **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 EPIDEMIOLOGY

UPPER-MIDDLE INCOME COUNTRY



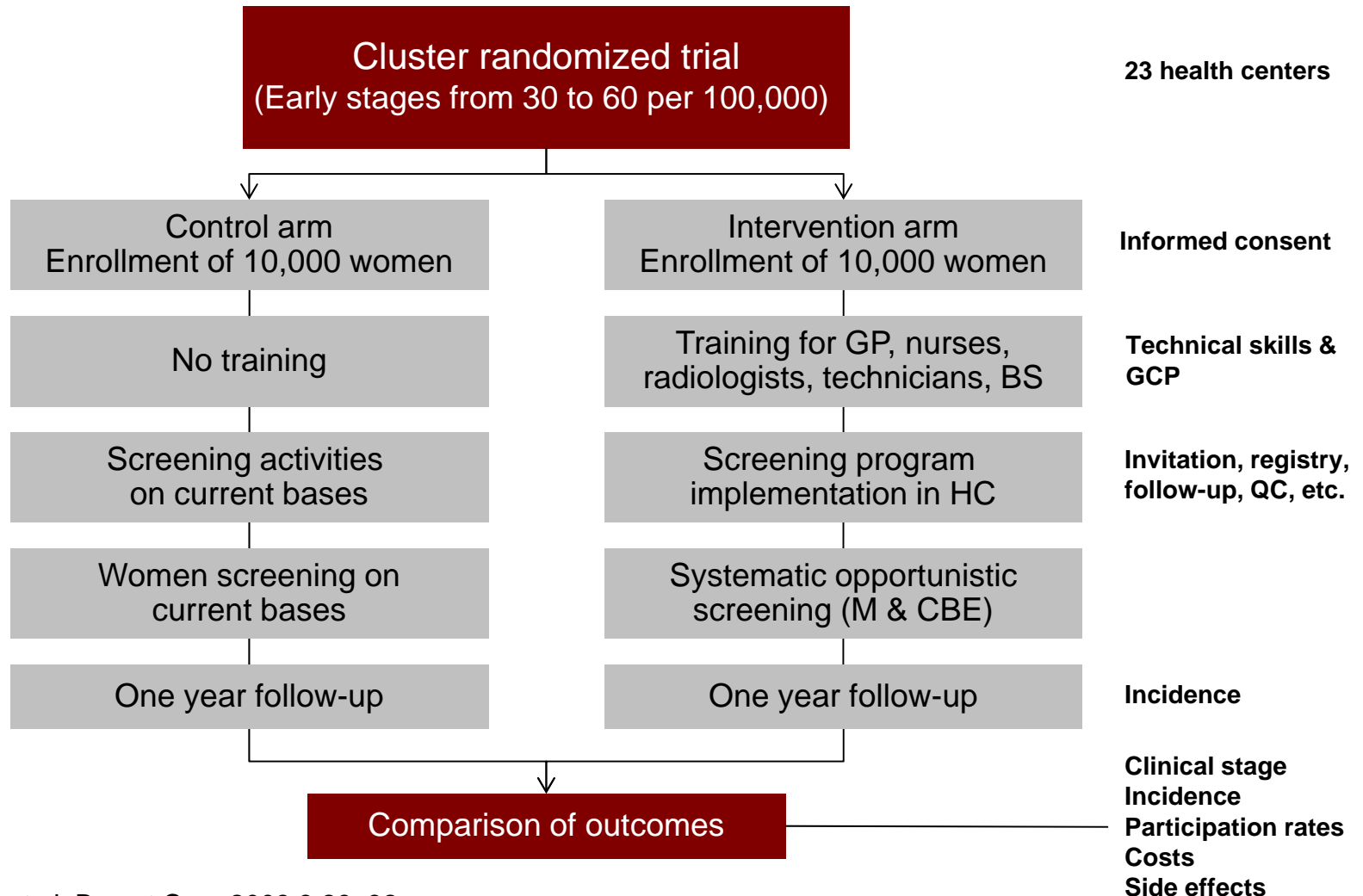
Colombia

National Early Detection Program

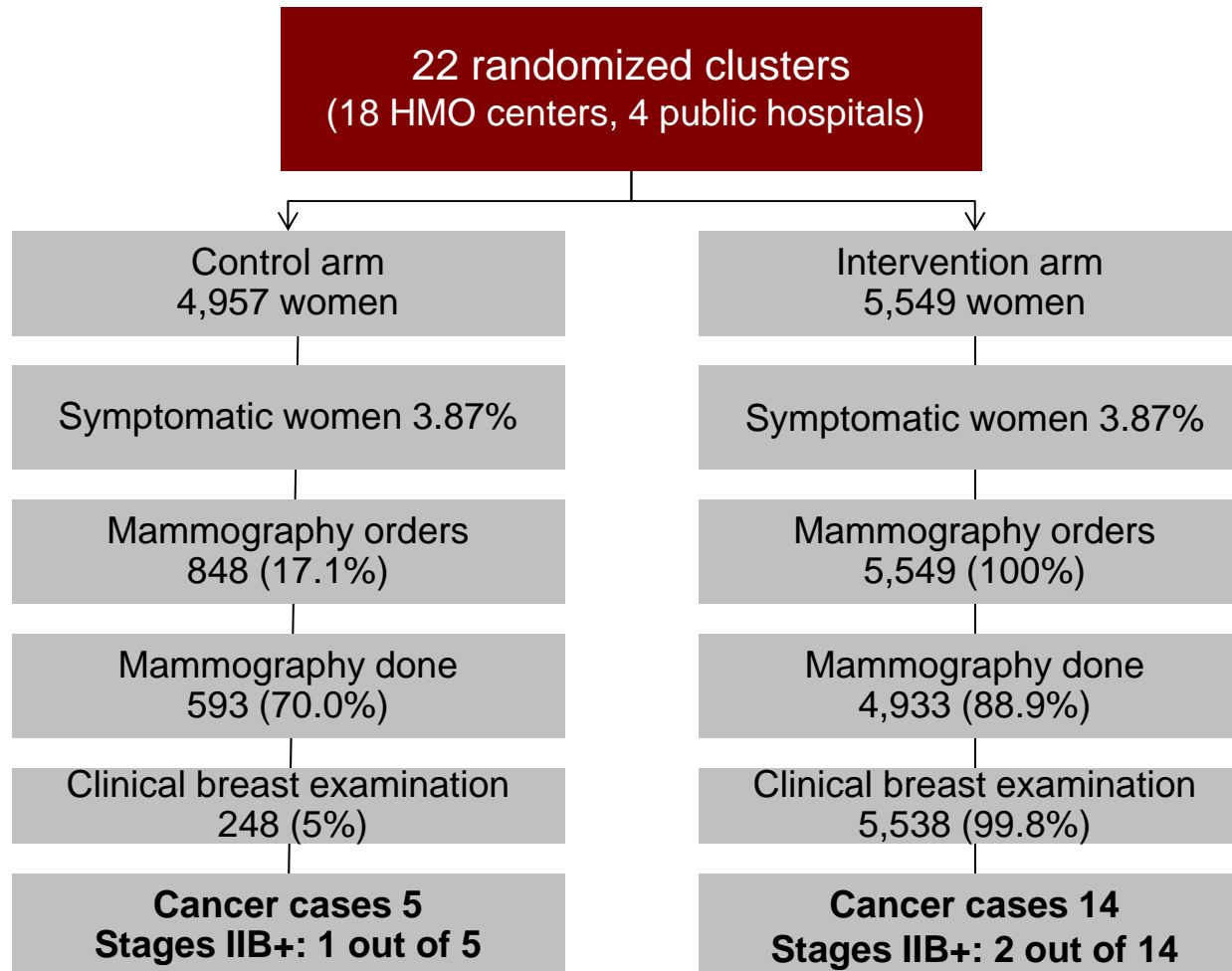
Pilot project for the introduction of breast cancer early detection programs in Colombia

Raul Murillo, MD, MPH
National Cancer Institute
Bogota - Colombia

Study design for early detection of breast cancer in women 50 to 69



Preliminary results



Final Cancer Diagnosis by Stage

Stage at diagnosis	Intervention		Control		Total
	First year	Second year	First year	Second year	
In situ	3	1			4
I	9	1	1	2	13
IIA	3		5	1	9
IIB	3		5	2	10
IIIA	1				1
IIIB	2		2		4
Total	21	2	13	5	41



BREAST CANCER GUIDELINES

SUMMARY

- Breast cancer is the most common female malignancy in the world, the largest cancer killer among women, and disproportionately affects young women in LMCs.
- The NCD Global Action Plan currently lacks specific recommendations for diagnosis, treatment and metrics that will change breast cancer mortality in LMCs.
- PAHO can recommend an “essential package” for breast cancer care in LMCs based on resource-stratified guidelines to permit Member States to assess if and how they can best address breast cancer in their country.



The Breast Health Global Initiative

www.bhgi.info