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Breast cancer in Asia

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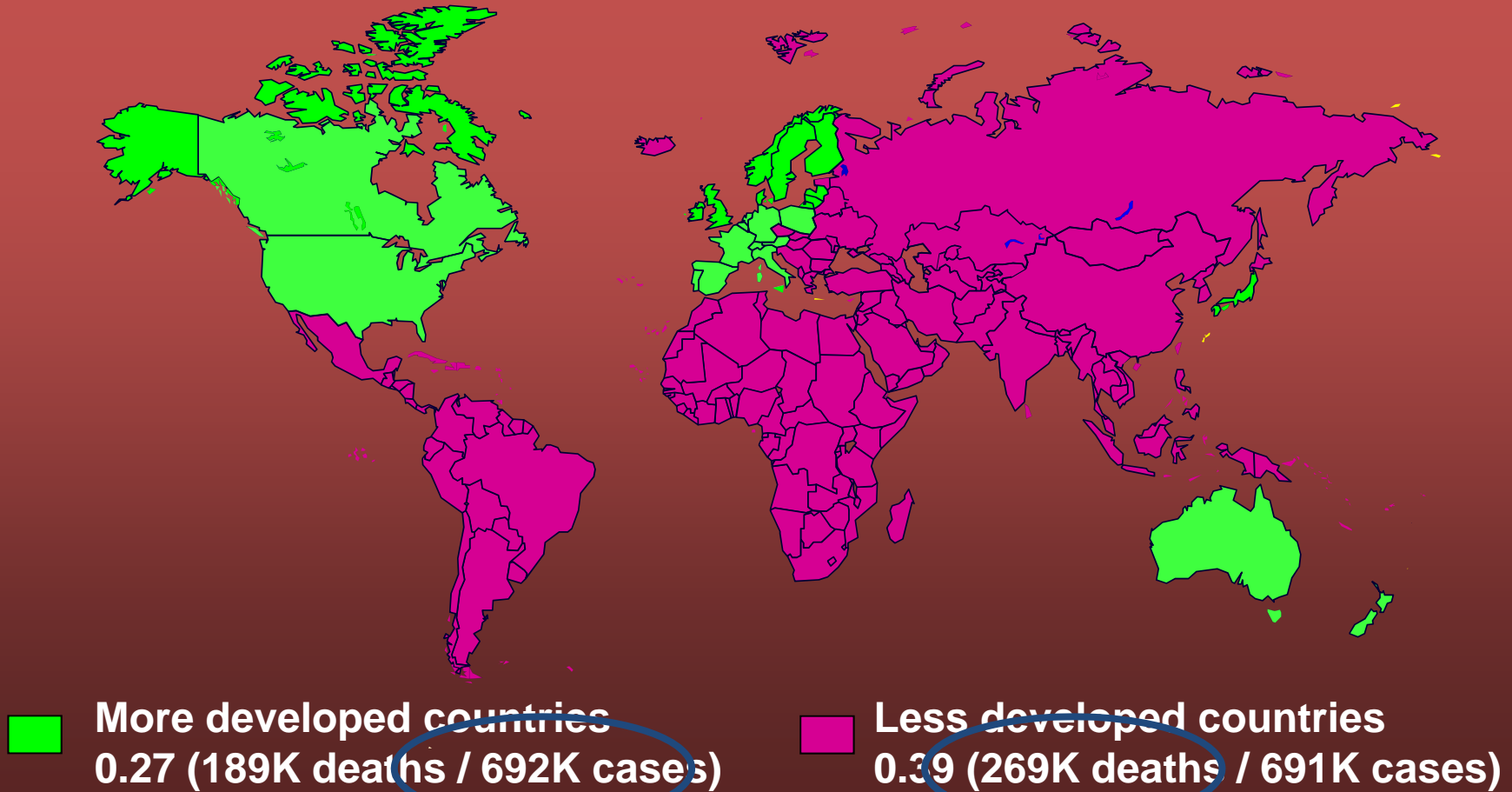
University Malaya Medical Centre

Kuala Lumpur

INCIDENCE

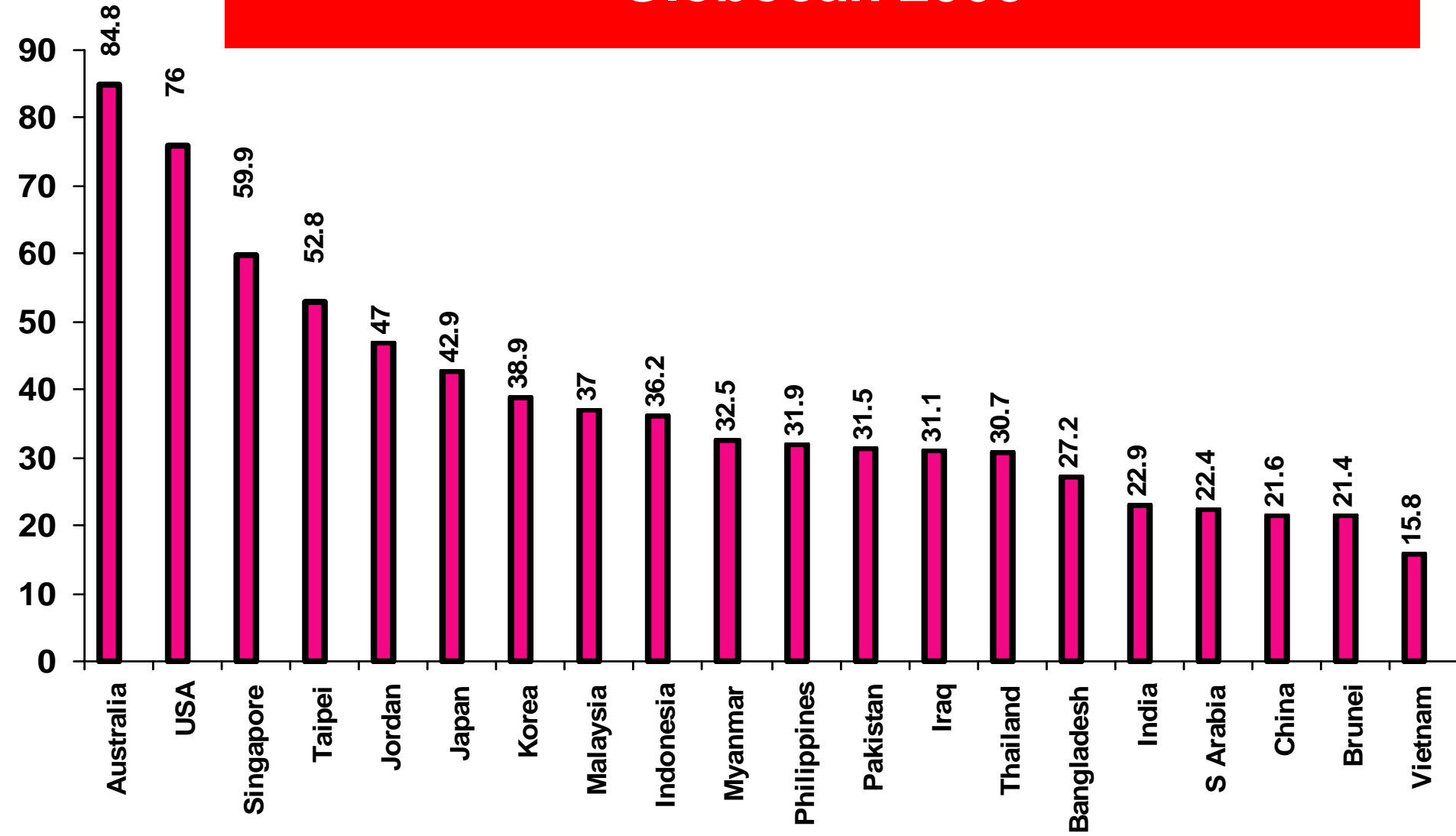
BREAST CANCER EPIDEMIOLOGY:

Breast cancer mortality / incidence ratios



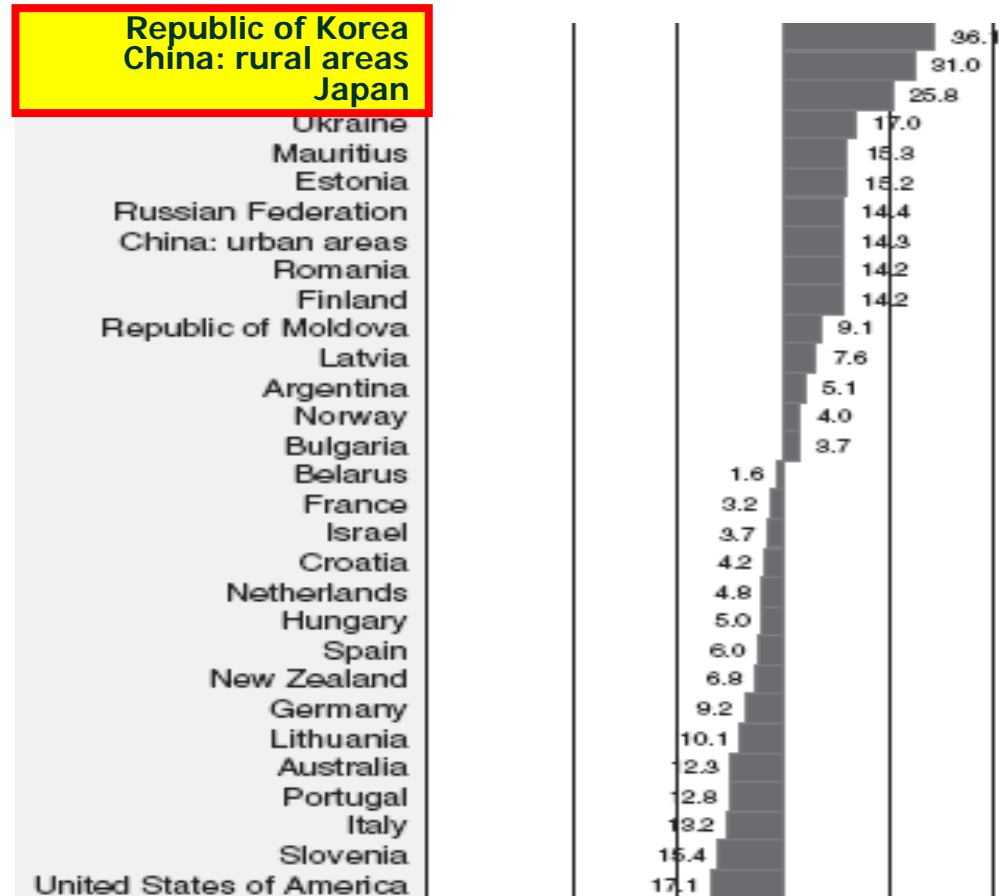
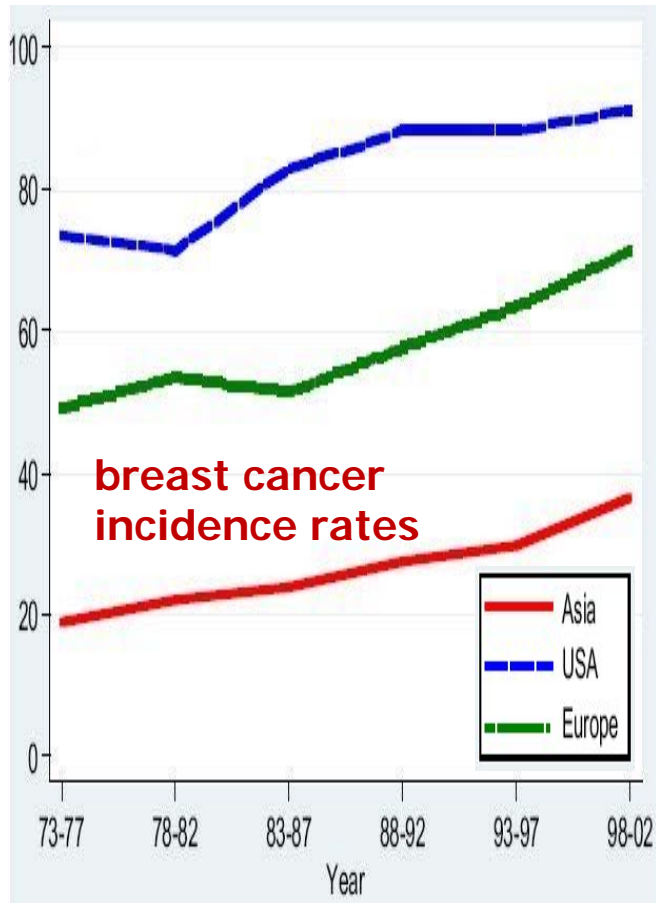
Breast cancer – Incidence in Asia

Globocan 2008



Upsurge of Breast Cancer in Asia

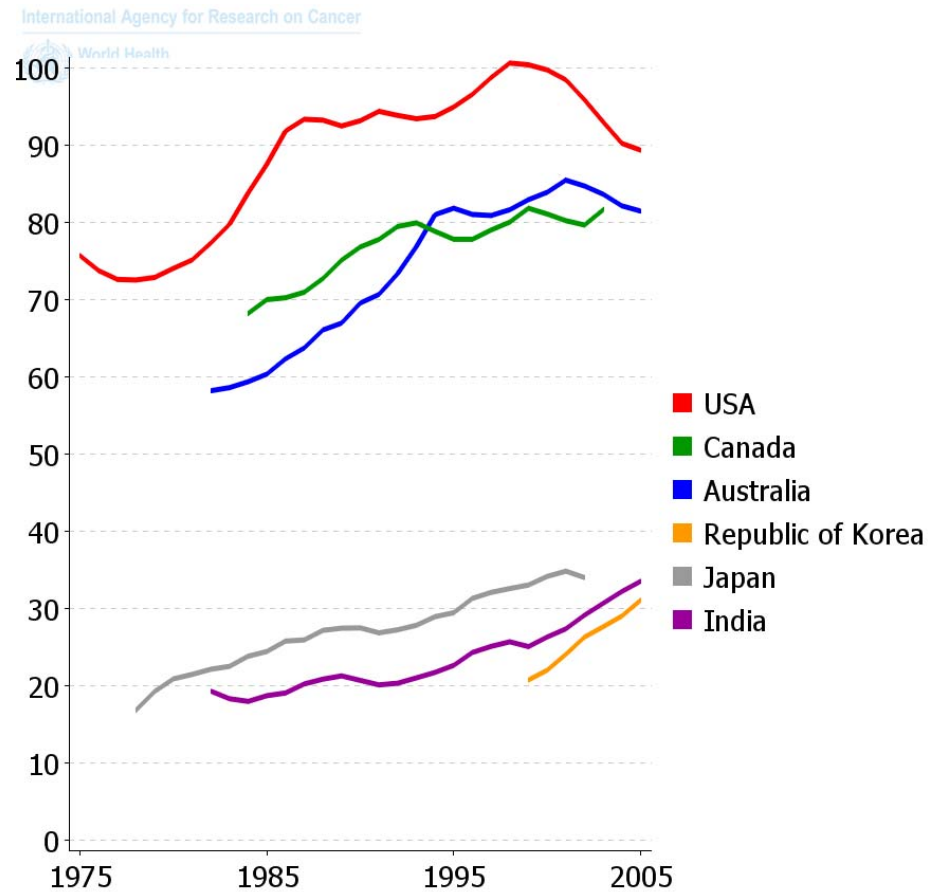
Change in Breast Cancer Mortality
Ages 25-49, % Change during 1985-87 to 1995-97



Bray et al. Breast Cancer Res 2004

Source: WHO Mortality database <http://www-depdb.iarc.fr/>

Trends in breast cancer incidence in selected countries (ASR per 100 000)



Breast Cancer Incidence with Migration from low incidence to high incidence countries

- Migration from areas of low to high breast cancer incidence increases the risk of breast cancer
- The incidence of breast cancer in immigrants increases with subsequent generations ie Asian – American women with 3 or 4 grandparents born in the West have a 50% higher risk than those with 4 grandparents born in the East
- Incidence amongst Asian immigrants may remain lower than the population of the host nation

Factors Contributing to the Lower Incidence of Breast Cancer in Women in Asia

- Less exposure to estrogen
 - Later menarche, earlier menopause
 - Lower level of obesity
 - Less hormone replacement therapy
- Lower exposure to other breast cancer risk factors
 - dietary factors
 - traditionally ↓saturated fat, ↑vegetables / fruit
 - soy-based?
 - lifestyle factors – earlier child-bearing, more children, longer breast feeding, less sedentary lifestyle

“Westernizing” Women's Risks?

The term “westernization” encompasses generally desirable changes (socioeconomic improvements that increase life expectancy and allow women reproductive control) as well as the adoption of less desirable habits (dietary changes, and lifestyle changes such as decreased exercise), all of which could increase breast-cancer risk.

Peggy Porter, M.D. N Engl J Med 2008; 358:213-216 [January 17, 2008](#)

Female Breast Cancer– NCR Malaysia report

Race	Mean Age	Median Age (range)
Malay	48.1 (10.8)	47 (15-86)
Chinese	51.4 (11.4)	50 (23-96)
Indian	52.3 (11.4)	51 (28-87)

Female Breast Cancer– NCR Malaysia report 2003-2005 Age Incidence

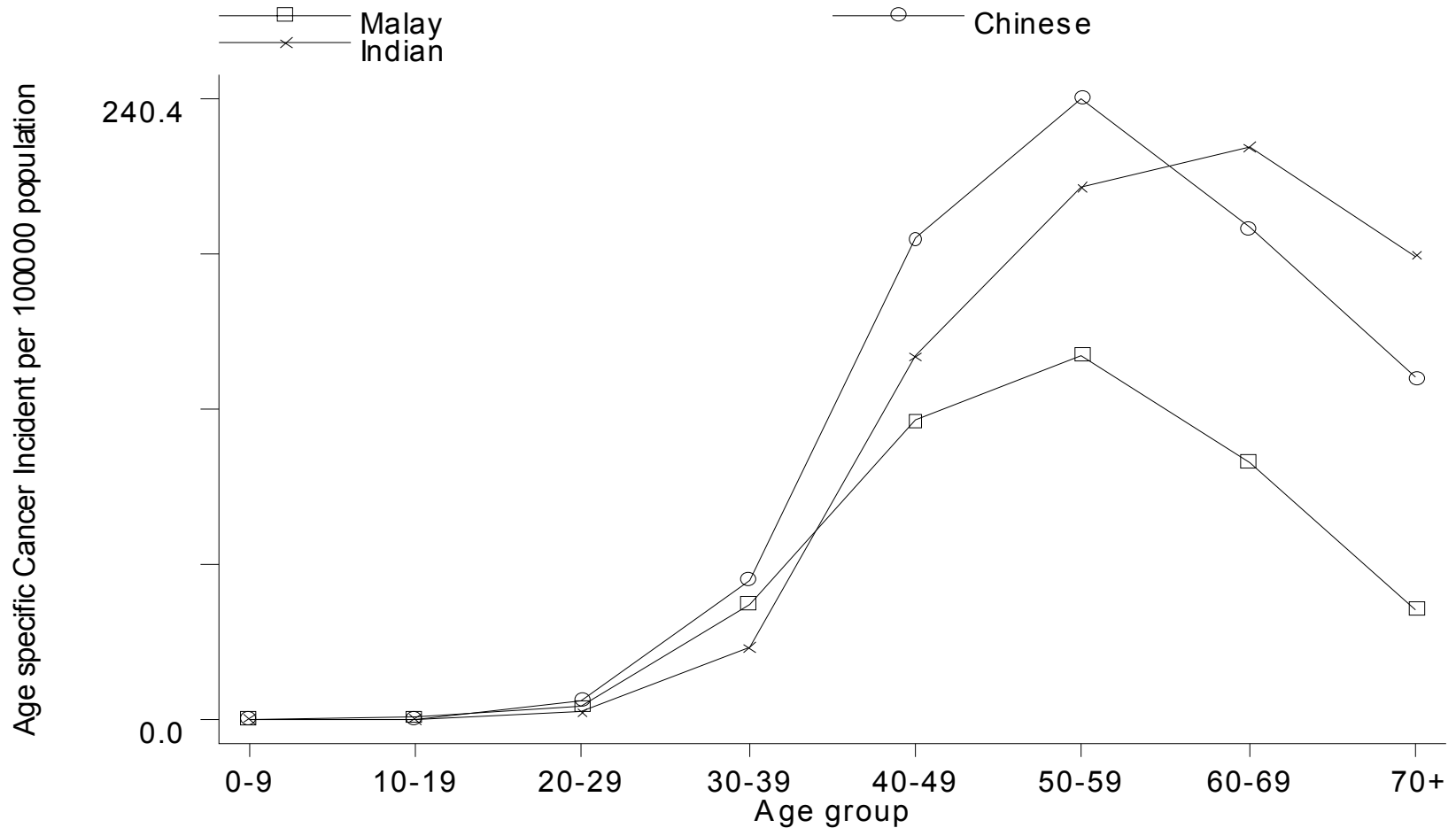
<u>Age</u>	<u>No</u>	<u>%</u>	<u>CR</u>
0-9	5	0	0.1
10-19	10	0	0.2
20-29	181	1.5	3.7
30-39	1512	12.6	37.3
40-49	4050	33.9	117.4
50-59	3479	29.1	154.0
60-69	1822	15.2	141.5
70+	901	7.5	105.1

Prevalent age group 40-49

Highest age-specific incidence 50-59

48.1% below the age of 50

Female Breast Cancer– NCR Malaysia report 2003-2005 Age Incidence



Population pyramid

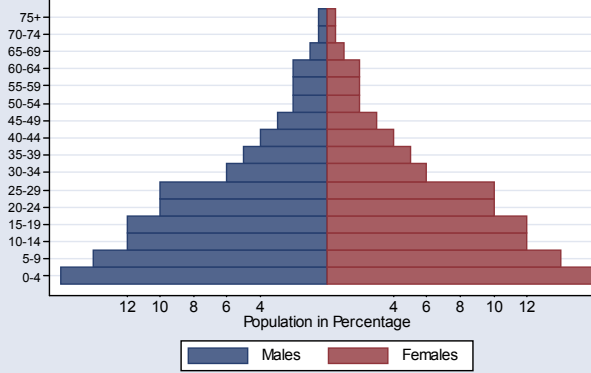
World standard Male and Female Population by Age

2002



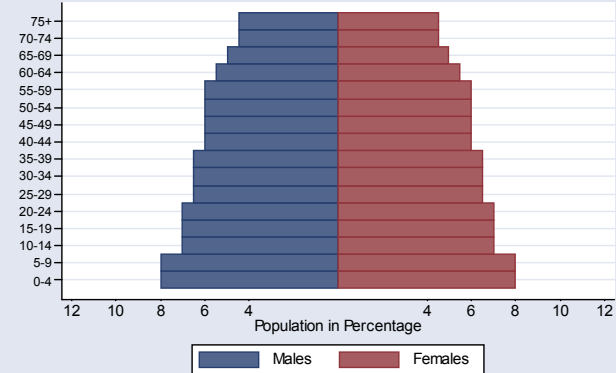
Male and Female Population of Developing Country by Age

2002



Male and Female Population of Developed Country by Age

2002



World Std population:

**Average between
Developing and
Developed countries**

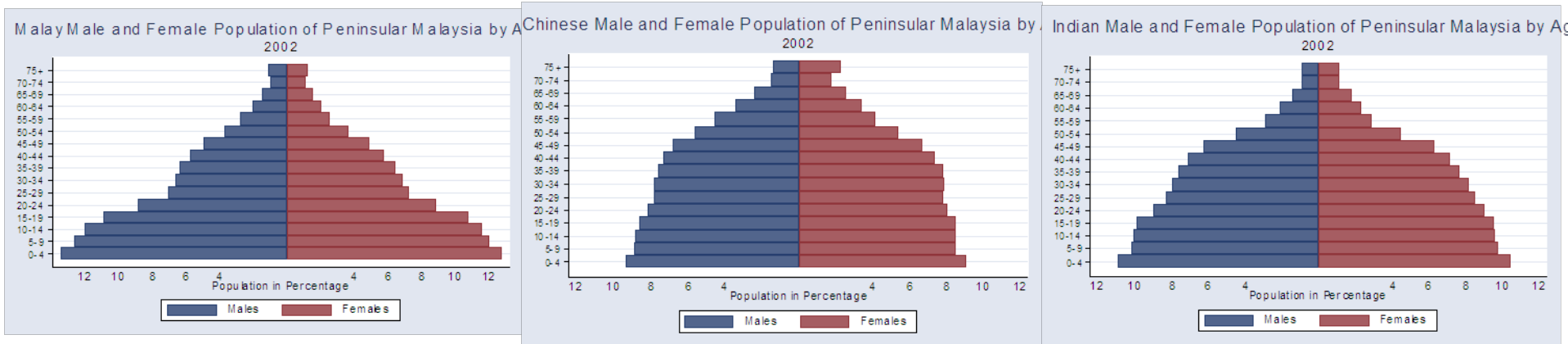
Developing country:

For most cancers with
rising age incidence,
crude rate therefore
always **HIGHER** after
age standardization

Developed country:

For most cancers with
rising age incidence,
crude rate therefore
always **LOWER** after
age standardization

Ethnic population pyramid



Malay

**Broad base pyramid,
hence rate generally
increase after age
standardization**

Chinese

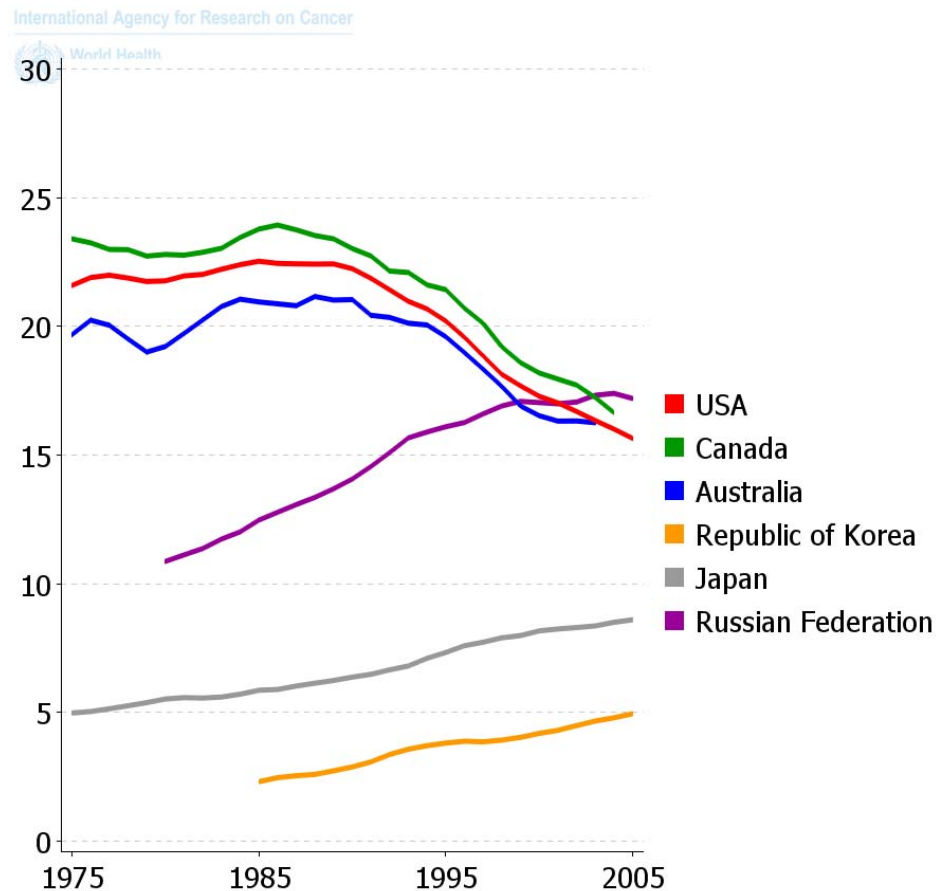
**Narrower base pyramid,
hence rate generally
decrease after age
standardization, esp**

Indian

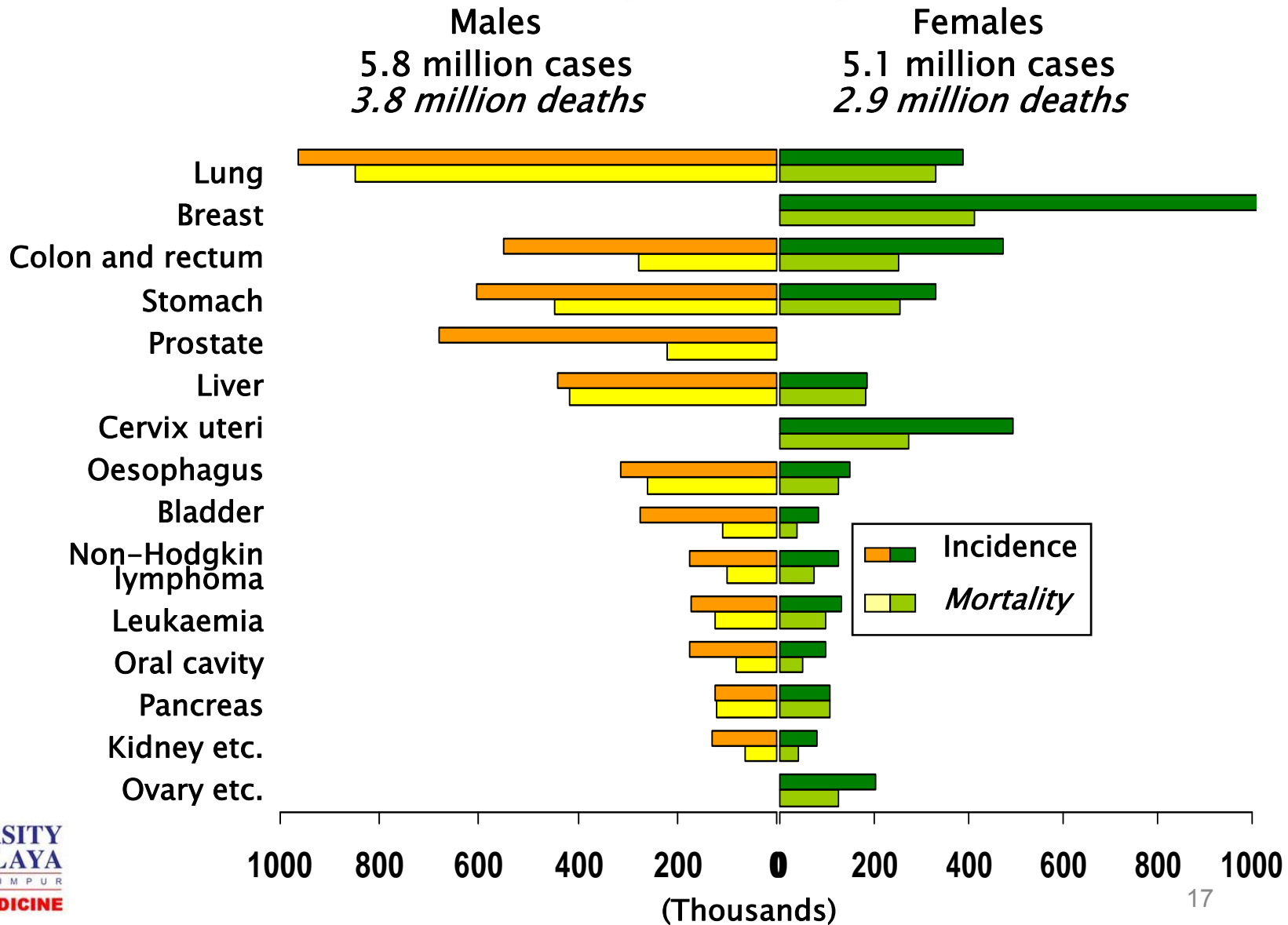
**Intermediate base and
rate increase after age
standardization**

Survival

Trends in mortality from breast cancer in selected countries (ASR per 100 000)



NEW CASES & DEATHS, WORLD, 2002



Five year survival rates around the world

USA 86%

Korea 85%

Australia 84%

Malaysia 59%

United Kingdom 75%

Philippines 52.4%

Singapore 70%

India 46.7%

Oman 64%

Uganda 44%



Survival from breast cancer depends on:

**Early
Detection**



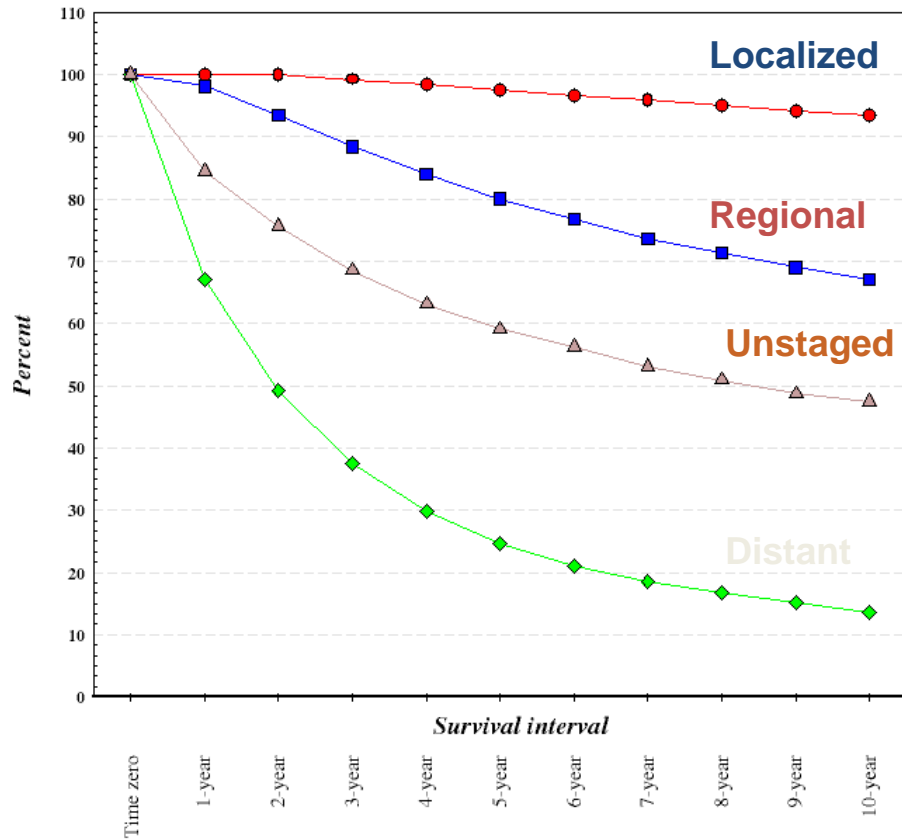
AND

Treatment



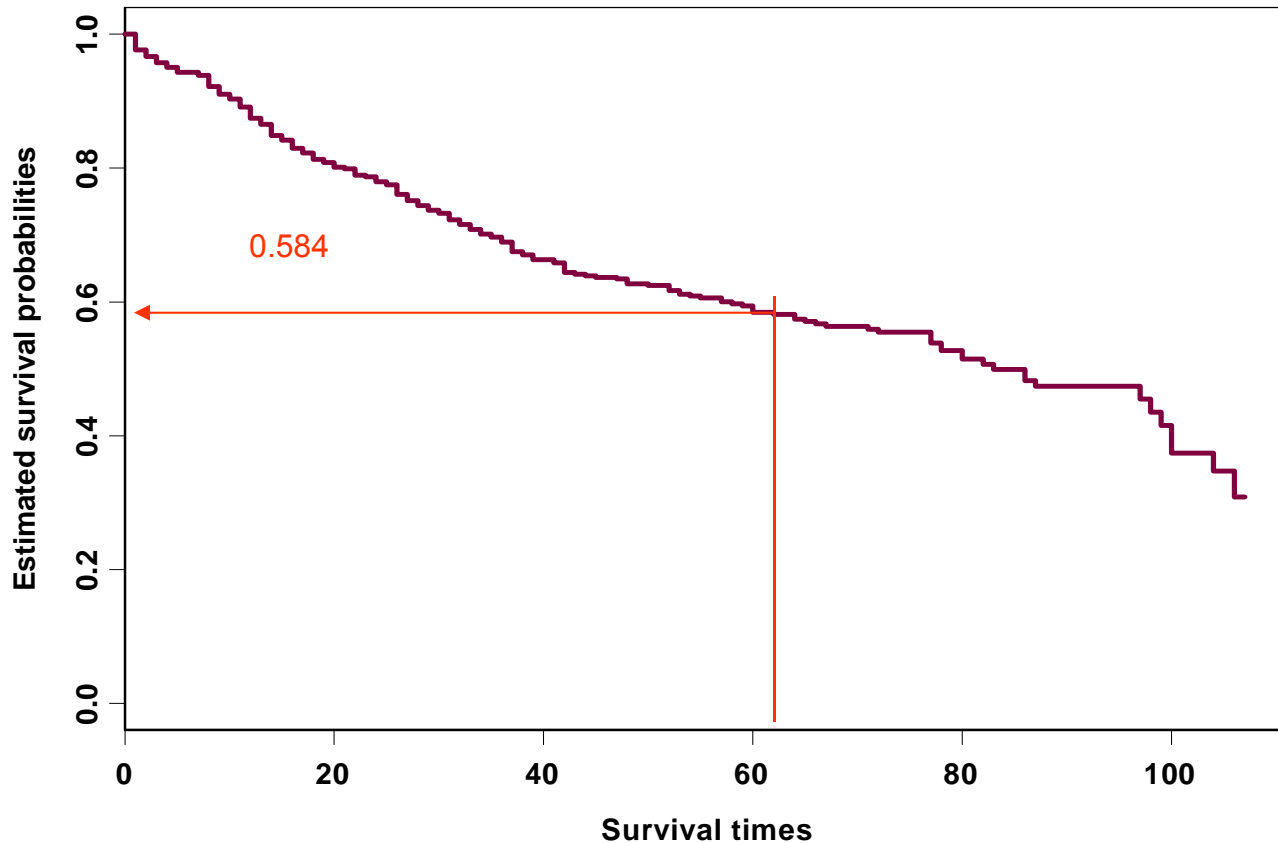
The best chance of cure is from EARLY DETECTION

Breast Cancer Survival by Stage (U.S. Data):



Overall Survival Breast Cancer Patients in UMMC- 1993-1997 (n=423)

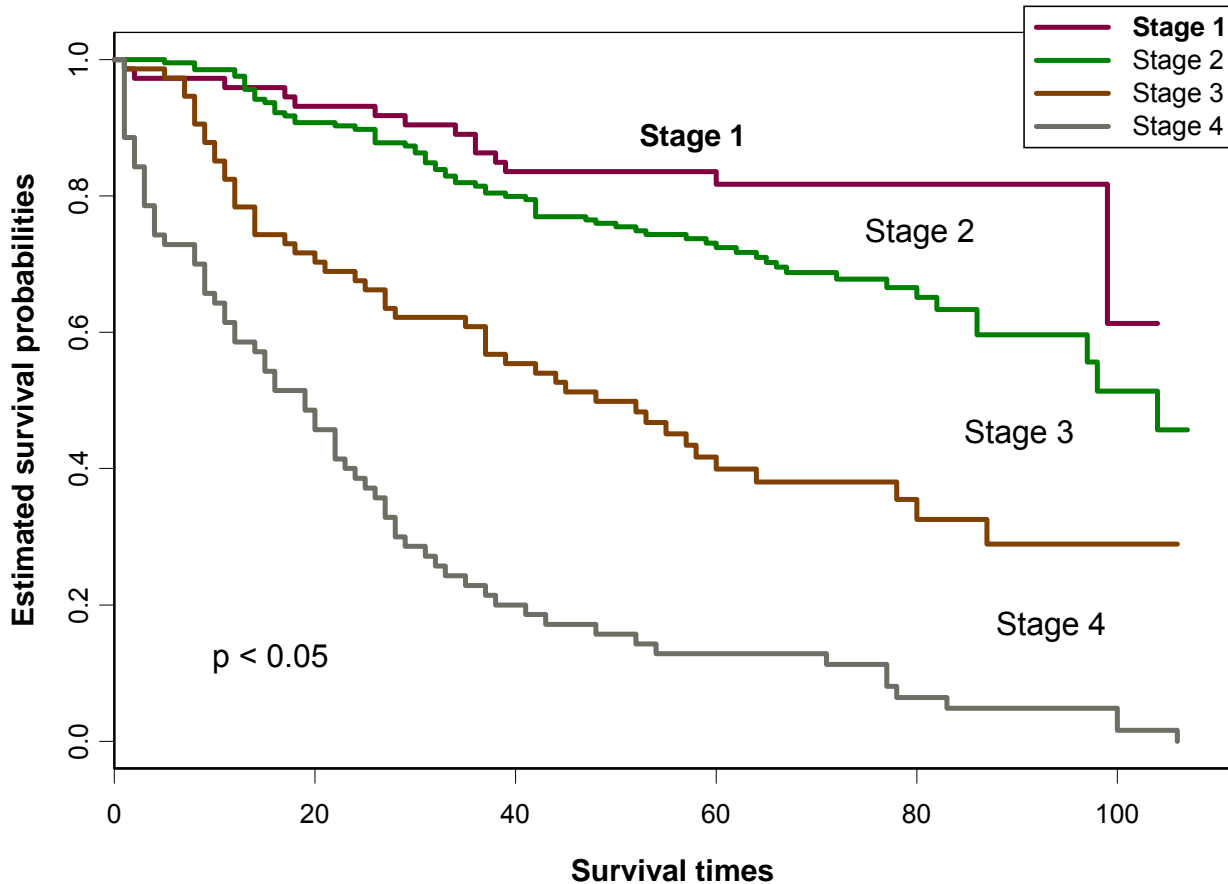
Overall survival plot



Median follow-up : 55 months(1 month to 107 months)

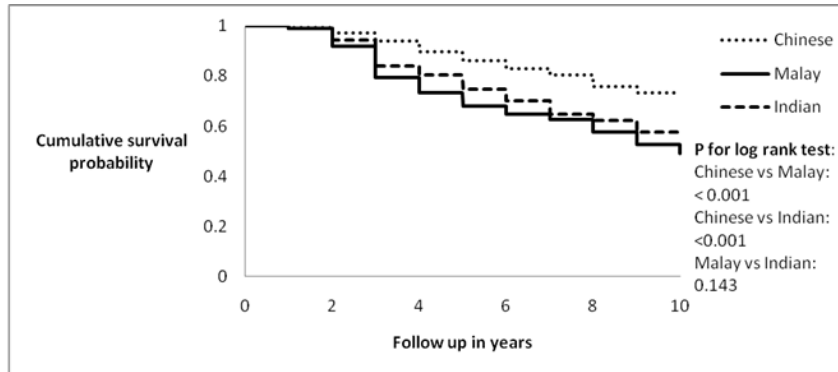
Survival by Stage in UMMC

1993-1997 (n=423)
Survival Plot by Stage



Mohd Taib NA, Yip CH, Mohamed I. Survival analysis of Malaysian women with breast cancer: results from the University Malaya Medical Centre. Asian Pac J Cancer Prev 2008 Apr-Jun;9(2):197-202

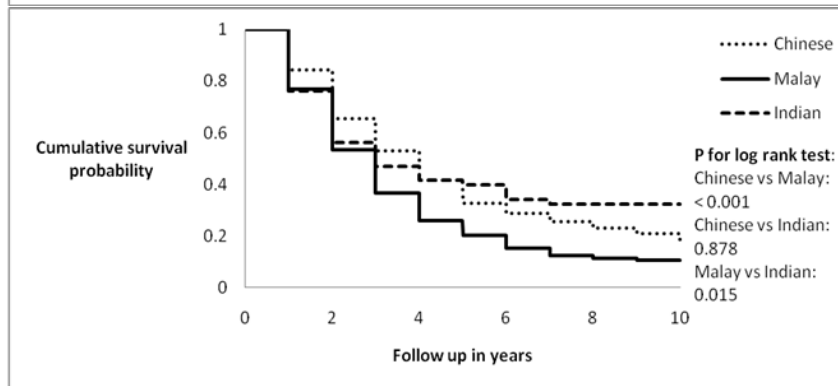
Malay ethnicity poorest survival



Cumulative overall survival by ethnicity in South East Asian women with early and late breast cancer

Early Stage (0-2)

Late Stage (3,4)



[SMBCWG]

Boo Pathy et al. Ethnicity and breast cancer submitted for publication
Saxena, Hartman, et al. (2011). "Prognostic value of axillary lymph node status after neoadjuvant chemotherapy. Results from a multicentre study." Eur J Cancer.

Boo Pathy, Yip, et al. (2011). "Breast cancer in a multi-ethnic Asian setting: results from the Singapore-Malaysia hospital-based breast cancer registry." Breast 20

Suppl 2: S75-80.

Ethnicity and survival

- Malays (n=968) presented at a significantly younger age, with larger tumors, and at later stages than the Chinese and Indians.
- Malays were also more likely to have axillary lymph node metastasis at similar tumor sizes and to have hormone receptor negative and poorly differentiated tumors.
- Five year overall survival was highest in the Chinese women (75.8%; 95%CI: 74.4%-77.3%) followed by Indians (68.0%; 95%CI: 63.8%-72.2%), and Malays (58.5%; 95%CI: 55.2%-61.7%).
- Compared to the Chinese, Malay ethnicity was associated with significantly higher risk of all-cause mortality (HR: 1.34; 95%CI: 1.19-1.51), independent of age, stage, tumor characteristics and treatment.
- Indian ethnicity was not significantly associated with risk of mortality after breast cancer compared to the Chinese (HR: 1.14; 95%CI: 0.98-1.34).

STAGE AT DIAGNOSIS

Late presentation in developing countries are very common

Ignorance and poor education



Geographical isolation and inadequate access to medical care

Absence of screening programme

Social and cultural barriers

Financial problems

Traditional Treatment

Advanced cancers



Japan – 10% present with Stage 3-4

India – 76% of breast cancers are in Stage 3 and 4

Korea – 50% present with Stage 0-1



Sabah, Malaysia – 52.2% present with Stage 3-4

Advanced cancers

Japan – 10% present with Stage 3-4



India – 76% of breast cancers are in Stage 3 and 4

Korea – 50% present with Stage 0-1

Sabah, Malaysia – 52.2% present with Stage 3-4



Oman – 50% are Stage 3-4 at diagnosis



Advanced breast cancer

Singapore – 21.5% present with Stage 3-4

Uganda – 77% present with Stage 3 - 4

In USA, only 5% of breast cancers are metastatic at diagnosis



Breast Cancer in HKL and UMMC Malaysia

	Hospital Kuala Lumpur	University Malaya Medical Centre
Stage 3-4	50-60%	30-40%
Malays	48%	23%
Chinese	35%	59%
Indians	17%	16%
Size	5.4 cm	4.2 cm
Age	50 years	50 years

CH Yip, NA Mohd Taib, I Mohamed, "Epidemiology of breast cancer in Malaysia", 2006, Asian Pac J Cancer Prev, Vol. 7, no. 3, pg. 369-374

Hisham AN and Yip CH. Spectrum of breast cancer in Malaysian women: an overview. World J Surg 2003;27:921-23.

Sabah – Queen Elizabeth Hospital

186 patients presenting in 2005-2006

- Stage 1 12.9%
- Stage 2 30.1%
- Stage 3 36.6%
- Stage 4 15.6%

4 factors significantly related to late presentation were:

- Non-Chinese, Poor (earning < RM1000 per month, Rural, and Not educated)

Leong BC, Chuah JA, Kumar VM and Yip CH. Breast cancer in Sabah, Malaysia: a two year prospective study. Asian Pac J Cancer Prev 2007;8(4):525-9.

Early detection and screening

Early detection in LMIC

- In most low and middle income countries, there are virtually no national population-based programmes for early detection of breast cancer
- It is important that programmes for early detection must be coupled with development of manpower and treatment facilities, which unfortunately are also lacking in most developing countries

Early detection in LMIC

1. Downstaging of symptomatic disease
2. Screening for asymptomatic disease

Why do women present late?



Taboos

Stigma
Silence
“Put aside”

Myths

No pain, cannot be cancer
Cancer only in old people
Mastectomy means death

Public education and awareness

- Early detection saves women's lives through downsizing and downstaging disease at diagnosis.
- Early detection cannot succeed when public is unaware of its value.
- Social and cultural barriers must be considered in any context where early detection programs are being established.
- Barriers to early detection of breast cancer have to be addressed
- For a large number of women, especially in male dominated societies, which prevail in the LMCs, their greatest fear is that their husbands may neglect or abandon them.

Reasons for late presentation

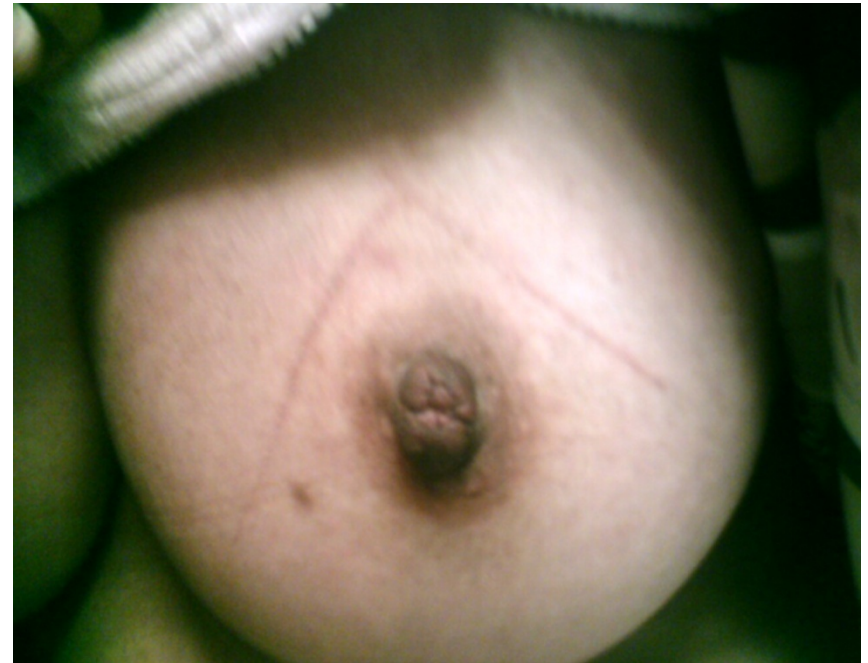
- **Fatalism** is a major theme. The importance of evaluation of threat of the disease and treatment is compounded by a **background of low breast health literacy or symptom recognition**. Coping mechanisms towards fatalistic outcomes like denial and avoidance contribute to the phenomenon.
- **Belief in alternative therapy** as an active form of treatment and a more acceptable option of treatment.
- **Decision making** - Lack of individualistic and autonomous decision making, with women playing the role of a dutiful wife and daughter was observed. Women need sanctioning to see a doctor.

Nur Aishah Taib, Cheng-Har Yip, Wah-Yun Low Recognising Symptoms of Breast Cancer as a Reason for Delayed Presentation in Asian Women - The Psycho-socio-cultural Model for Breast Symptom Appraisal: Opportunities for Intervention. Asian Pacific J Cancer Prev, 12, 1-8

Joss-stick burns



Traditional treatment



Cuts

Barriers to early detection

- Physical barriers
- Financial barriers
- Socio-cultural barriers

Barriers to early detection



- **34 year old lecturer from a local university**
- **Married with 4 children aged 2 to 7 years old**
- **Right breast lump for 4 years on traditional medicine**
- **Poor education and poverty are not the only barriers to early detection of breast cancer**

Psychosocial factors

- Culture (which revolves around family and tradition) and religion play an important role in LMIC
- Family dynamics disturbed by illness
- Women's role as a mother and wife is threatened

Putting family first

- **So I just kept quiet, not telling anyone, I carried on with life, doing all the house work. The reason was that I didn't want them know. I would be hospitalized and would not gather marriage proposal that comes for my daughters. I will be the one who will be keeping them back. They will just put me first and then they will not go through with the marriage proposals. Everyone was talking about about cancer but I just kept quiet and listened to what they were saying. Yes... it is frightening to know the truth in fact.**

Your body – whose decision?

- My younger sister used to scold me, “Why are you doing this?! You have to go and see the doctor.” After that they stopped asking me because they know without my husband permission, I would not go. But it’s just if I do it, I may hurt him. I didn’t want to hurt him. He should have sent me to the hospital earlier. Alternative medicine could and cannot do anything.

I accepted to have chemotherapy and surgery after delivering my baby. But my parents took me to see the Chinese physician. I did not think of going. But my mother and my elder sister scolded me.. I was very sad, they also scolded my husband. My husband also had no other choice. So, in order not to let my husband suffer, I wentfor traditional medicine

Stigma

I have a business selling noodles. If people know I have cancer nobody will come and eat. I was afraid of that.

If people know I have cancer, I would not be able to get marriage proposals for my daughters

Communication with health professionals

The doctor in the clinic told me the lump was normal, nothing to worry about

The breast was black and painful. I went to see the doctor that night itself when it became painful. The doctor did not want to touch it.

.Some doctors are very good, they will explain to you, but some doctors, we dare not ask because I can see they hardly speak. I feel that they may think we are troublesome people

Communication with health professionals

The doctor insisted that I needed to do the mastectomy and that it would be difficult to marry after that.

The doctor told me in a rough, intrusive and confronting way .This is cancer My husband asked me, what did the doctor say? I told him, I don't know, the doctor said it was not cancer, but has to operate. He didn't tell me what type of operation, he just said operation, he said open up and have a look. I could not accept the way the doctor spoke to me..

Alternative therapy

A pluralistic health care system is present in most LMIC's
Alternative therapists are seen as being more “holistic”
They are able to convince women that they can be cured
without “cutting, burning and poisoning”

The homeopathy therapist checked my hand, after that he gave the medicines. He asked me to dip my feet in ice water. I couldn't take the iced water. It was so painful, it was more painful than the pain in the breast

Denial – a strong coping mechanism, or is it ignorance?

- Somewhere in June, I felt a lump there and I thought “It cannot be cancer Everything is fine with me”

It cannot be cancer, there is no pain.

If it is cancer, the skin would change colour and it would ulcerate (a nurse who presented with advanced cancer. She had only seen advanced cancers while working)

Fatalism – the role of religion

Although the tumour became larger. I was confident; Allah can cure me, since he can fold the mountains at the end of times. I was so weak thinking of my fate. But after starting prayers with the religious teacher, I was no longer like that.

I know I don't have much time to live anymore

Lack of financial resources

- I dared not go for surgery. Because private fees very expensive. I was worried, people like me, not much savings, need to spend more for surgery. When old, unable to work, then problem with living expanses. Because of this, I did not think of surgery

If treated in a private hospital, if it can be cured, then it's alright. If not, then all money spent would go to waste. When I am old and can't work anymore, I still have family commitments. By then, no one will employ me. That's why I thought, no need to treat, save the money and let the family have a better life

Marital relationship

I made my husband swear on the Qu'ran that he would not take another wife if I have a mastectomy

If I lose my breast, I would lose my husband

Overcoming barriers

- Empowerment
- Advocacy
- Access to quality care
- Education
 - Public health education programmes, outreach programmes in the community, education of health professionals, improving communication skills

Methods of early detection

Screening mammography

- Most studied modality in Western population
- Paucity of data in LMIC's
- Studies in the 1960's, 70's and 80's confirm an almost 30% reduction in mortality in the screened group after 10 years; this effect was best seen in the 50-59 age group
- Based on these studies, population-based mammogram screening programmes were implemented in several Western countries

Shanghai study on BSE

- Prospective, randomised, controlled study
- 266,064 women from 519 factories in Shanghai randomised to BSE group (132,979) and control group (133,085) – Oct 1989 to Oct 1991
- *BSE Group - BSE instruction under medical supervision every 6 months for 5 years followed by on-going reminders to do BSE monthly*
- Follow-up 10-11 years - No difference in mortality rate from breast cancer between the two groups
- *BSE Group – 135 breast cancer deaths (0.1%) cf Control group – 131 breast cancer deaths (0.1%)*
- More benign breast biopsies in BSE group

Thomas DB, Gao DL, Ray RM et al. Randomized trial of breast self examination in Shanghai J nat C Inst Oct 2002

CBE – Philippines Study

- A study on CBE in the Philippines funded by the US Army Medical Research and Materiel Command in 1997 - 154,000 women were offered CBE, of which 91% were examined.
- 2.4% (3492) were positive for a lump, but of these cases, **42% of them refused clinical investigation** and only 21% were referred to tumour clinics set up for the project.
- When the cancers diagnosed in this study cohort were compared to incident cases in the population, there was no difference in the distribution of stage at diagnosis observed between these two study cohorts.
- Limited access to medical facilities and lack of knowledge of the potential for timely treatment appear to be major barriers to reducing mortality from breast cancer in this population.

Cluster-randomized controlled screening trial for cervical and breast cancer in Mumbai India

- Started in May 1998, using trained primary health workers to provide health-education, visual-inspection of cervix (with 4% acetic acid-VIA) and clinical breast examination (CBE) in the screening arm, and only health education in the control arm.
- Four rounds of screening at 2-year intervals will be followed by 8 years of monitoring for incidence and mortality from cervix and breast cancers.
- After 3 rounds of screening – interim results showed good randomization between the screening (n = 75360) and control arms (n = 76178).
- In the screening arm
 - High screening participation rates;
 - Low attrition;
 - Good compliance to diagnostic confirmation;
 - Significant downstaging;
 - Excellent treatment completion rate;
 - Improving case fatality ratios.

What about screening for early breast cancer in LMIC's?

- *Resources limited in developing countries*
- **CBE is inexpensive, easy to perform and can be readily taught to health care providers. Further research on CBE should be promoted especially in countries with limited resources to evaluate its efficacy and effectiveness in relation to age, ethnicity and race.**
- **Before any screening programme is put into practice, resources for the treatment and follow-up of breast cancers detected by screening must be available. In Asia, where women tend to put the needs of their families before their own health, even if a screening programme is available, women may not participate because they are busy as homemakers or carers. As seen in Philippines a large proportion of women discovered to have lumps on CBE refused any further investigation.**

Besides Early Detection,

TREATMENT

**makes a big
difference to**

SURVIVAL

ARE THERE ADEQUATE TREATMENT FACILITIES IN DEVELOPING COUNTRIES

*Manpower –
doctors, nurses,
paramedical
staff*

*15 African nations have no
radiotherapy machines!!*

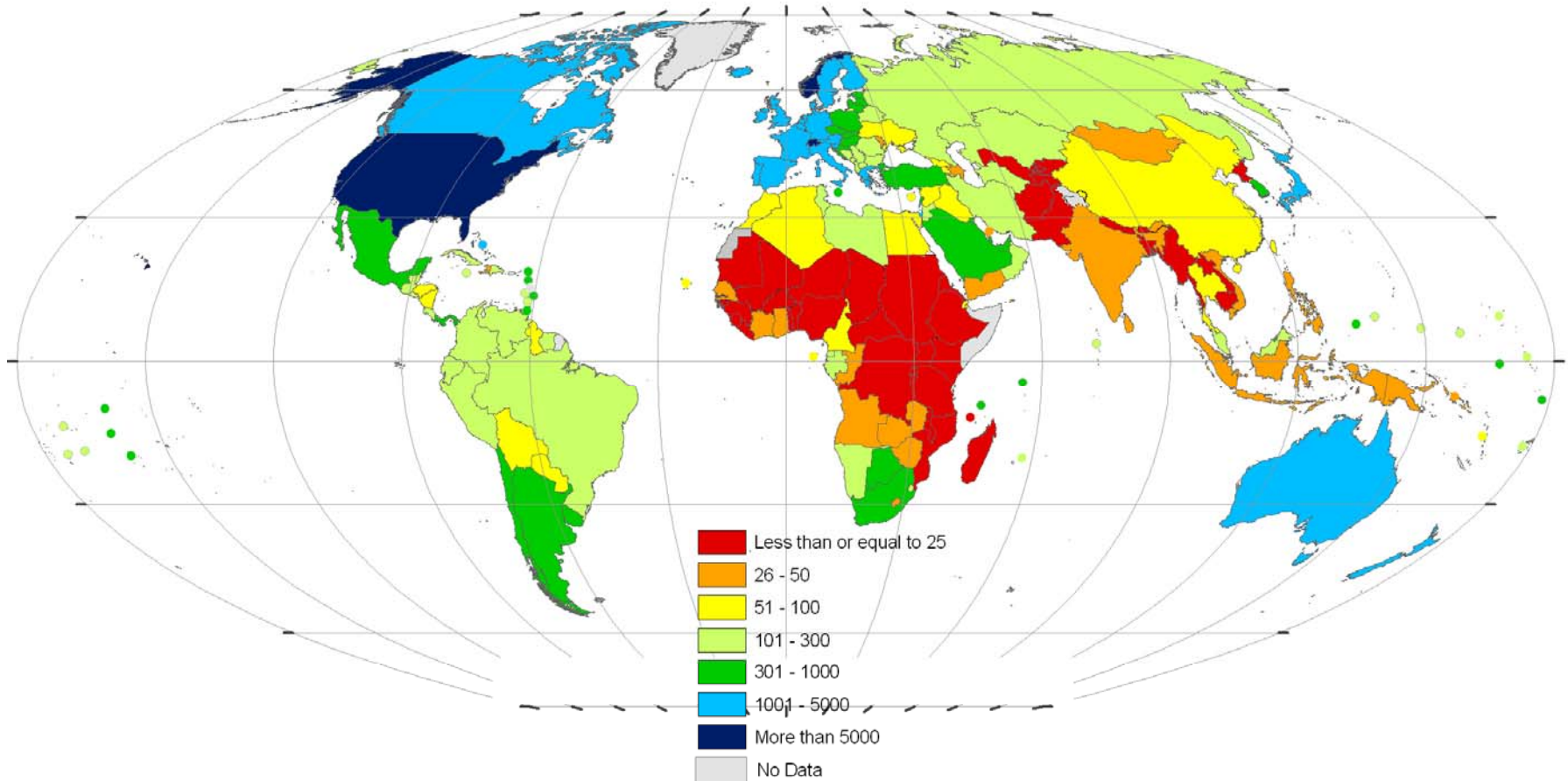


Radiotherapy machines



**Medical facilities – hospitals, clinics,
labs, operating theatres**

Total expenditure on health per capita, 2004 (in US\$)



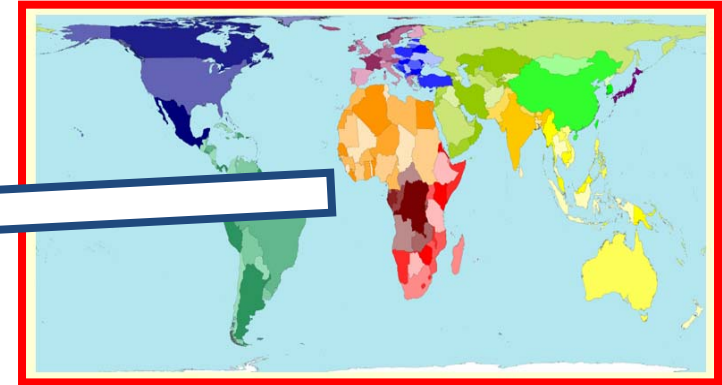
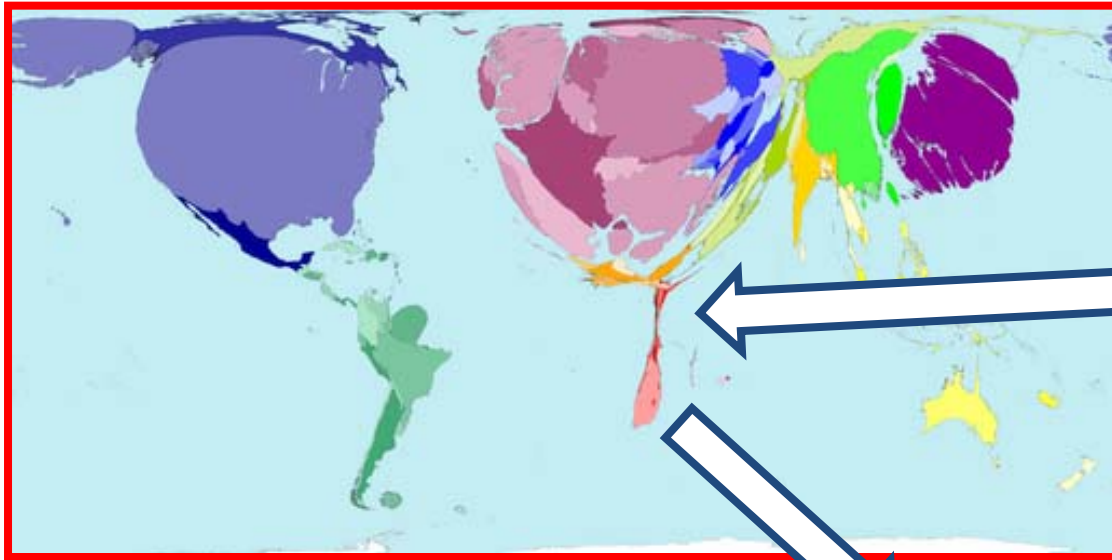
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The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

**Data Source: National Health Accounts unit,
Evidence and information for policy,
World Health Organization**

Map Production: Public Health Mapping and GIS
Communicable Diseases (CDS), World Health Organization

Spending Per Capita for Health



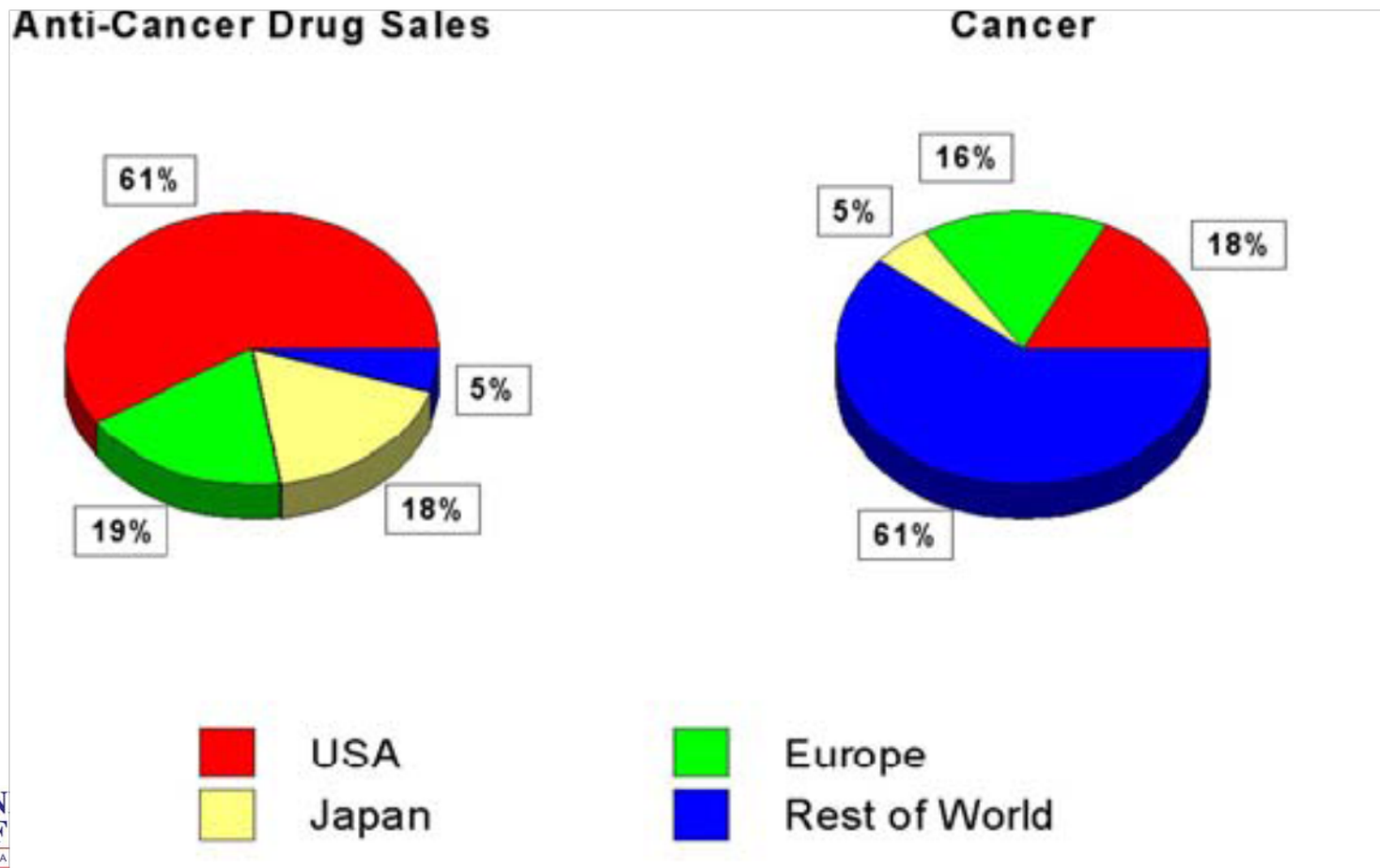
Geographic Map

Territory size shows the proportion of worldwide spending on public health services that is spent there. This spending is measured in purchasing power parity.

(from Worldmapper, www.worldmapper.org)

Minimal amount spent on health care in Africa

Equity of access – world-wide



Treatment is inadequate in developing countries

Lack of manpower

Lack of facilities

Competing priorities – the major health problems may be infectious diseases rather than breast cancer

Lack of drugs

Lack of psychosocial support

If breast cancer survival rates were uniformly as high as the best in the world, 100,000 fewer women would die of breast cancer each year in the developing world.

CLOSING THE GLOBAL GAP IN BREAST CANCER CARE



What can we do?

AWARENESS



EDUCATION



SUPPORT

ADVOCACY



SHARING



EMPOWERMENT

Conclusion

- Incidence of breast cancer in Asia is lower than in the west but the incidence is increasing rapidly
- In Asia, the age at presentation is younger than in the west, probably due to the population pyramid
- Asian women present with later stages of disease, hence the mortality rate is higher
- Almost all the Asian countries have no population based mammographic screening programme