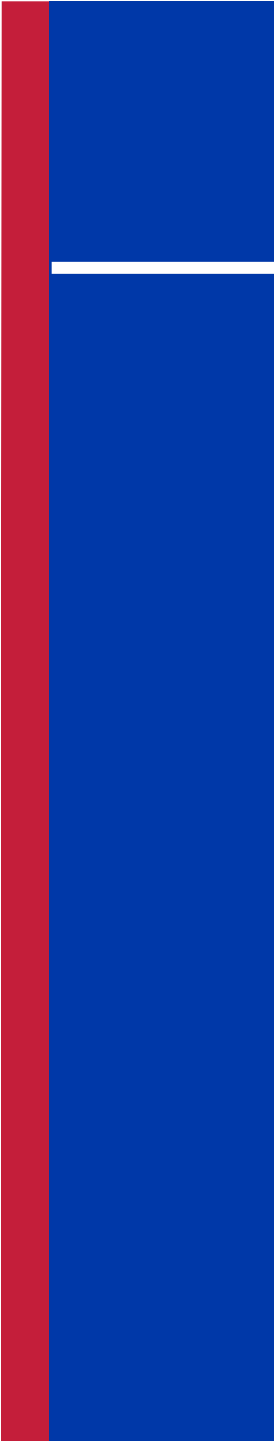




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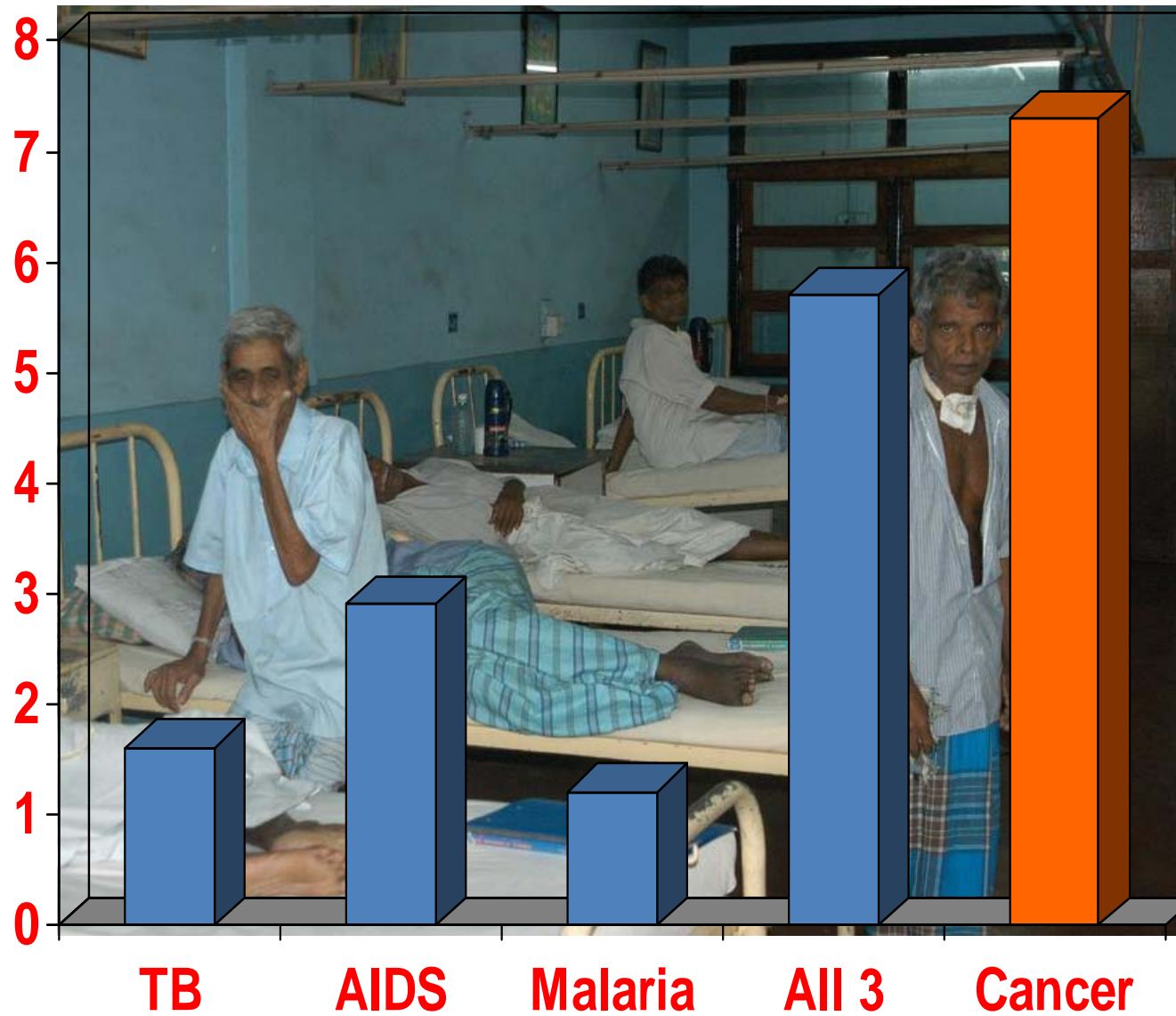


Behavior Science and Health (why cancer?)

- The crowded agenda:
 - Smoking cessation*
 - Hypertension
 - Heart disease
 - Adult immunization
 - Nutrition counseling*
 - Violence prevention

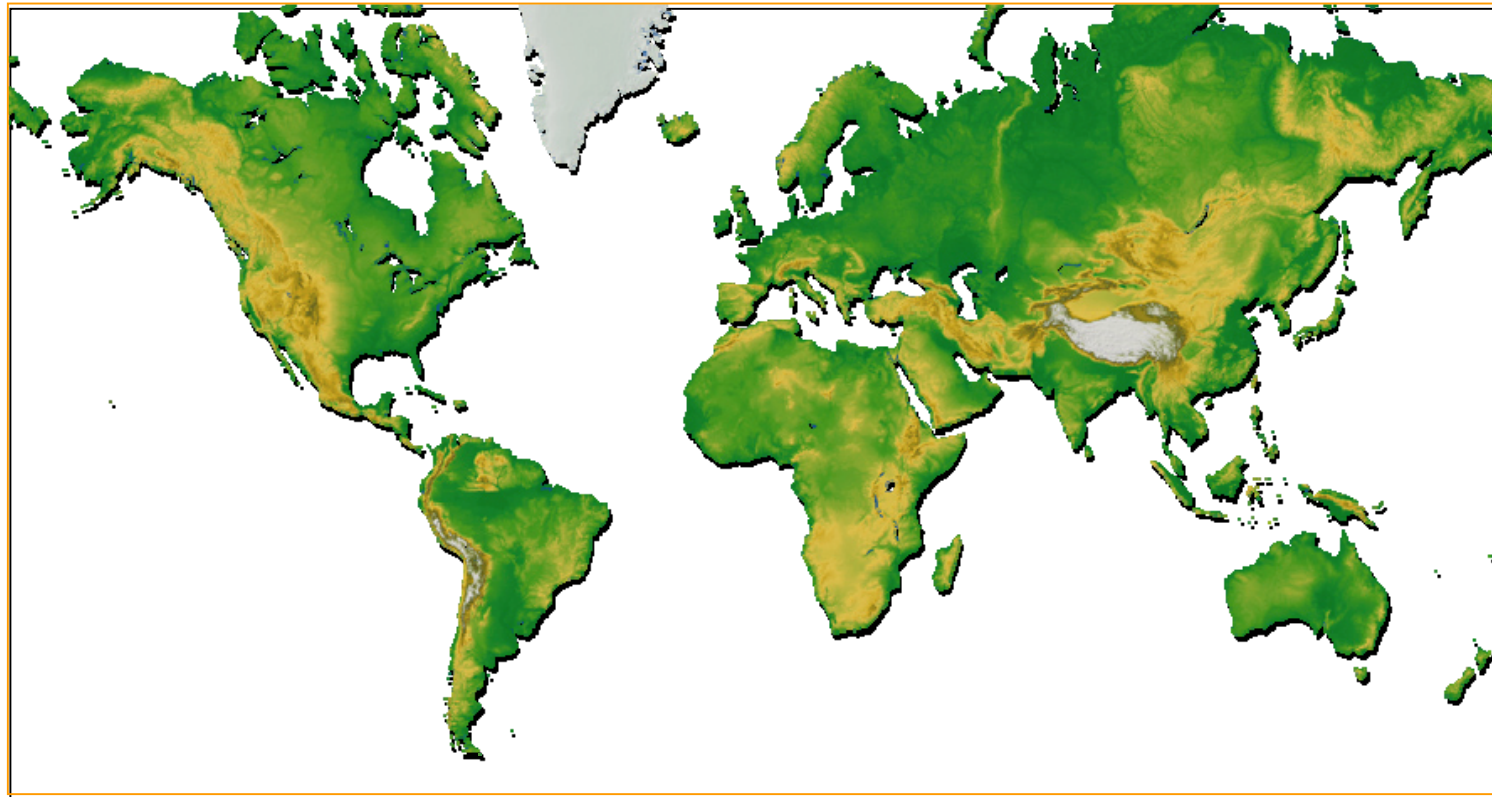
*Cancer related

Global Deaths (millions per annum)



WHO (2003)

CANCER – WORLDWIDE BURDEN (2005)

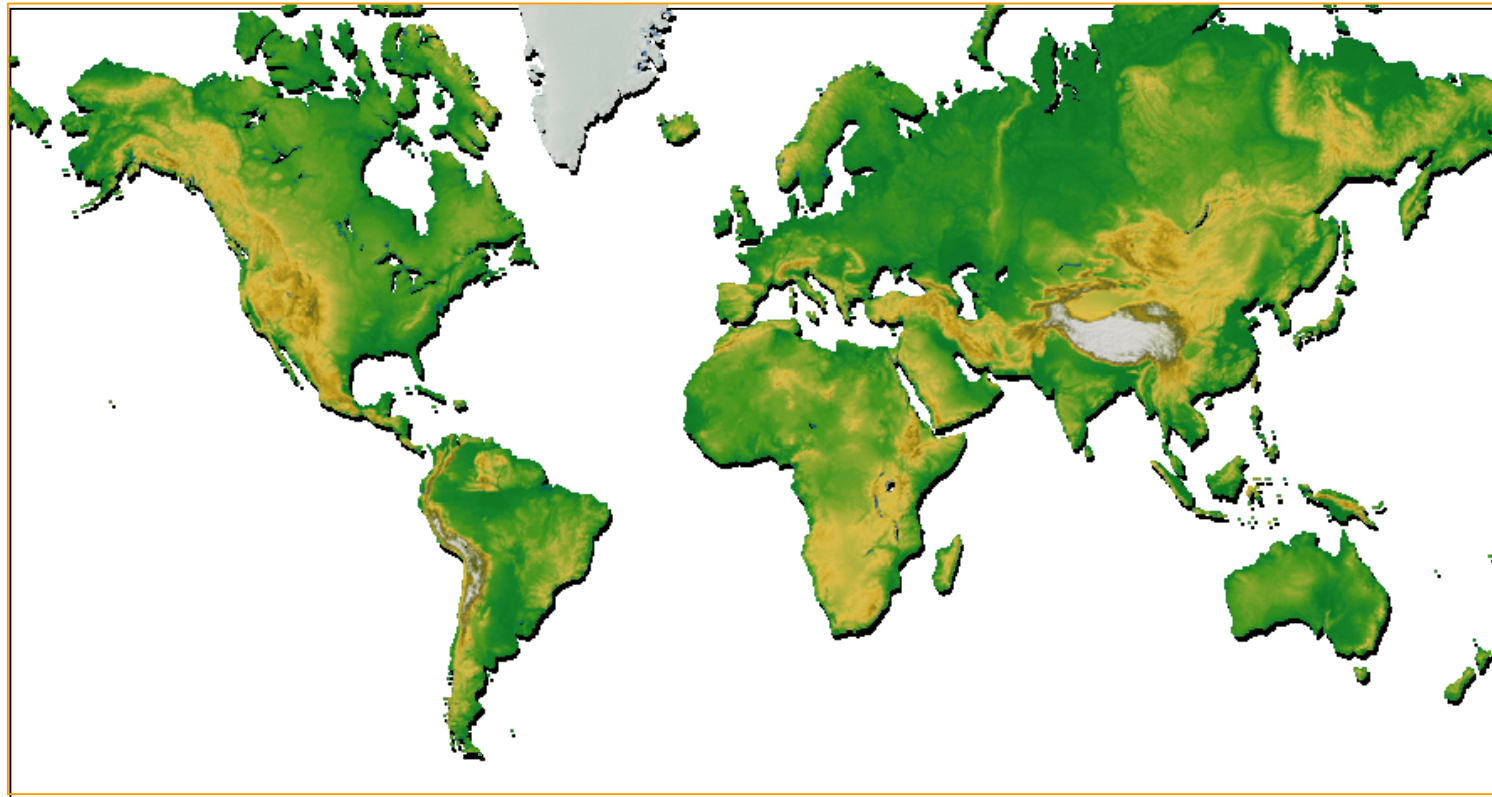


11 million New Cases

7 million Deaths

25 million Living with Cancer

CANCER – WORLDWIDE BURDEN (2030)



27 million New Cases

17 million Deaths

75 million Living with Cancer



Cancer

The Global Challenge

- Application of new knowledge from
 - Basic research
 - Clinical research
 - Cancer control research
- This is a challenge for all cancer clinicians be they physicians or behavioral scientists



Cancer Screening

- A series of tests with some uncertainties:
 - some known proven harms
 - some possible benefits
 - some proven benefits



Genetic Testing

- The Case of BRCA and Cancer
 - Certain genetic mutations give an 80% or greater lifetime risk of cancer
 - There are some mutations of unknown significance
 - There are some mutations that will eventually be found to be of no significance



Genetic Testing

- There are genetic tests for risk of breast, ovarian, colon and other cancers.
- What do you do if a genetic mutation is found?
- Efficacy of prophylactic surgery is open to question
 - Mastectomy
 - Oophorectomy
 - Colectomy
- What about family?



Breast Cancer Screening

- Breast screening with mammography and clinical breast examination clearly save lives for women over age 40
 - There are significant call backs for abnormal scans
 - There are significant numbers of biopsies that are negative for cancer
 - It causes a lot of frustration and worry



US Preventive Service Taskforce Estimates:

- The number needed to screen to save one life in a decade:
- Age 40 to 49, 1900
- Age 50 to 59, 1340
- Age 60 to 69, 340



USPSTF Estimates

A decade of screening 1900 women

- 1330 call backs for reassessment
- 665 breast biopsies
- 8 cancers diagnosed
- 1 life saved
- Some unquantified overdiagnosis



Colon Cancer Screening

- Annual stool blood testing of adults aged 50 and over decreases risk of death by 35% and risk of cancer by 20%.
- Other useful tests:
 - Sigmoidscopy every five years*
 - Colonoscopy every ten years*

*for those with previous normal screens



Cervix Cancer Screening

- Clearly saves lives
- Most organizations recommend Pap screening every two to three years for women who are sexually active



Lung Cancer Screening

- CXR screening abandoned in mid 1970's after several trials were negative and two actually suggested possible increased risk of death.
- Spiral CT is being evaluated in randomized clinical trial. Some advocate for it despite no clinical study showing it saves lives.



Prostate Cancer Screening

- Prostate Specific Antigen testing is widely done in U.S. despite questions regarding its efficacy.
 - It clearly leads to increased numbers of diagnoses
 - It clearly misses as much cancer as it finds
 - It is unclear that it finds disease that is life threatening but treatable



Prostate Cancer Screening

- The quandary of prostate cancer screening
 - There are cancers that do not need to be cured but can be cured
 - There are cancers that need to be cured but cannot be cured. (The patient dies)
 - We do not know if we cure any disease that needs to be cured. (“Do we save lives?” is an open question)



Prostate Cancer Screening

- Several studies have shown PSA screening finds a lot of cancer, but have failed to show that prostate cancer screening saves lives.
- The only study to show that screening may save lives had a tenuous p value and showed that 48 men needed to be treated to save one life at ten years of follow-up.



Behavioral Research

- Must respond to new opportunities and challenges resulting from:
 - Advances in basic science
 - Behavioral research
 - Advances in technology (including the internet and medical technology)
 - Changes in health care delivery systems



Behavioral Research

Central to:

- Cancer Prevention
- Early Detection of Cancer
- Cancer Control



Behavioral Research

- Must focus on:
 - The public
 - The patient who does not have cancer
 - The health practitioner



Behavioral Research

Must also focus on:

- The cancer survivor
 - Interventions needed to enhance functional health status
 - Improve delivery of palliative care
 - Promote health behaviors that may reduce risk of second malignancy or advanced relapse



Cancer Prevention and Control

- 65% of cancer deaths are attributable to human behavior:
 - Smoking (tobacco abuse)
 - Diet (excess calories, inadequate fiber)
 - Physical inactivity
 - Barriers to screening



Cancer Genetics

- Unprecedented opportunities for individuals and families to learn they carry cancer predisposition genes
- How do we communicate this in a way that facilitates
 - Informed decision making and
 - Minimizes adverse psychosocial effects?



Genetic Testing

- Efforts needed to evaluate behavioral interventions to enhance quality of life among those undergoing genetic testing
 - Those who have a mutation
 - Those who do not have a mutation
- Efforts needed to maximize adoption of good cancer control practices among (clinician and patient) participants in genetic testing programs



Cancer Genetics

- A better understanding of the behavioral and social impact of disclosure of genetic information is critical to the design of optimal approaches to:
 - Health education
 - Health counseling
 - Treatment outcome



Cancer Genetics

- Genetic information obtained through genetic screening has far reaching consequences for individuals at risk:
 - Discrimination by insurances
 - Discrimination by employers
 - Stigmatization
 - Disclosure of non-paternity
 - Adverse psychological consequences



The Challenge

- Enhanced risk communication, comprehension and informed decision making where there is uncertainty is a major issue in the U.S. which is screen crazy!!!



The Challenge

- How do we adequately inform people of the difficult decisions that need to be made in the face of uncertain risks and benefits
 - PSA for prostate cancer
 - Mammography for women age 40 to 49
 - Genetic susceptibility testing



The Challenge

The misperception of cancer risk

- Many tend to overestimate risks of cancer
- A few tend to underestimate risks of cancer
- Many over-value medical interventions



The Challenge

- Many have worked hard to mis-inform and mis-lead the public in regards to the potential of cancer screening
- Most did this with good intention often simplifying the complex
- Early detection saves lives!!!



The Challenge

- Diffusion of accurate screening information (including genetic screening) in an effective and ethical way?
- How do we counterbalance the misleading and sensationalized information that have been generated in the media?



Behavioral Research

- There is a need to design and evaluate new strategies to:
 - Improve cancer risk communication
 - Enhance comprehension
 - Facilitate informed decision-making
 - Minimize psychological distress
- About options for:
 - cancer prevention
 - screening and
 - treatment



Behavioral Research

- There are significant cognitive and emotional variables that receive insufficient attention in the dominant models of health behavior.*

* what experts tell me



Behavioral Research

- Expand existing theories of health behavior to account for
 - The underserved
 - New health technologies
 - Changes in service delivery
- Use this theory to guide intervention development and test hypotheses

* what experts tell me



Behavioral Research

- Must respond to changes in health care delivery
- Integrate evaluation of cost-effectiveness



Behavioral Science

- Much focus on screening adherence
 - On system change
 - Community settings
- There is a need for basic behavioral and longitudinal (non-intervention) studies in relatively new areas:
 - Genetic testing and counseling
 - Informed decision making in screening



Behavioral Science

- Sociodemographic factors influence adoption of Cancer Prevention and Control Practices such as screening:
 - Race
 - Culture
 - Education
 - Income
- Interventions and Measurement tools must be culturally appropriate



Cancer Screening

A Challenge

- Communications of risk and informed consent posed by new screening tests with unproven benefits and some proven risks
 - Notably PSA screening for prostate cancer
 - Mammography for women in their 40's
 - Some genetic tests for breast, colon, and ovarian cancer



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