DCP3 Volume 6: CANCER Overview

Hellen Gelband for the Volume 6 editors

DCP3 Advisory Committee meeting

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London

CDDEP THE CENTER FOR Disease Dynamics, Economics & Policy
WASHINGTON DC • NEW DELHI

Outline

- Volume structure
  - Chapters and authors
- The evolving cancer burden
- Key messages (minus goals)
  - Recommendations
- Planned dissemination and further work

Chapters and authors

1. Overview

   Editors and authors

PART 1: Burden

2. The Changing Global Burden of Cancer

   Freddie Bray (IARC)

PART 2: Interventions for Selected Cancers

3. Breast Cancer

   Benjamin Anderson (FHCR)

4. Cervical Cancer and Pre-cancer

   Lynette Denny (U Cape Town)

Chapters and Authors [2]

5. Oral cancer

   R. Sankaranarayanan (IARC)

6. Colorectal cancer

   Linda Rabeneck (Cancer Care Ontario)

7. Childhood cancers

   Sumit Gupta (Hospital for Sick Children, Toronto)

8. Liver cancer

   Hellen Gelband (CDDEP)

9. Palliative care

   James Cleary (U WI)

Chapters and Authors [3]

PART 3: Policy, Cancer Services, Research

10. Global tobacco control
    Prabhat Jha (CGHR)
11. Cancer services and the comprehensive cancer centers
    Joann Trypuc (Princess Margaret Hospital, Toronto)
12. Cancer research: the need for national commitment
    Edward L. Trimble (NCI)
13. Screening for cancer
    Terry Sullivan (U Toronto)

Chapters and Authors [4]

PART 4: Economics

14. Economic overview: Cancer in LMICs

    Susan Horton (U Waterloo)

15. Financing cancer care

    Felicia Knaul (Harvard U)

16. HPV vaccination in China: equity and financial risk protection

    Carol Levin (UW)

TOTAL: 67 authors

What Isn't Covered

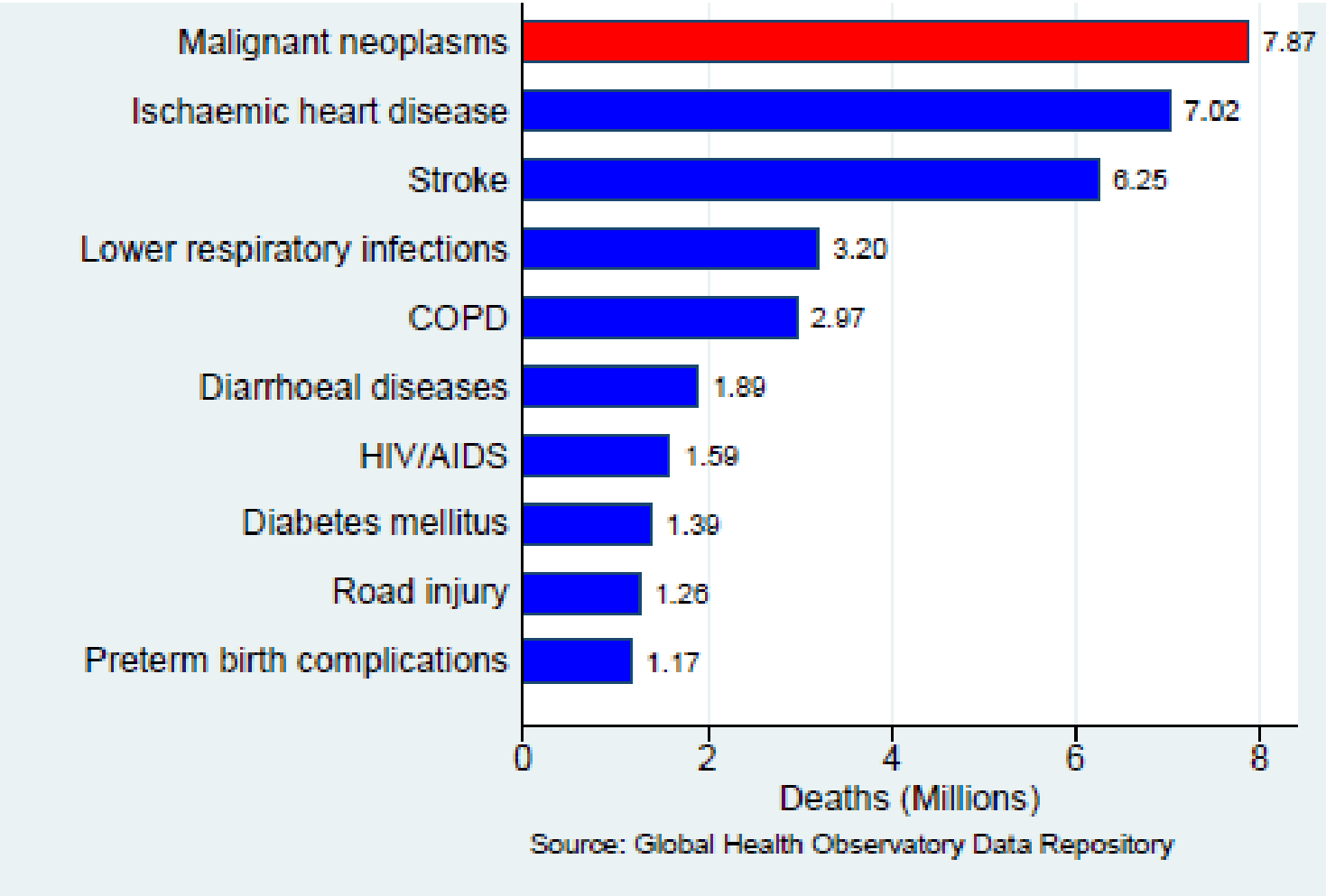
- Prostate cancer
- Stomach cancer
- Occupational carcinogens (especially various types of asbestos)
- Some other easily curable cancers

2030 Projection

21.6 million new cancer cases

- 53% increase solely on demographic changes
- 14% increase on changing incidence rates
- 67% increase over 2012, an increase of 1.2 million new cases per year The
- increases proportionally greatest in lower HDI settings
- .

10 Leading Causes of Death, World 2011



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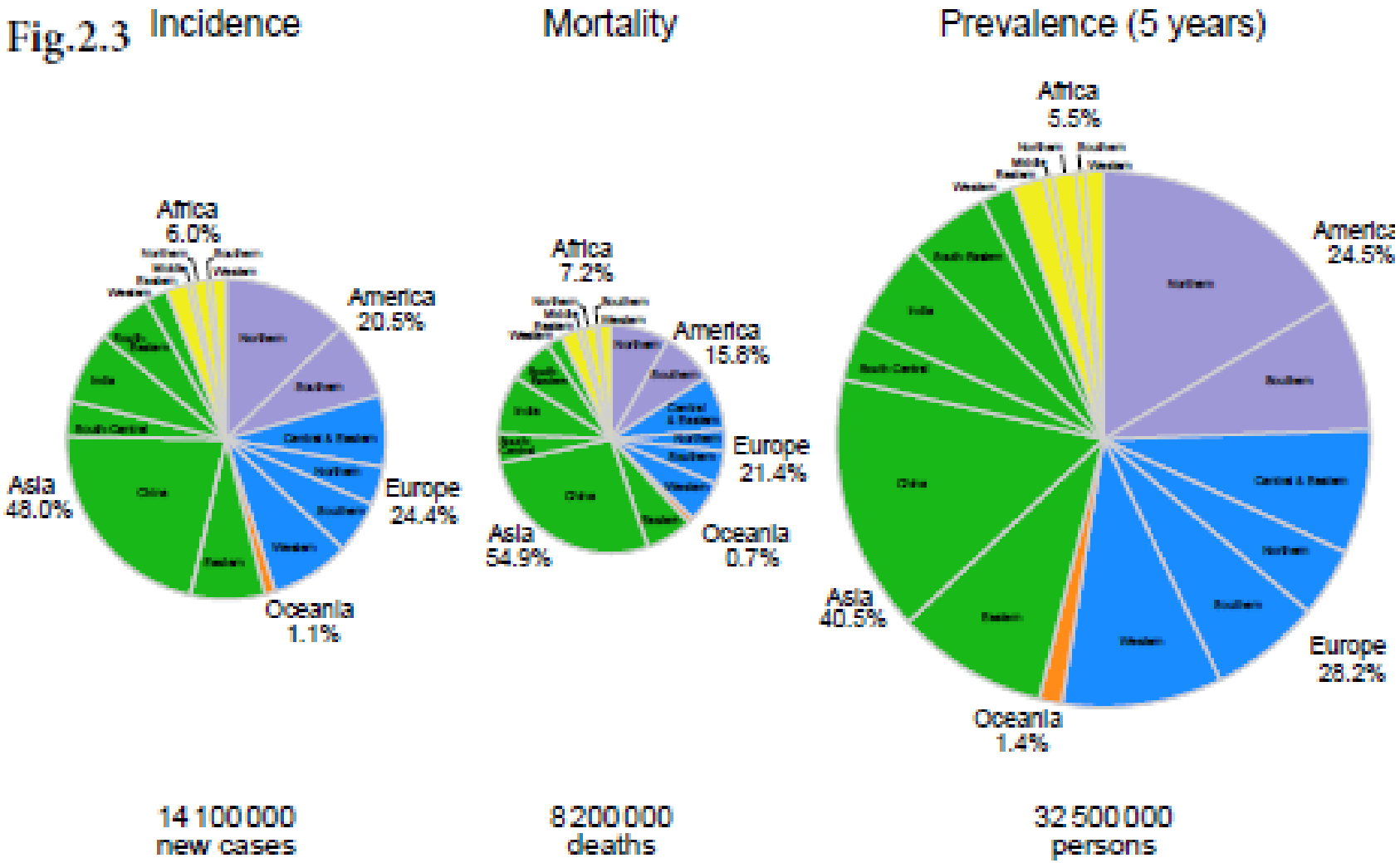
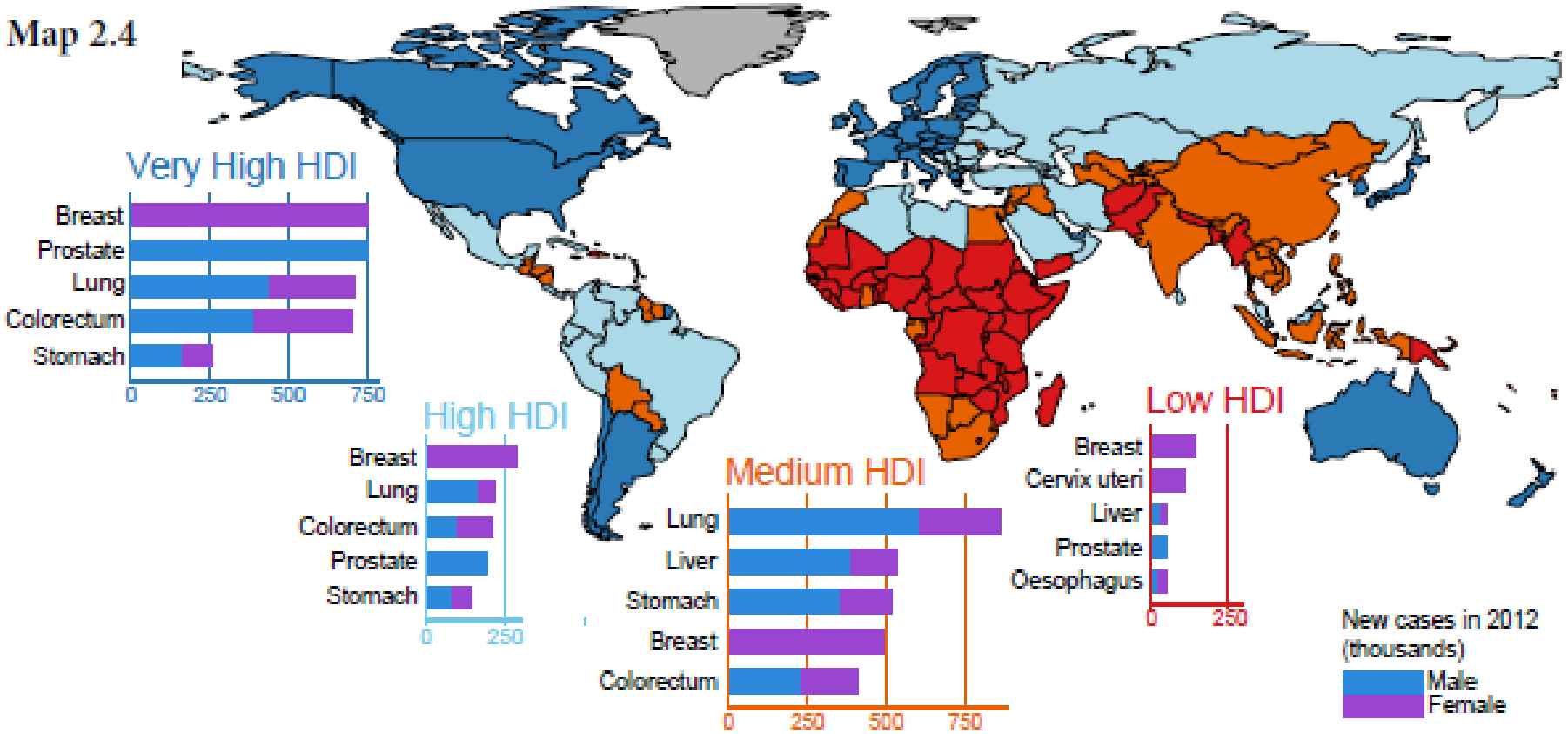
Global burden of cancer

incidence, mortality, 5-year prevalence in world regions/countries (GLOBOCAN 2012)

Fig.2.3



Cancer Incidence by HDI



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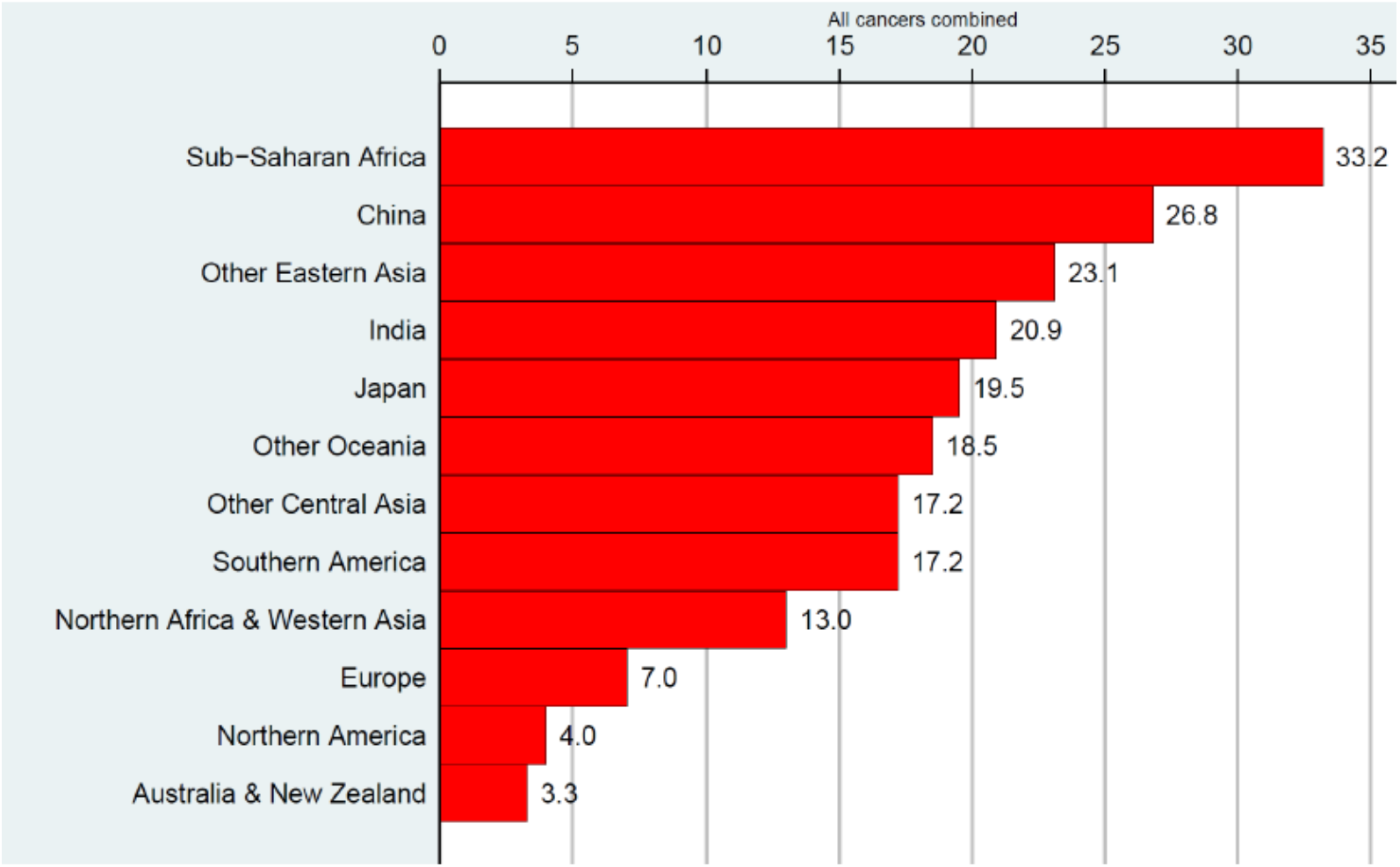
Cancer and infection: attributable fraction by major world region/country



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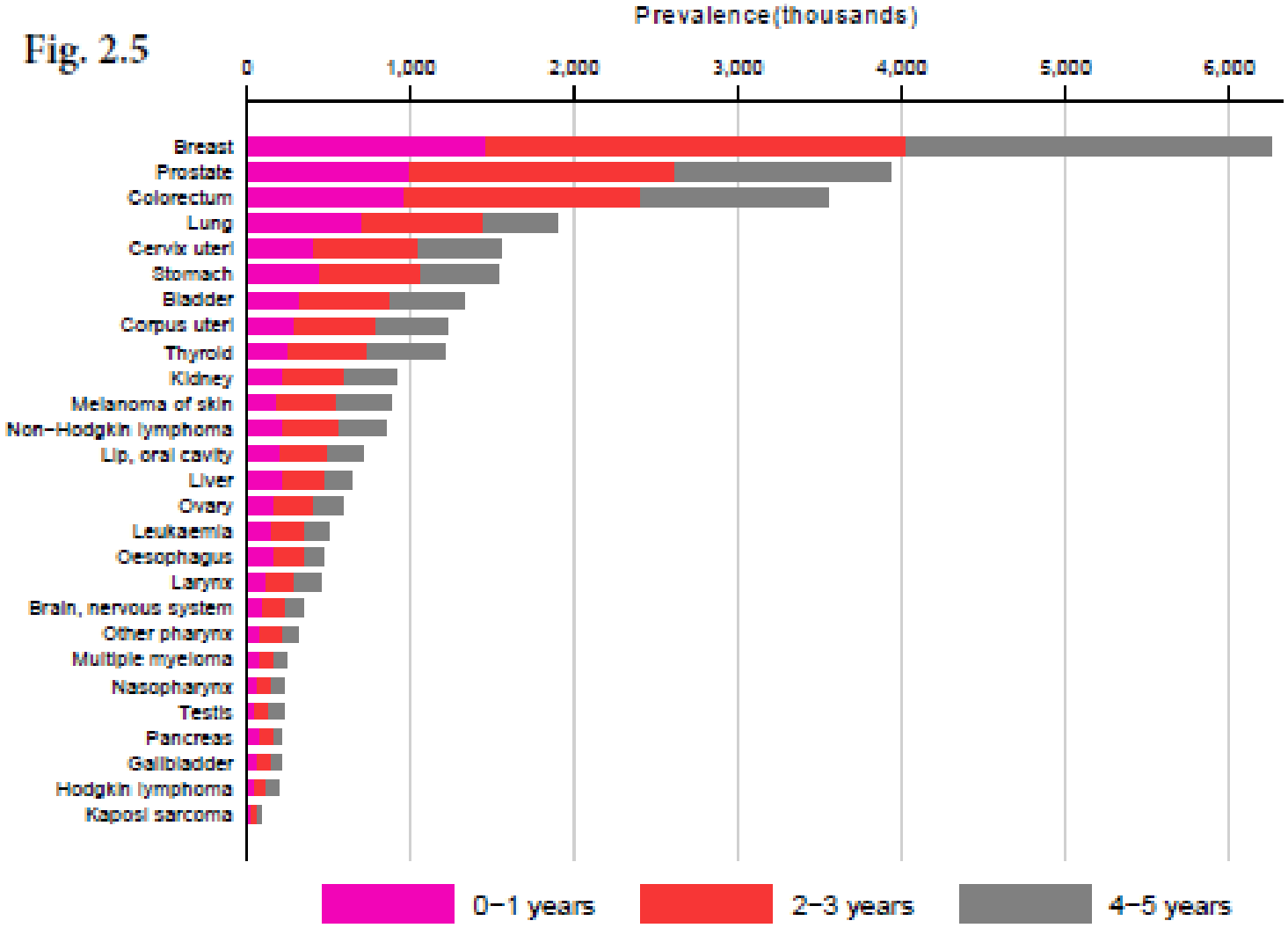
Source: De Martel et al, *Lancet Oncol* 2012

5-year prevalence by cancer site age 15+ (2012 GLOBOCAN)

Fig. 2.5



KEY MESSAGES AND RECOMMENDATIONS

Need for cancer registries and mortality data

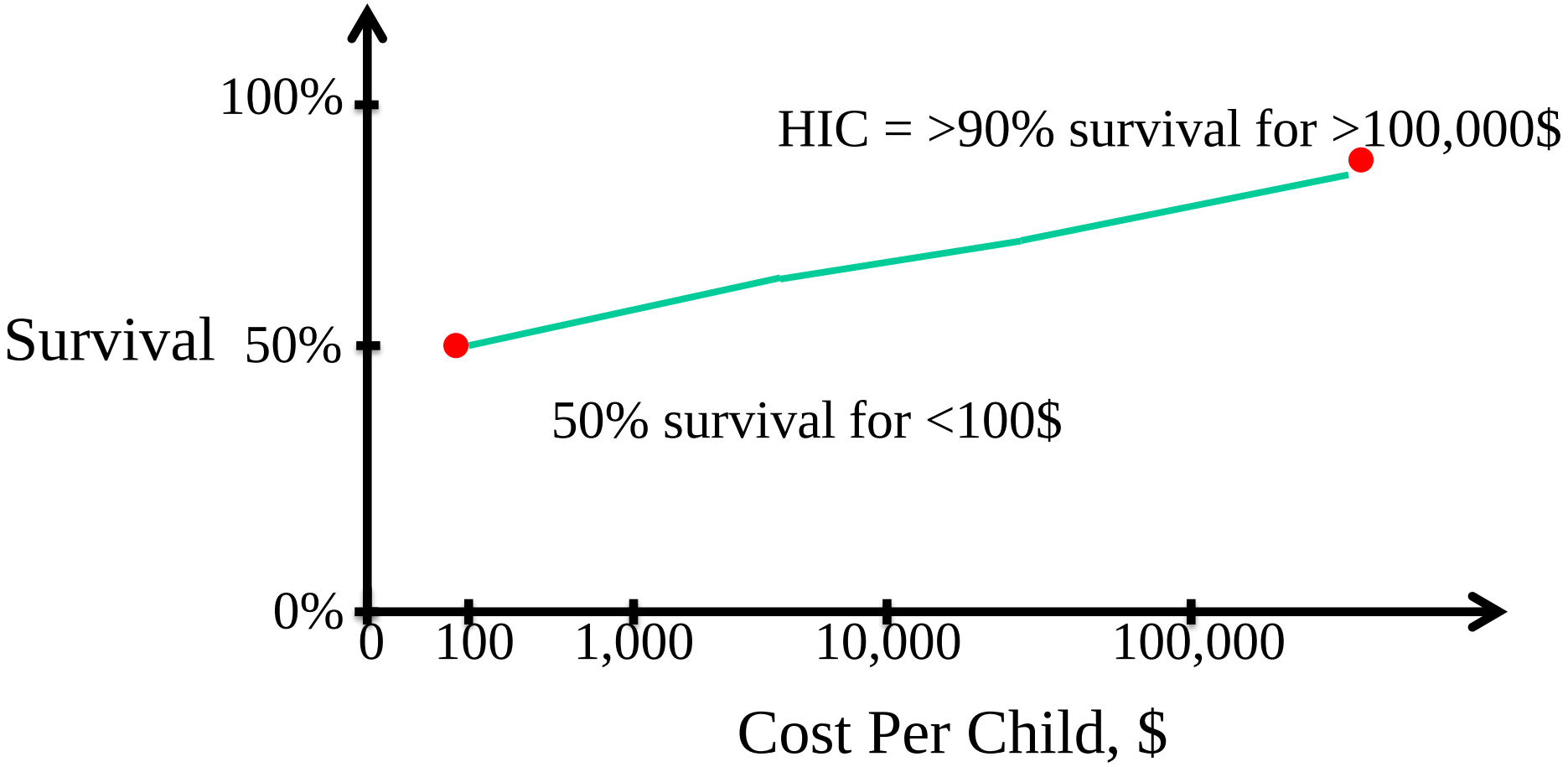
Cancer Incidence in Five Continents—5th edition (IARC)

Percentage of population covered:

- North America: 83%
- South America: 6%
- Asia: 4%
- Africa: 1%

Quality matters

Effective interventions at a range of prices: childhood ALL treatment



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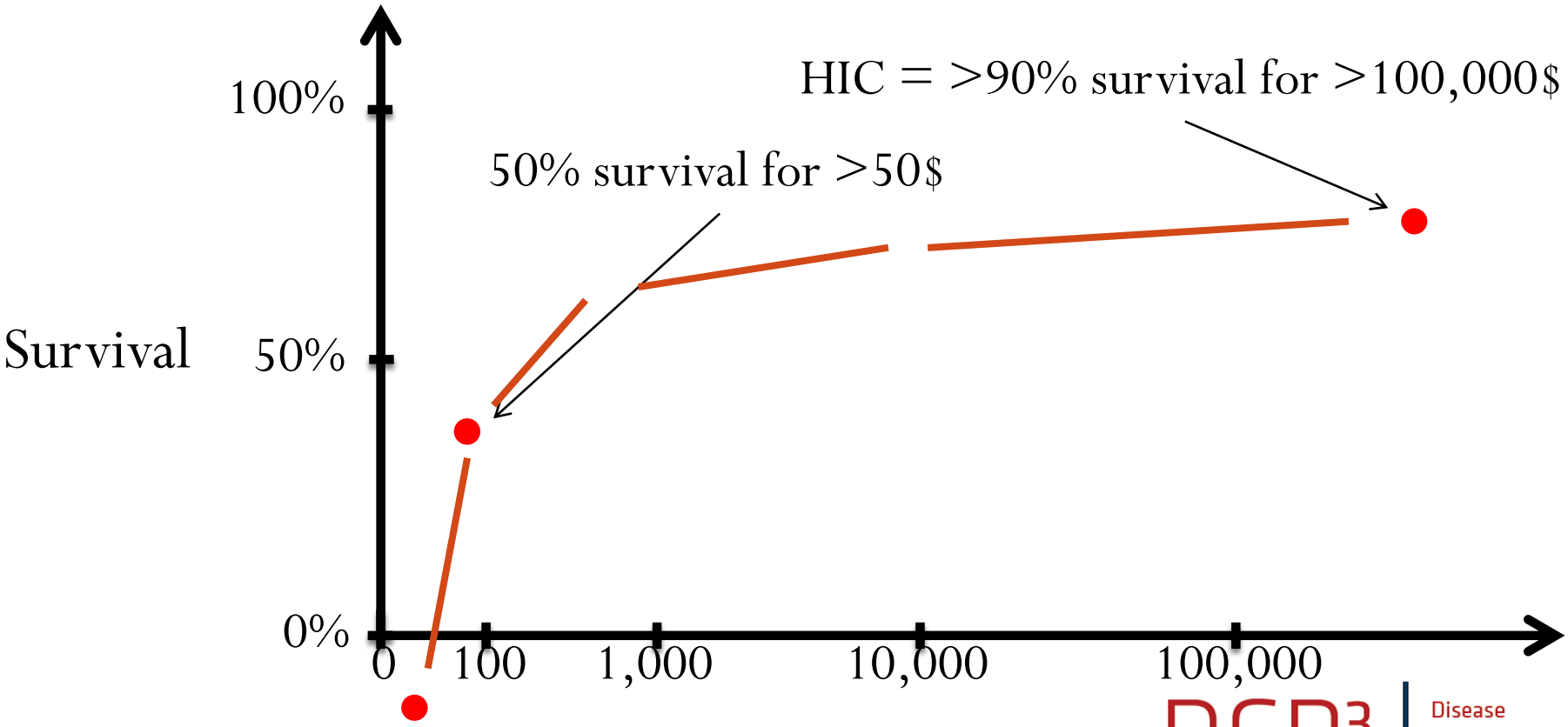
Treating Childhood Cancer Does Not Have to be Expensive



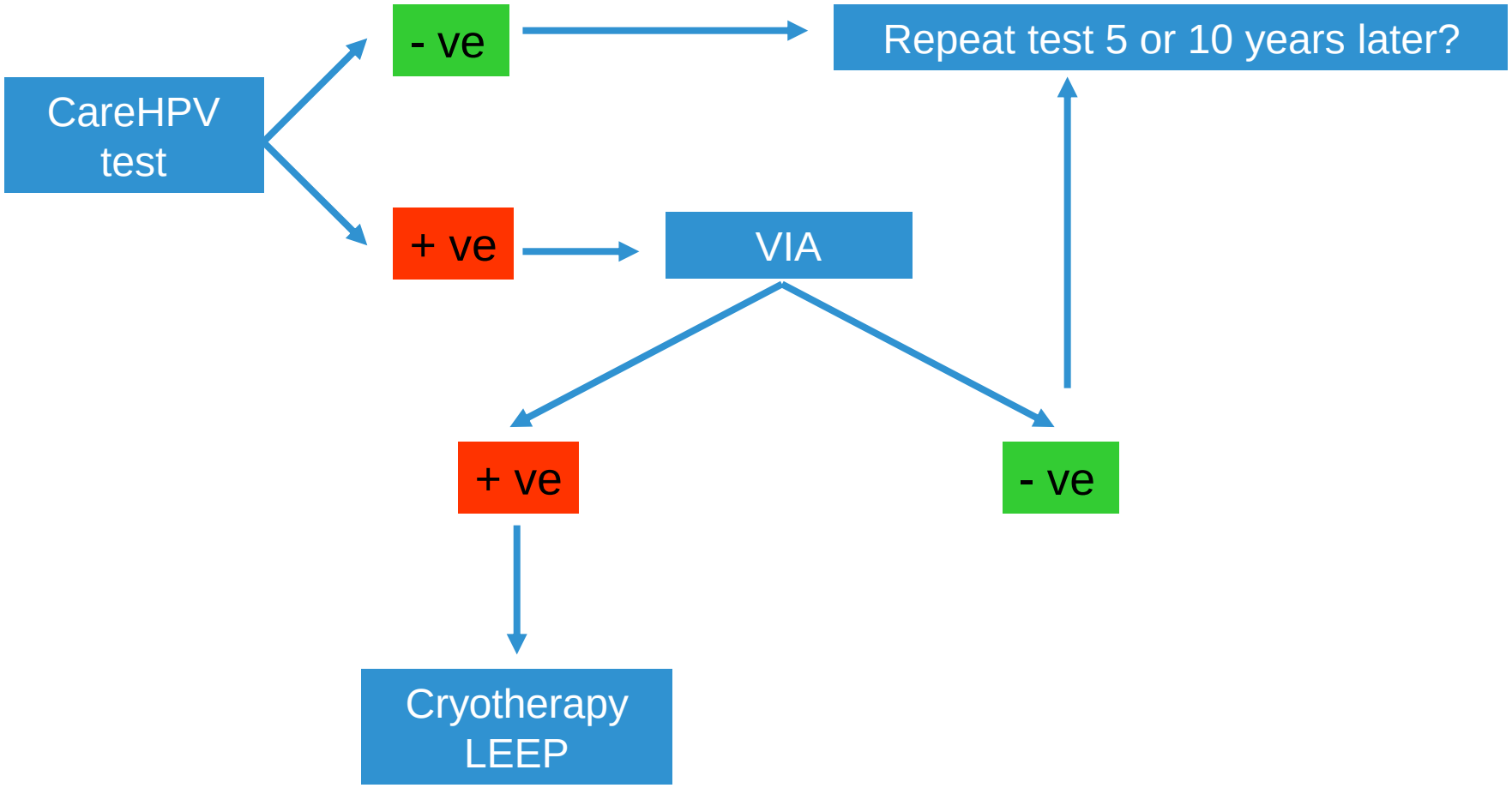
DCP3 Disease Control Priorities

economic evaluation for health

"Resource-appropriate" interventions

		BASIC	LIMITED	ENHANCED
EARLY DETECTION	Public Education and Awareness	• 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)	• 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	• Regional awareness programs regarding breast health linked to general health and women's health programs
	Detection Methods	• Clinical history and CBE	• Diagnostic breast US +/- diagnostic mammography in women with positive CBE • Mammographic screening of target group[1]	• Mammographic screening every 2 years in women ages 50-69[1] • Consider mammographic screening every 12-18 months in women ages 40-49[1]
	Evaluation Goal	• Breast health awareness regarding value of early detection in improving breast cancer outcome	• Downsizing of symptomatic disease	• Downsizing and/ or downstaging of asymptomatic disease in women in highest yield target groups

Cervical cancer: reduce deaths by 80% with screening and vaccination



Futile treatment

- Futile cancer treatment wastes resources (usually out-of-pocket) and should not be financed by governments or insurance programs.

RECOMMENDATIONS

1. Overall goal

National goal for all countries:

- 30% reduction in risk of cancer death before age 70 by 2030
- 50% reduction by 2050—halving the risk in a generation

Start all components of cancer control within 1 year (more from Prabhat)

2: Basic Cancer Control Package

- tobacco control
- HBV vaccination (and other preventive measures for liver cancer)
- HPV vaccination
- screening and treatment for precancerous cervical lesions
- diagnosis and treatment of breast cancer
- treatment for highly curable childhood cancers
- palliative care, including, at a minimum, opioid medicines for pain control

Feasible and cost-effective treatments vary by environment

Environment Income level	Basic Low income	Limited Rural – middle income	Enhanced Urban – middle income	Maximal High income
Surgery	Very scarce	Scarce	Available	Widely avail.
Radiation	Very scarce	Scarce	Available	Widely avail.
Endocrine	Tamoxifen	Tamoxifen	Aromatase inhib; LH-RH agonists	Full range of hormone treatment
Chemotherapy	Barely feasible (labs for bloodwork very scarce)	"Classical" regimes cost-effective	Newer generation drugs cost-effective	Some on-patent drugs may be cost-effective
Screening	Opportunistic feasible	Opportunistic &"campaign-style" feasible	Organized feasible	Organized feasible

Cost-effective Interventions in LMICs: Prevention

Environment	Cost-effective and feasible interventions
Basic	Tobacco taxation (many cancers) HPV vaccination (depending on vaccine price: cervical) Hepatitis B vaccination at birth (liver cancer) Better post-harvest storage (aflatoxin reduction: liver cancer)
Limited	Reduce unsafe injections (liver cancer) Educate to prevent liver flukes in high-prevalence regions (liver)
Enhanced	Screen blood donors (liver cancer)

Cost-effective Interventions in LMICs: Screening

Environment	Cost-effective and feasible interventions
Basic (opportunistic)	Clinical breast exam (& treat) Visual inspection cervix with acetic acid (& treat)
Limited (opportunistic or campaign)	Clinical breast exam Rapid HPV DNA test and treat (2 visits) depending on price of test Visual inspection oral cancer in high-prevalence regions
Enhanced (organized)	Mammography (organized) DNA test or cytology (cervical) Fecal immuno-chemical (colon)

Cost-effective Interventions in LMICs: Treatment

Environment	Cost-effective and feasible interventions
Basic	Surgery (most cancers) where available Radiation where available Cryotherapy (cervical cancer) Tamoxifen (breast cancer)
Limited	Radiation more broadly available Chemotherapy: EC or AC (breast); 5-FU (colorectal)
Enhanced	Chemotherapy: taxanes, trastuzumab (breast); cisplatin (cervical); FOLFOX (colorectal); brachytherapy and chemotherapy (oral);

3. Domestic finance

LMICs allocate 5% of health budget to cancer, assuming:

- LMICs spend 1.7-2% on health currently
- Predicted to increase 1% annually next 20 years
- Growing per capita income will increase absolute amounts
- Some funding from tobacco taxes

4. Development assistance

5% of bilateral and international development assistance for health to be allocated to cancer for:

- Global and regional knowledge sharing networks
- Economic research
- Implementation science
- For LICs, one-time scale-up costs

5. Research

National responsibility for each country, not only global. Priorities are:

- Implementation science—what works in the local context
- Epidemiologic studies to understand local risk factors
- Economic research, including costing programs and specific interventions

Dissemination

- *UICC Cape Town: November 2013*
  - *Hosted by first lady of Zambia*
- India – mini-launch at Tata Memorial-end 2014
- India and China: early 2015 (NCI collab)
- Latin America: early 2015 (NCI collab)
- Africa: uncertain

Volume advisory group

Follow-Up

- Economic studies
  - Costing out major program components, developing models to do so
  - Specific emphases on childhood cancers
- National cancer planning
  - Work with specific countries to develop plans and funding