



Our Mission: to use a multidisciplinary approach to improve cancer prevention and control in Africa.



Can we develop cost –effective Cancer interventions?

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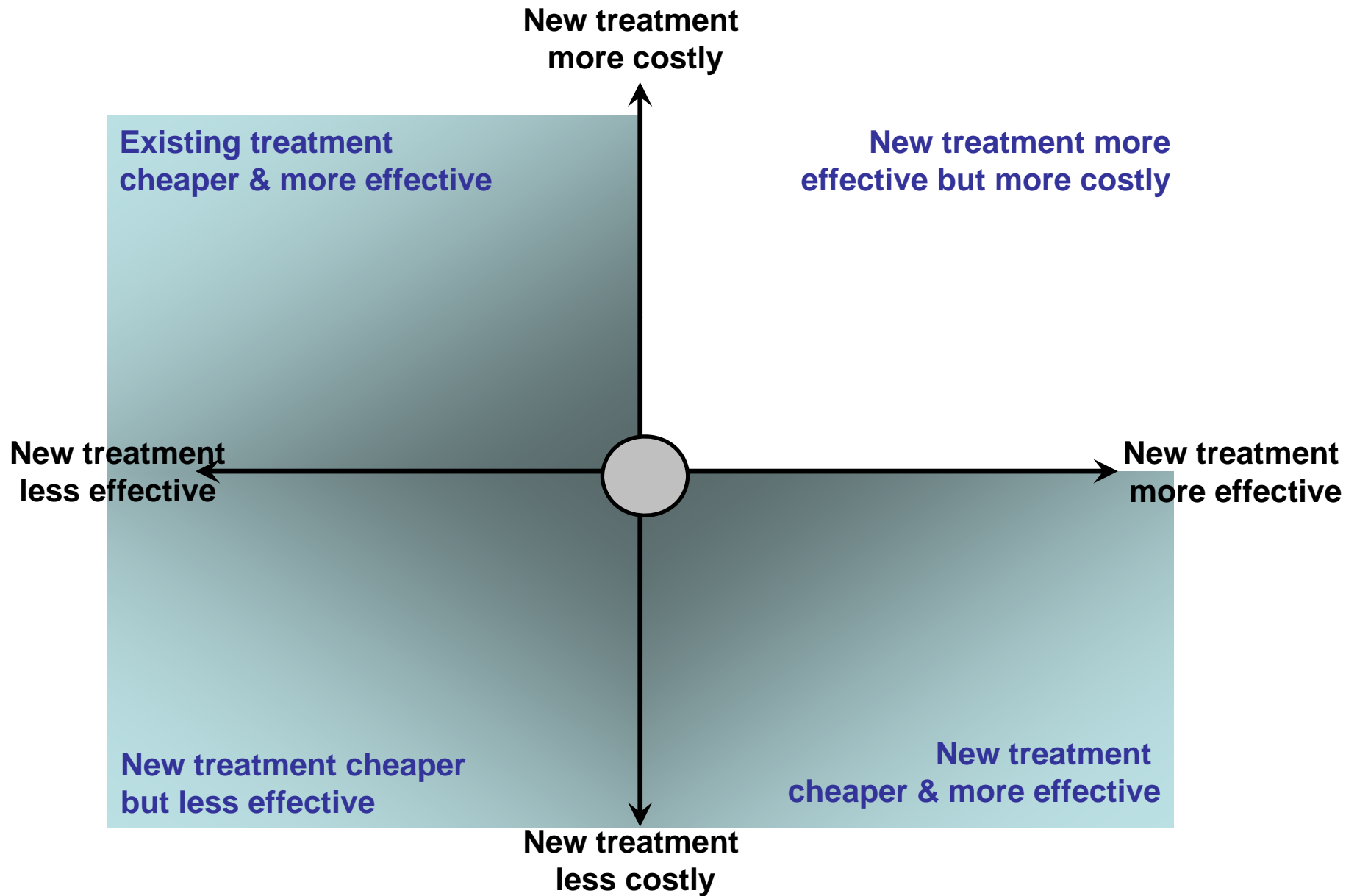
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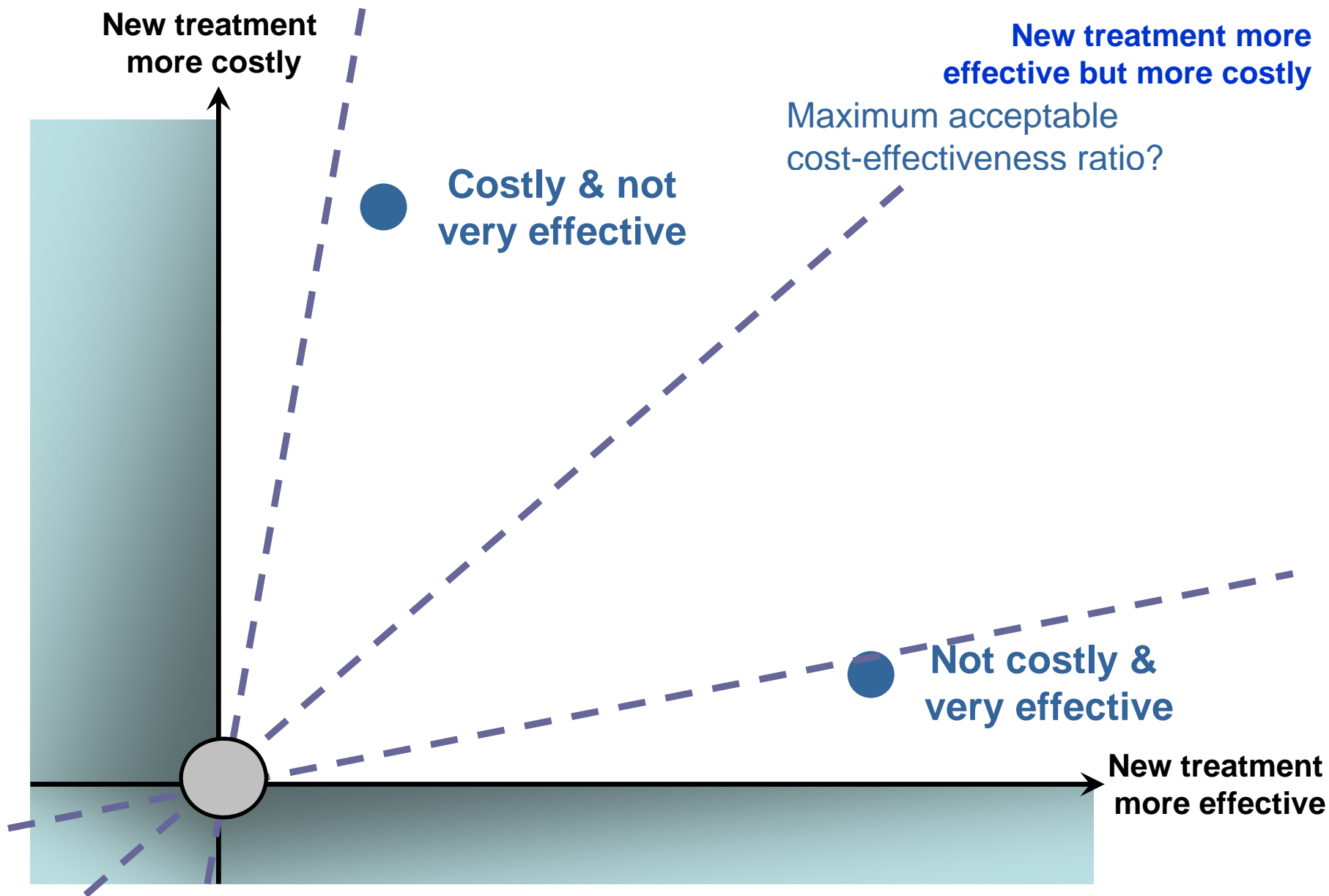
The economic perspective

- Starting point: Scarce (health care) resources
- Objective: Use these to maximise health gain
- Method: Compare health interventions
 - Assess their net costs
 - Assess their health benefits
 - Implement interventions with highest benefits in relation to cost
- This is the cost-effectiveness approach

The cost-effectiveness plane



The cost-effectiveness plane



Resource constraints (Int. \$s)

	Gross National Income per person, 2005	Total health expenditure per person, 2003	Govt. health expenditure per person, 2003	People per nurse, 2002
Tanzania	730	29	16	2,703
Nigeria	1,040	51	13	588
Rwanda	1,320	32	14	2,381
Uganda	1,500	75	23	1,639
Ghana	2,370	98	31	1,086
Botswana	10,250	375	238	377
China	6,600	278	101	952
UK	32,690	2,389	2,047	83
USA	41,950	5,711	2,548	107

Evidence on cost-effectiveness

- *WHO-CHOICE*

*CHO*osing Interventions that are *Cost Effective*

- A global and regional database on the cost-effectiveness of around 700 interventions
 - Valuable tool for planning and prioritization of services at national level
- Standard methods used to measure costs and outcomes
 - Cost per Disability Adjusted Life Year (DALY)



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- Countries
- Health topics
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- Research tools

WHO sites

CHOosing Interventions that are Cost Effective (WHO-CHOICE)

What is WHO-CHOICE?

Health interventions

Costs and prices

Demography and epidemiology (WHO Regions)

Cost-effectiveness results

Tool kit

Site map

CHOosing Interventions that are Cost Effective (WHO-CHOICE)

[WHO](#) > [WHO sites](#) > [CHOosing Interventions that are Cost Effective \(WHO-CHOICE\) Results](#)

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AFR D

The results for AFR D are available for the following diseases and risk factors:

- :: [Maternal and neonatal health](#)
- :: [Malaria](#)
- :: [Tuberculosis](#)
- :: [Childhood Diseases](#)
- :: [Tobacco Use](#)
- :: [Hazardous Alcohol Use](#)
- :: [Schizophrenia](#)
- :: [Bipolar disorder](#)
- :: [Depression](#)
- :: [Epilepsy](#)
- :: [Blindness](#)

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The cost-effectiveness of controlling tobacco use

Interventions	Cost per million people	DALYs averted per year per million people	Average Cost per DALY averted
High excise tax on tobacco products	\$160,000	2,769	\$58
Comprehensive ban on tobacco advertising	\$170,000	180	\$931
Clean indoor air law enforcement	\$380,000	93	\$4,077
Nicotine replacement therapy	\$1,860,000	216	\$8,603

WHO-CHOICE Africa D region

Is that good value for money?

Depends on:

- 1) What else could be done with resources
- Support for breastfeeding mothers \$11 per DALY averted
- Community newborn care package \$9 per DALY averted
- Measles vaccination (80% cover) \$33 per DALY averted
- Treat smear+ tuberculosis \$7 per DALY averted
- Cataract extraction & lens implant \$89 per DALY averted
- Insecticide-treated bed nets (ITN) \$29 per DALY averted

- 2) What resources are available:
 - Level of national income
 - Priority given to health care

Number of cancer deaths and DALYs lost to cancer

Cancer site	Low- and middle-income countries		High-income countries	
	Deaths	DALYs lost	Deaths	DALYs lost
Trachae, bronchus & lung cancers	771,000	10,701,000	456,000	5,397,000
Stomach cancer	696,000	9,616,000	146,000	1,628,000
Liver cancer	505,000	7,945,000	102,000	1,223,000
Esophageal cancer	380,000	5,252,000	58,000	702,000
Colorectal cancer	357,000	5,060,000	257,000	3,175,000
Breast cancer	317,000	5,527,000	155,000	2,509,000
Cervical cancer	218,000	3,799,000	17,000	319,000
Total (all malignant neoplasms)	4,955,000	74,752,000	2,068,000	25,886,000

Source: Martin L. Brown, Etal . "Health Service Interventions for Cancer Control in Developing Countries." 2006. Disease Control Priorities in Developing Countries (2nd Edition),ed. , 569-590. New York: Oxford University Press. DOI: 10.1596/978-0-821-36179-5/Chpt-29.

Cost-effectiveness of breast cancer treatment & palliative care in Africa

Stage:	Treatment	Cost per DALY averted
Stage 1	Lumpectomy, external radiotherapy	\$78
Stage 2	Lumpectomy, external radiotherapy	\$324
Stage 3	Adjuvant chemotherapy	\$389
Stage 4	Systemic chemotherapy, endocrine treatment (palliative)	\$4,986

M Groot et al. Costs & health effects of breast cancer interventions in epidemiologically different regions of Africa, North America, and Asia. *The Breast Journal*, 266, 12 (Supp 1): S81-S90

Is it ethically justifiable to develop low cost, moderately effective cancer treatments?

- Modulated-dose oral chemo regimes for BC?
- Tamoxifen for breast lumps clinically described as cancer?

Conclusions

- When resources are scarce, essential to make best use of them
- Cost-effectiveness provides a way of doing this
 - Methods agreed
 - Increasing evidence base
 - But, so far, limited attention to cancer
- Looking to future:
 - Burden of disease projections should help prioritise research efforts
 - Demonstrating that resources are being used effectively should attract additional funding