

Erfolge, Enttäuschungen, Hoffnung in der Onkologie – Ist diese Krankheit zu besiegen?

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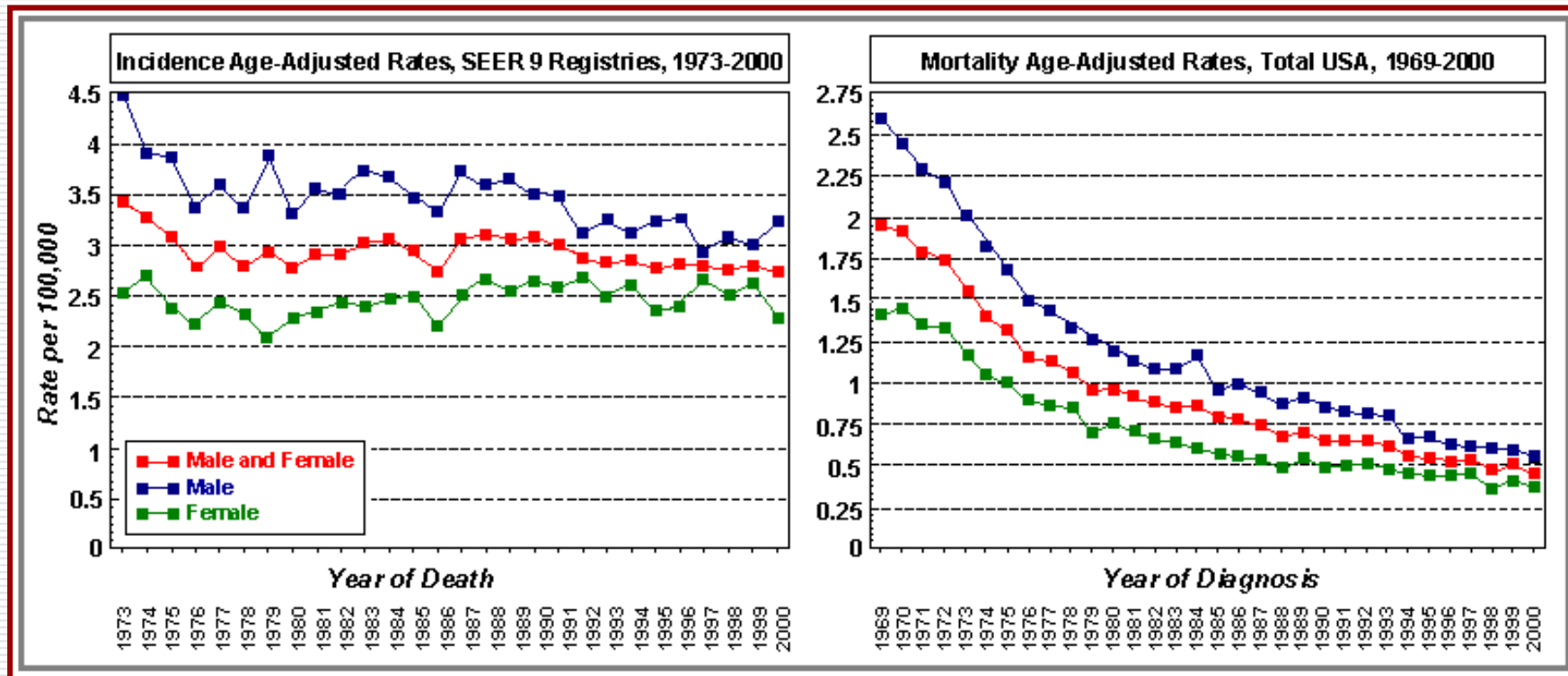
Vor 40 Jahren ...

- ❑ Brustkrebs: ca. 1/5 primär nicht operable
3/4 positive axilläre LK
Heilungsrate < 25%
- ❑ Hodentumoren: fast alle starben
(manchmal an der Therapie ...)
- ❑ Maligne Lymphome: Heilungen?
völlig unklares Bild

Heute ...

- ❑ Brustkrebs: <math><1/4</math> positive axilläre LK
Heilungsrate > 70%
- ❑ Hodentumoren: praktisch alle geheilt

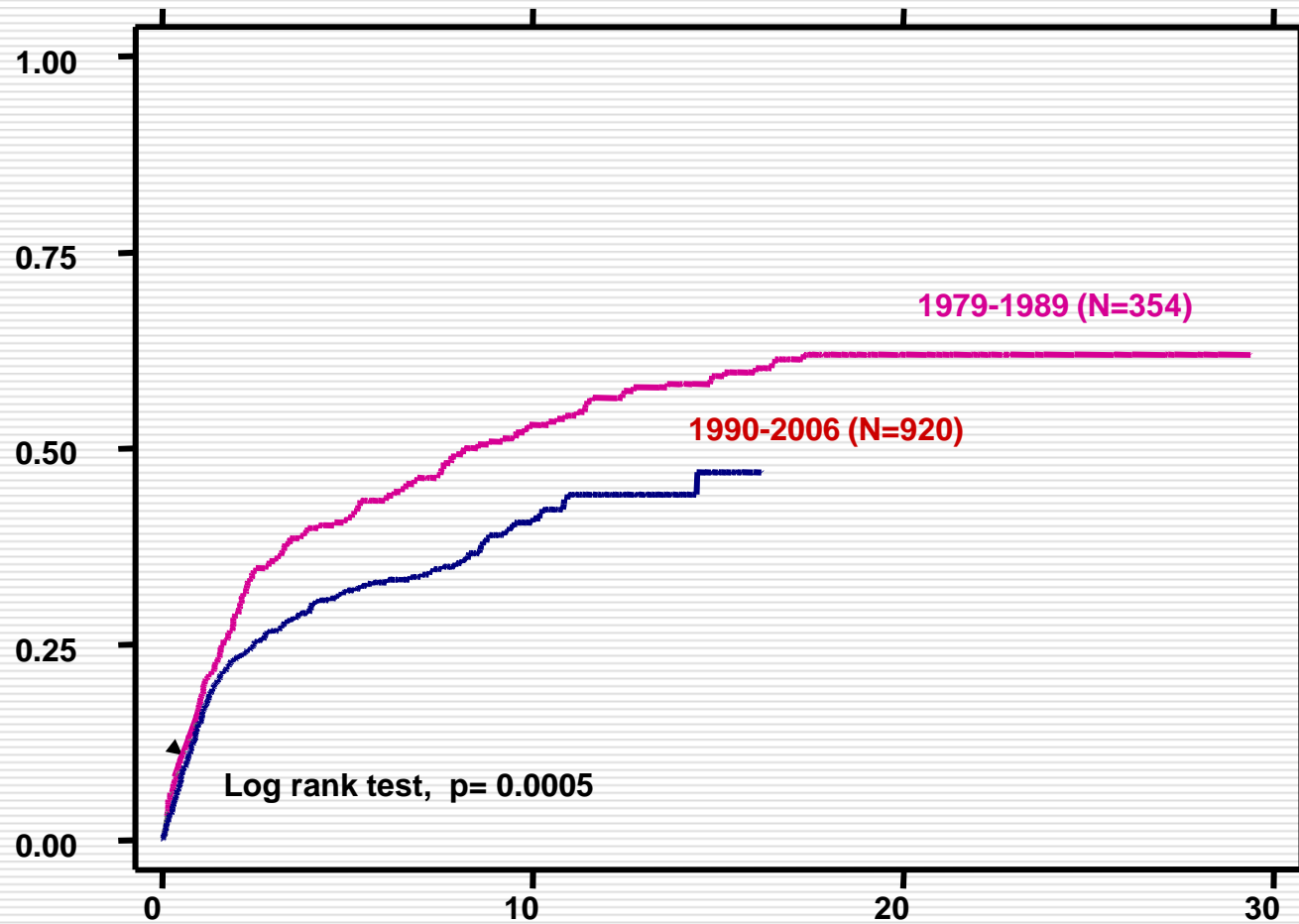
Hodgkin's Lymphoma: Incidence and Mortality in the US



http://seer.cancer.gov/faststats/html/inc_hodg.html

Mortality by treatment era

Kaplan-Meier estimates, by treatment era

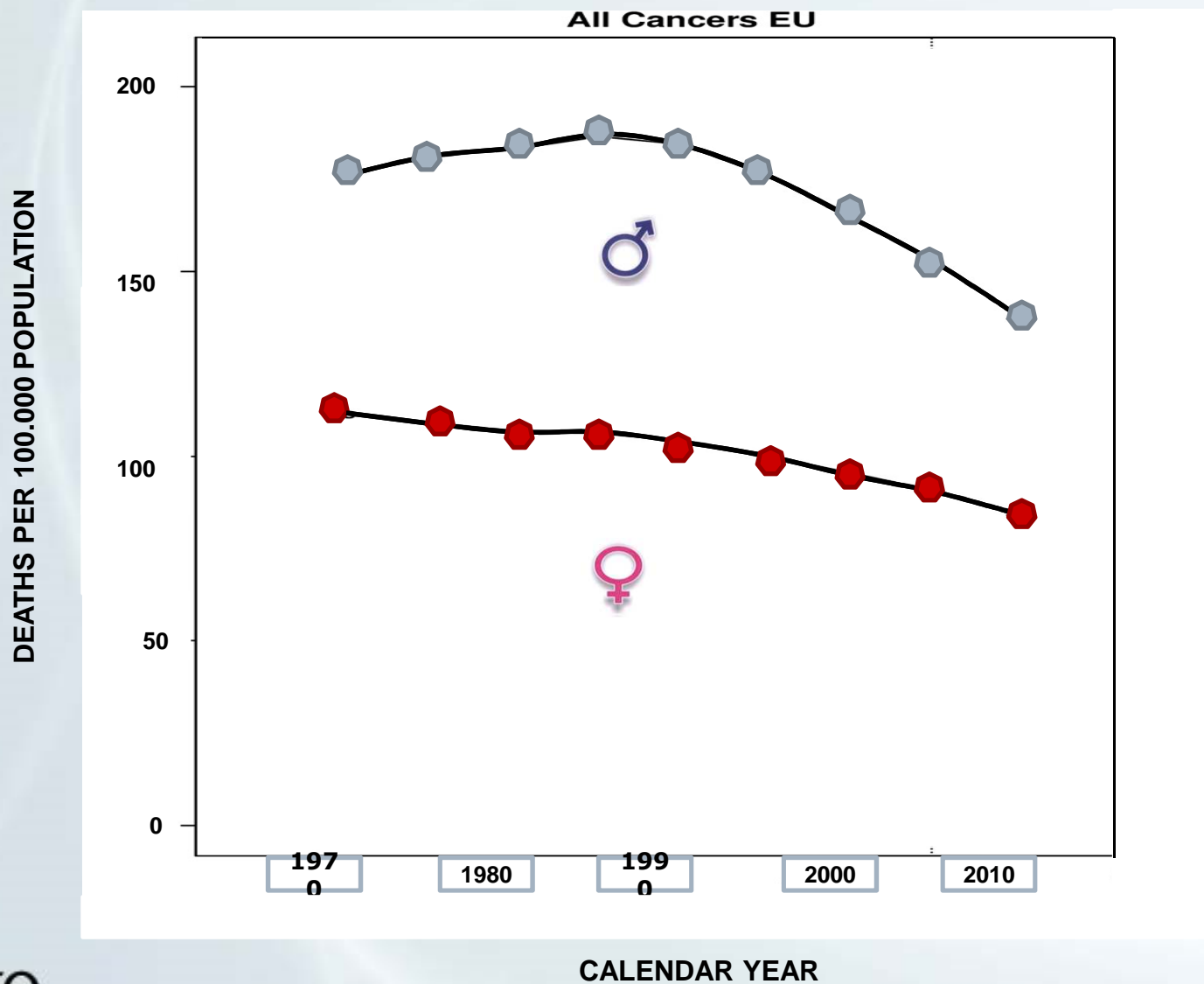


Vor 40 Jahren / Heute

bei gewissen Krebsarten haben sich aber
die Resultate wenig / nicht verbessert

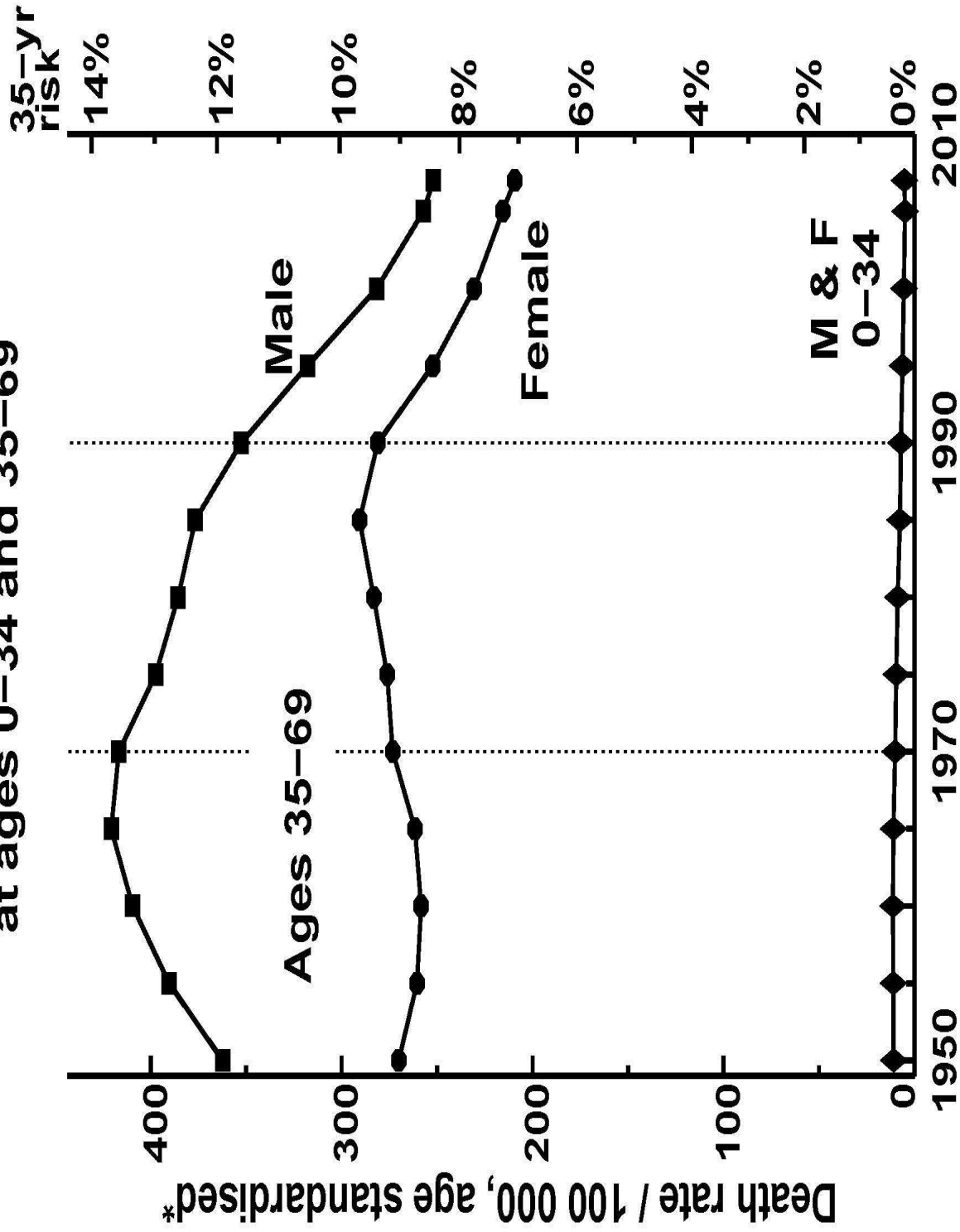
z.B. Pankreas-Carzinom
Lungenkrebs

EUROPEAN CANCER MORTALITY



United Kingdom, 1950-2007

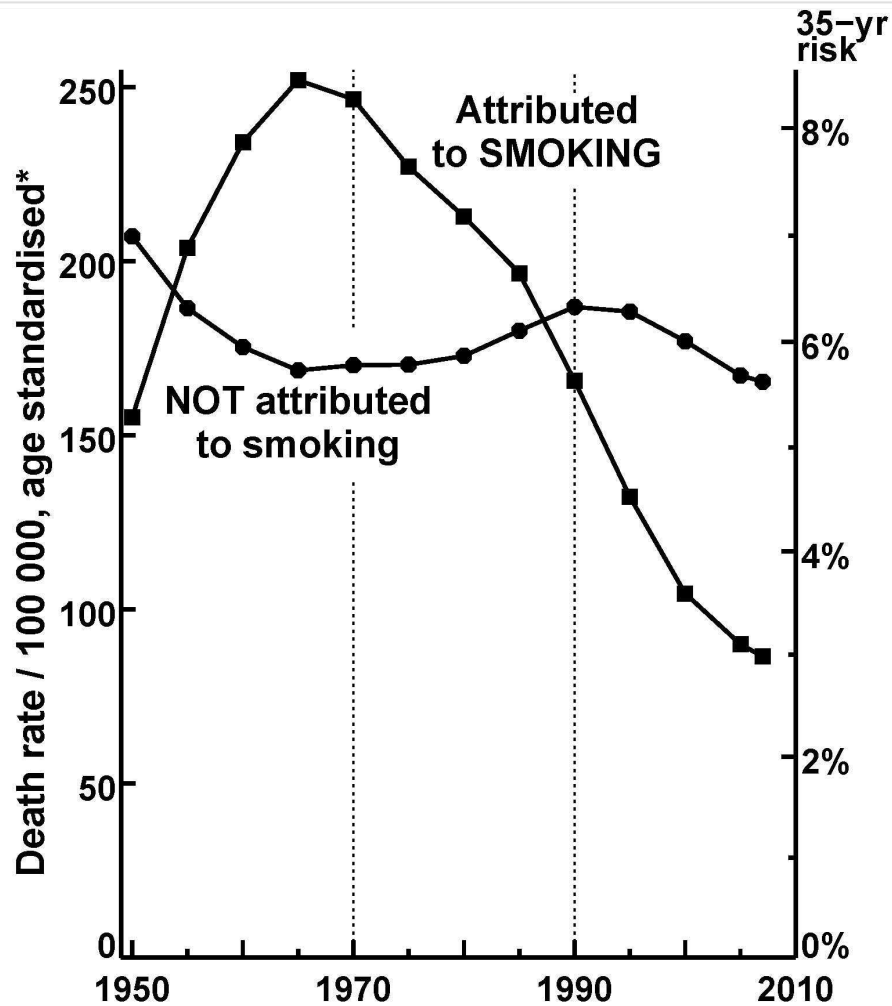
Total cancer mortality at ages 0-34 and 35-69



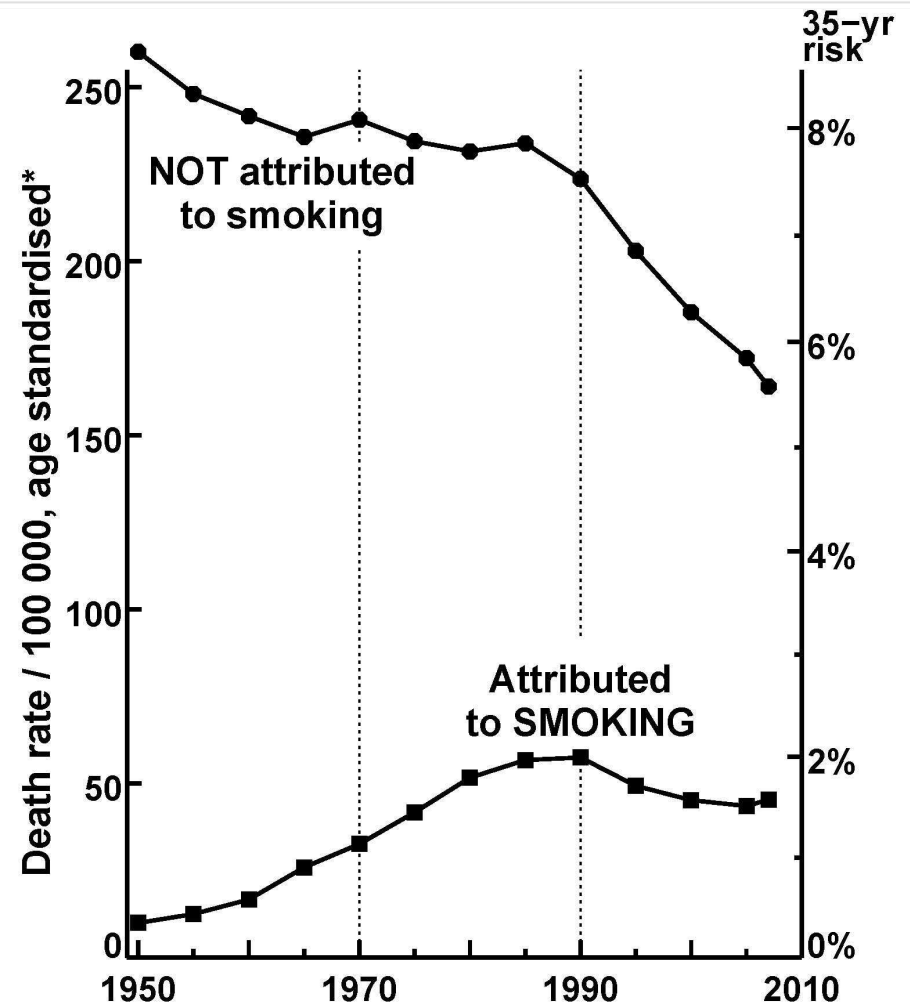
*Mean of annual rates per 100 000
 Source: WHO mortality &...

1950-2007 UK cancer mortality attributed, or not, to smoking

Male (L); lung decreasing since 1970 Female (R); breast decreasing since 1990

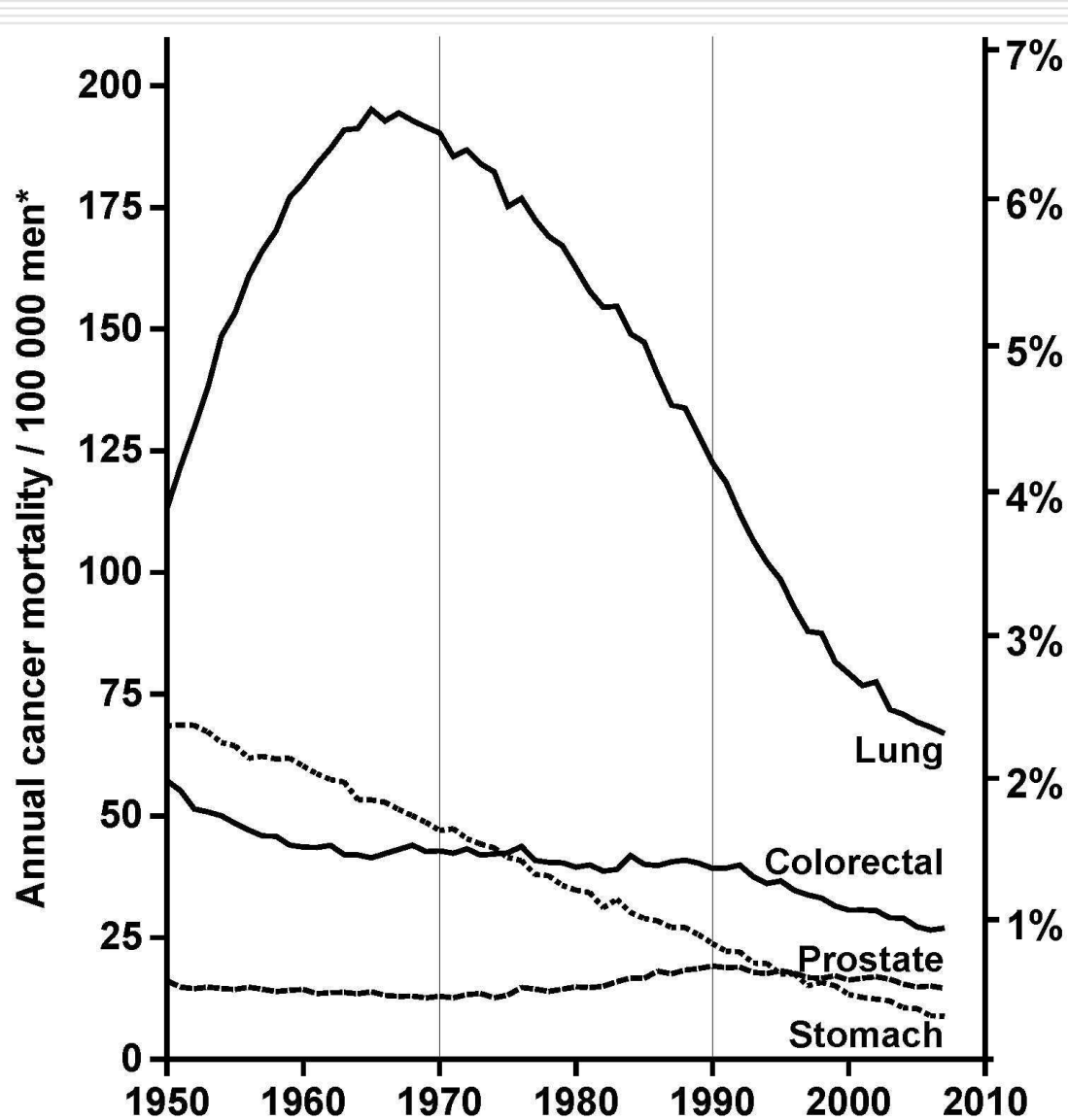


*Mean of annual rates in the seven component 5-year age groups



Source: WHO mortality & UN population estimates

UK male cancer mortality trends at ages 35-69, 1950-2007: selected sites



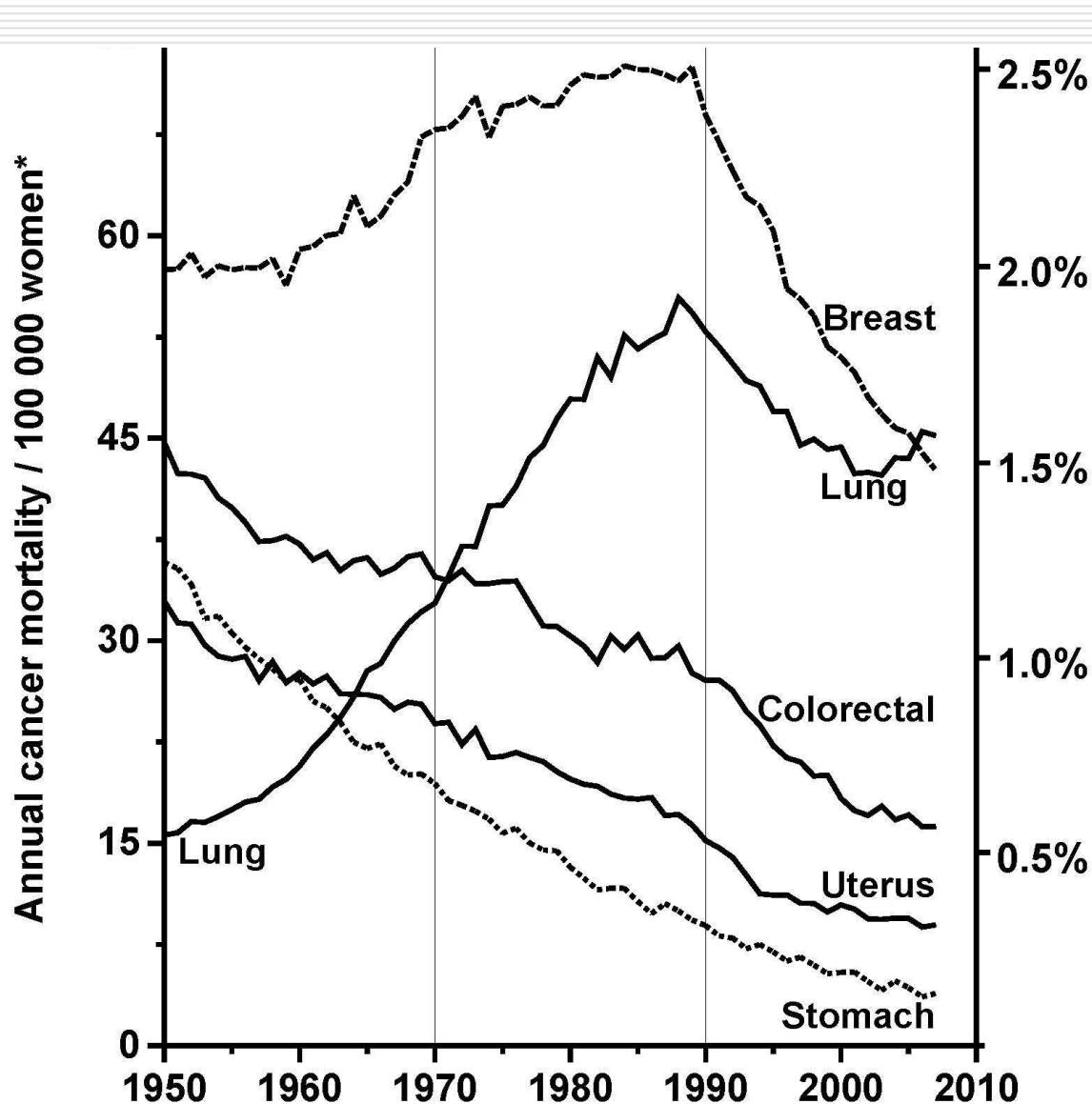
Main causes of trends in recent decades

35-year risk (%)

Lung: smoking

Colorectal: treatment
Stomach: Unknown

UK female cancer mortality trends at ages 35-69, 1950-2007: selected sites



35-year risk (%)

Main causes of trends in recent decades

Breast: treatment
Lung: cigarettes

Colorectal: treatment
Uterus: screening
Stomach: Unknown

Cancer: only bad luck?

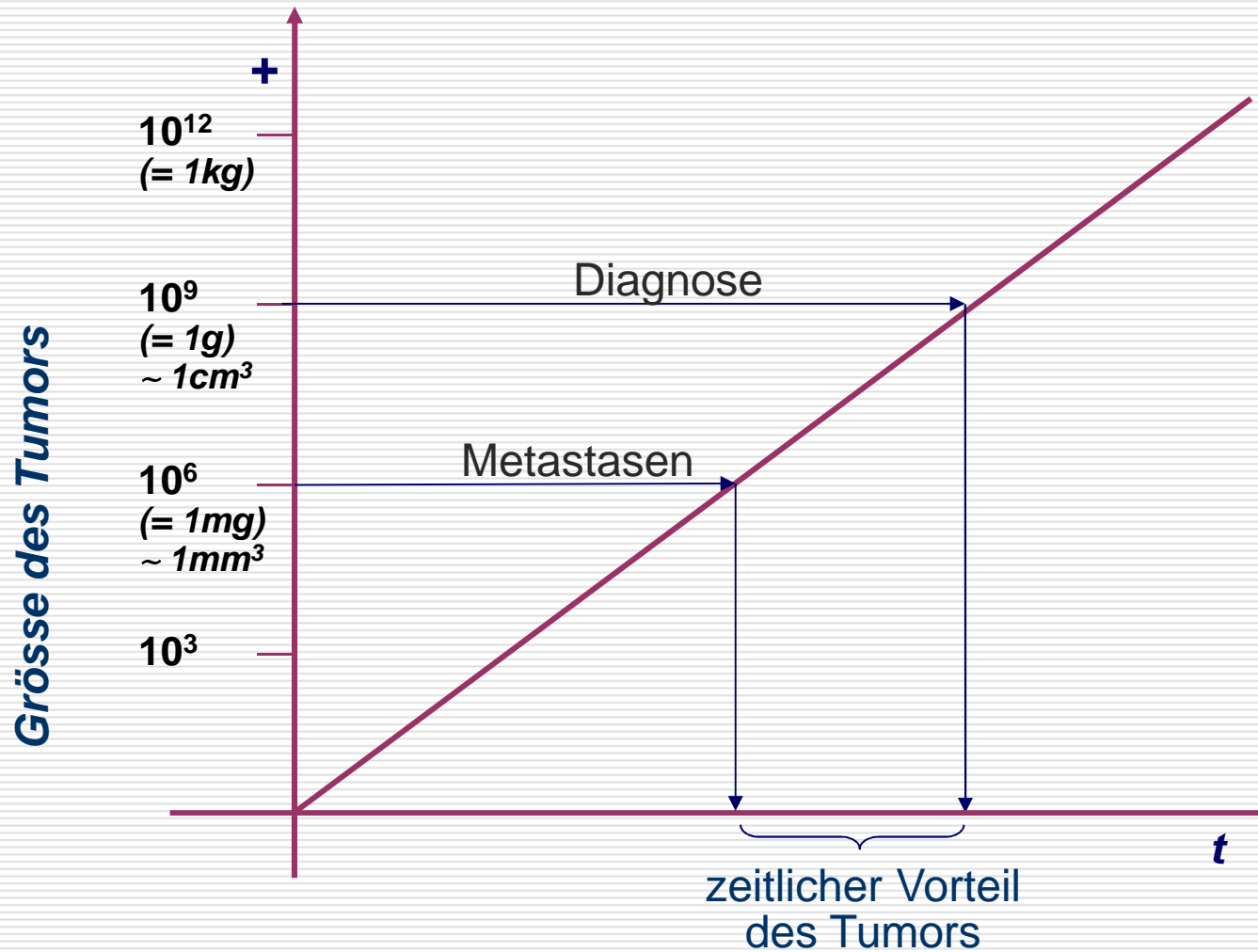
65% due to random mutations

Vogelstein et al. Science, January 3rd, 2015

Fortschritte

- genauere Diagnose
- exaktere Stadieneinteilung
- schonendere Chirurgie
- gezieltere Strahlentherapie
- besser ertragene Chemotherapien
- „intelligentere“ Medikamente
- Empathischere Behandlung der Patienten

Das Hauptproblem der Tumoren



Weitere Fortschritte verlangen

- mehr Prävention, auch medikamentlös (HBV, HPV)
- Bessere Prävention (genetik)
- frühere Diagnose (v.z. bei Gebärmutterhalskrebs)
- bessere Behandlungen

 also mehr („bessere“) Forschung

Krebsforschung in der Schweiz

□ vor 40 Jahren:

führend

(klinische Krebsforschung in Europa „fast“ bei uns geboren)

□ jetzt:

Grundlageforschung: führend

klinisch: (weniger) führend

Gründe der Veränderung

- ❑ viele klinische Studien verlangen heute sehr viele Patienten: CH zu klein, viele Patienten nicht in Zentren behandelt
- ❑ früh-klinische Studien (wenige Patienten): „Kurve verschlafen“
- ❑ SAKK als „dezentralisiertes Tumorzentrum“ nur partiell gelungen
- ❑ Finanzierung !

„Neue Medikamente“

(personalized, individuell, intelligent, etc. etc.)

- Beginn: Imatinib bei CML
- aber: dort nur eine Chromosomenabnormalität als Ursache
- bei den allermeisten Tumoren:
Dutzende von Defekten

In CH:

- ❑ wenig Prävention
- ❑ keine systematische Frühdiagnose
(aber HPV-Impfung !)
- ❑ kein nationaler Krebsplan
- ❑ Palliative Medizin noch unterentwickelt
- ❑ Kosten ↑ → Ungleichheiten ↑↑
(Prostatakrebs in GE !)

Hauptprobleme

Kosten

Entwicklungsländer

Kosten

Ausgaben weltweit für Krebsmedikamente:

2003 → 24 Mia.

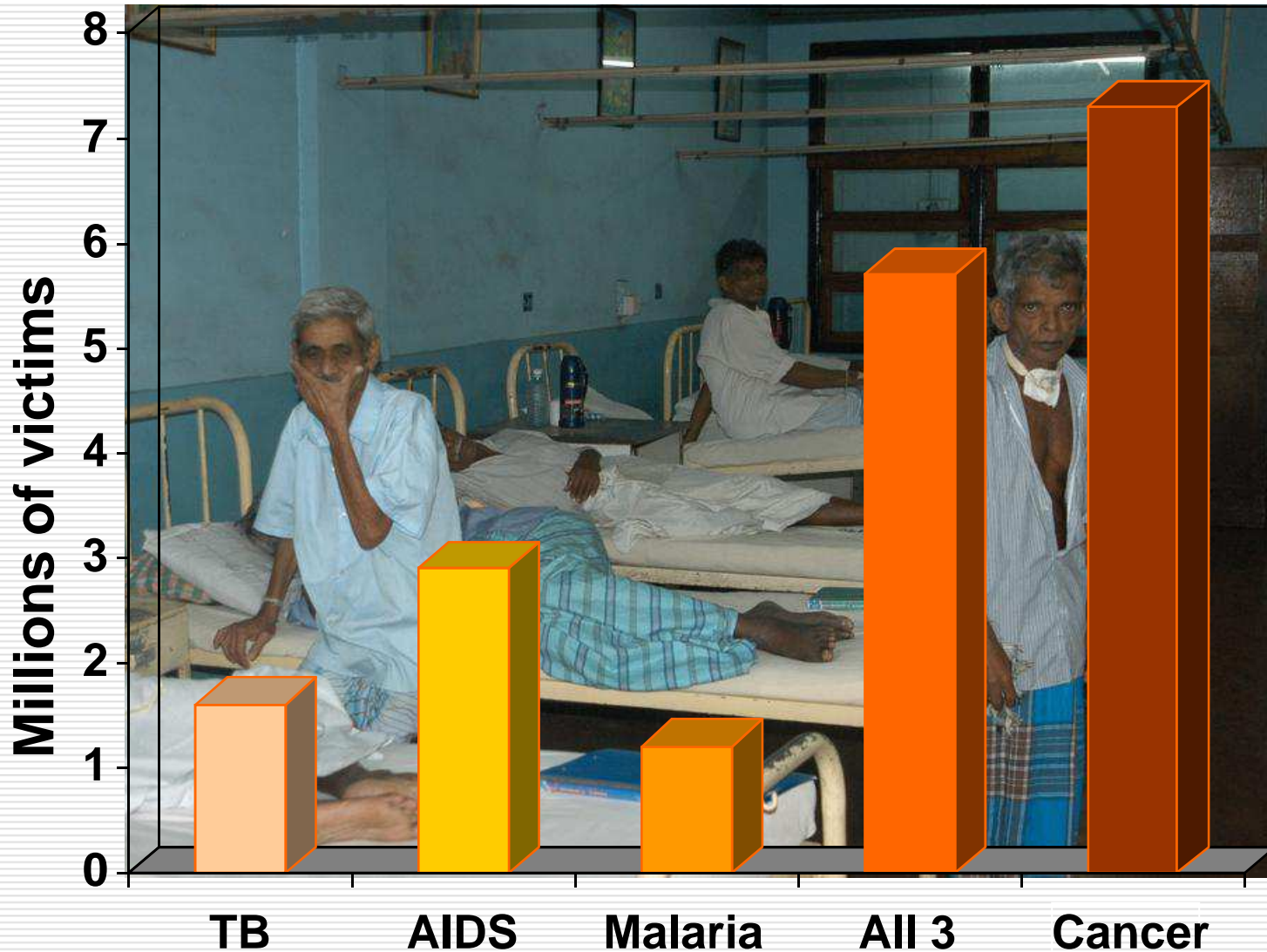
2008 → 48 Mia.

2013 → 75 Mia.

Kosten

z.t. 30-40 x mehr (z.B. adjuvante Behandlung bei Dickdarm-tumoren) ohne „entsprechende“ Verbesserung der Resultate

Cancer kills more globally!



WHO (2003)

Cancer in developing countries

1970	15% of global burden
2008	56% of global burden
2030	ca. 70% of global burden

Global burden of cancers attributable to infections in 2008: a review and synthetic analysis (IARC)

- 2008 = 12.7 Mio. new cancer cases
- attributable fraction for infectious agents: 16.1%
(2 Mio. cases)

less developed countries 22.9%

more developed countries 7.4%

Variation: New Zealand 3.3% → sub-Saharan
Africa 32.7%

H.Pylori, hepatitis B/C and HPV
account 1.9 Mio. cases (95%)

Global cancer transitions according to the Human Development Index (HDI) *2008-2030*

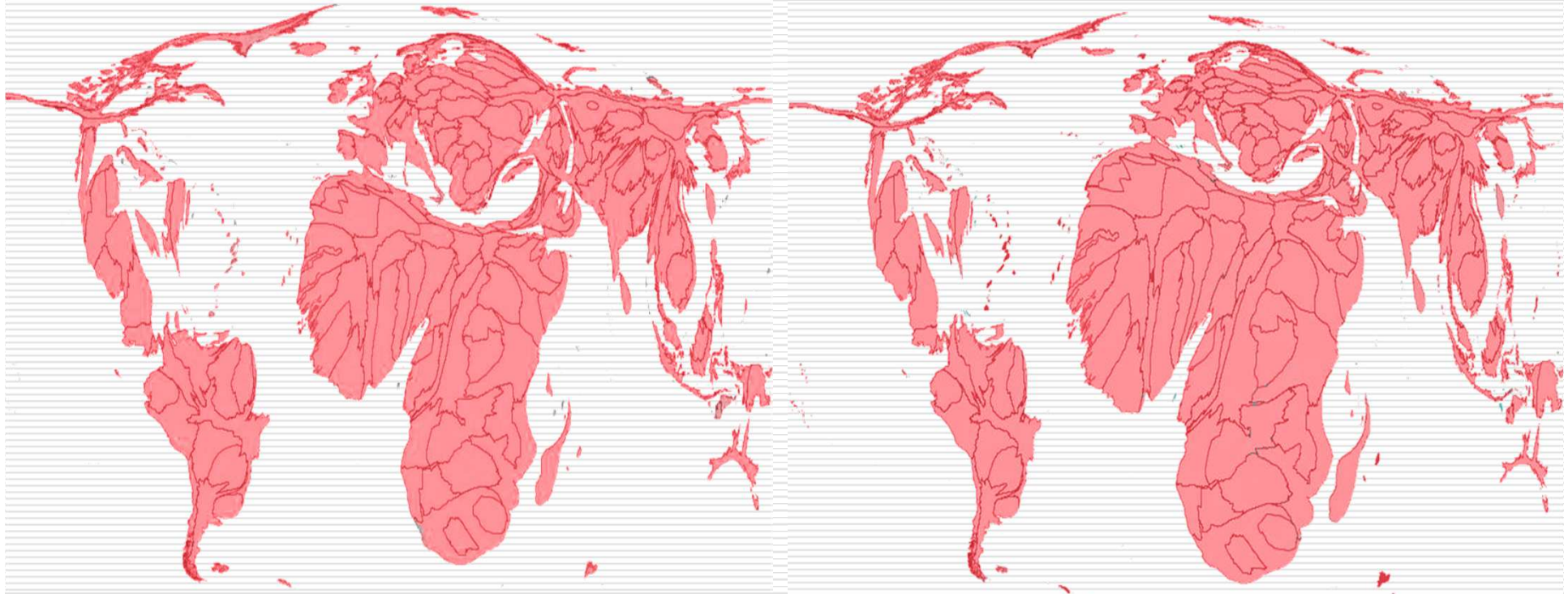
«Westernization» effect in LMI-countries with some reduction of infection-related cancers and increase of cancers associated with smoking, reproductive, dietary, metabolic and hormonal factors.

*F. Bray, A. Jemal et al.
Lancet Oncology 2012; 13:790-801*

Facet 2: Caused by infection, Cervical cancer, is today a disease of poor women

Incidence

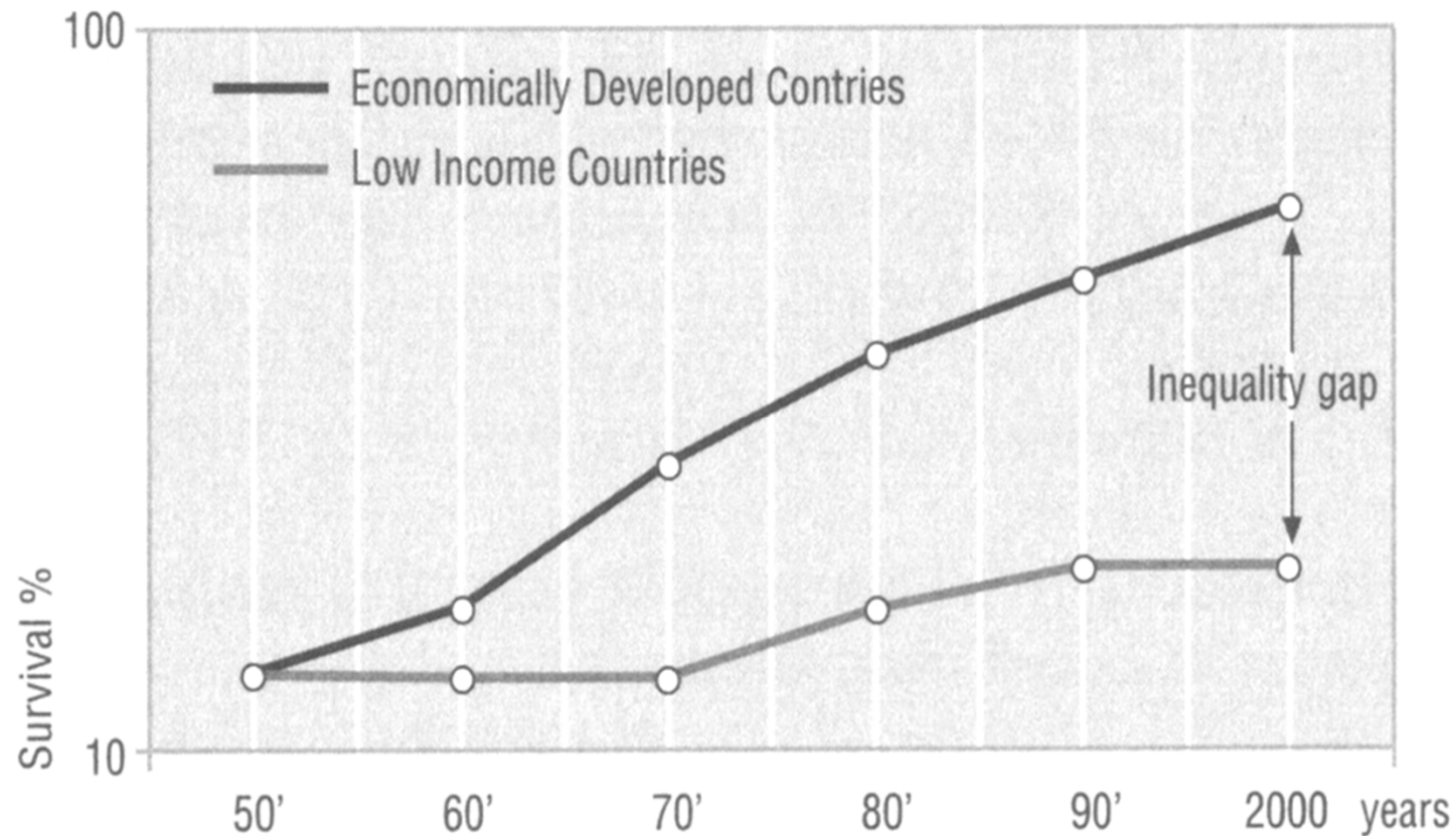
Mortality



(adjusted rate per 100,000 women)

**85% of cases occur in LMICs,
and >90% of deaths**

Survival of children with cancer in economically developed countries and in low-income countries



ACCESS TO RADIOTHERAPY

pact@iaea.org



Radiotherapy is an essential part of the treatment of cancer

Over 30 African and Asian countries have no access to radiotherapy

There is a shortfall of over 5000 radiotherapy machines in the developing world

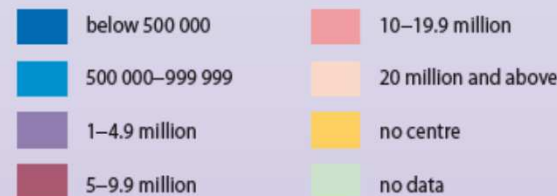
IAEA has initiated PACT to comprehensively address this urgent problem, and is moving its radiotherapy programmes to a public health model.

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Availability of treatment

Number of people served by a single radiotherapy centre (latest available data 1995–2003)



IAEA

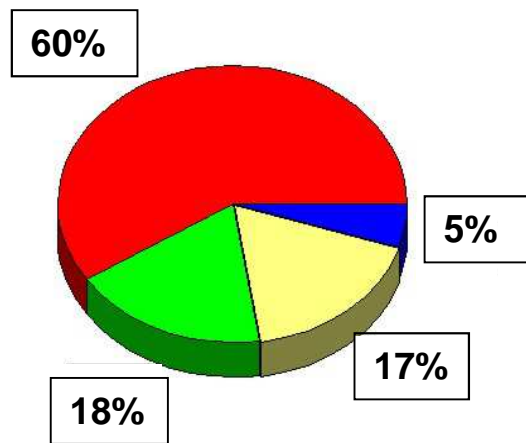
Atoms for Peace: The First Half Century
1957–2007

Programme of
Action for
Cancer
Therapy

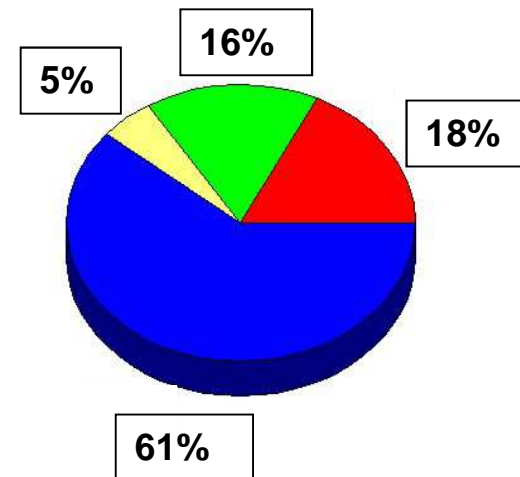
PACT

Cancer Drugs versus Cancer

Anti-Cancer Drug Sales



Cancer



USA
Japan

Europe
Rest of World

The looming disaster

	New cancer cases	deaths
2008	13 Mio.	7.6 Mio.
2030	22 Mio.	13 Mio.

UICC / WHO 2012

2012



WORLD ONCOLOGY FORUM®

**Are we winning
the war on cancer?**

26-27 OCTOBER 2012 • LUGANO, SWITZERLAND

ESO Founders: **Laudomia Del Drago and Umberto Veronesi**
ESO WOF Chair: **Franco Cavalli**

1 Question • 100 Experts • 1 Answer

FURTHER INFORMATION AVAILABLE AT www.eso.net



ESO
European
School
of
Oncology
Learning to care
30
years



THE LANCET

"We do not know
whether the
war on cancer has
been won or not."
— *Editorial*

Exclusiva scientific
media partner



Cancerworld

The ESO Magazine

Stop cancer now ! (WOF)

(1)

1. Inform people about risk factors
2. War on tobacco
3. Avoid infections (vaccines)
4. Improve early detection according to resources
- 5. Provide essential treatment package**

Stop cancer now ! (WOF)

(II)

6. Destroy barriers for opioids
- 7. Develop cost-effective treatments**
8. Dispell myths
9. Give voice to patients
- 10. Force governments to act (e.g. national cancer plan, international cooperation)**

Lancet, 4th February 2013

Accelerate finding cures for cancers that are not yet curable

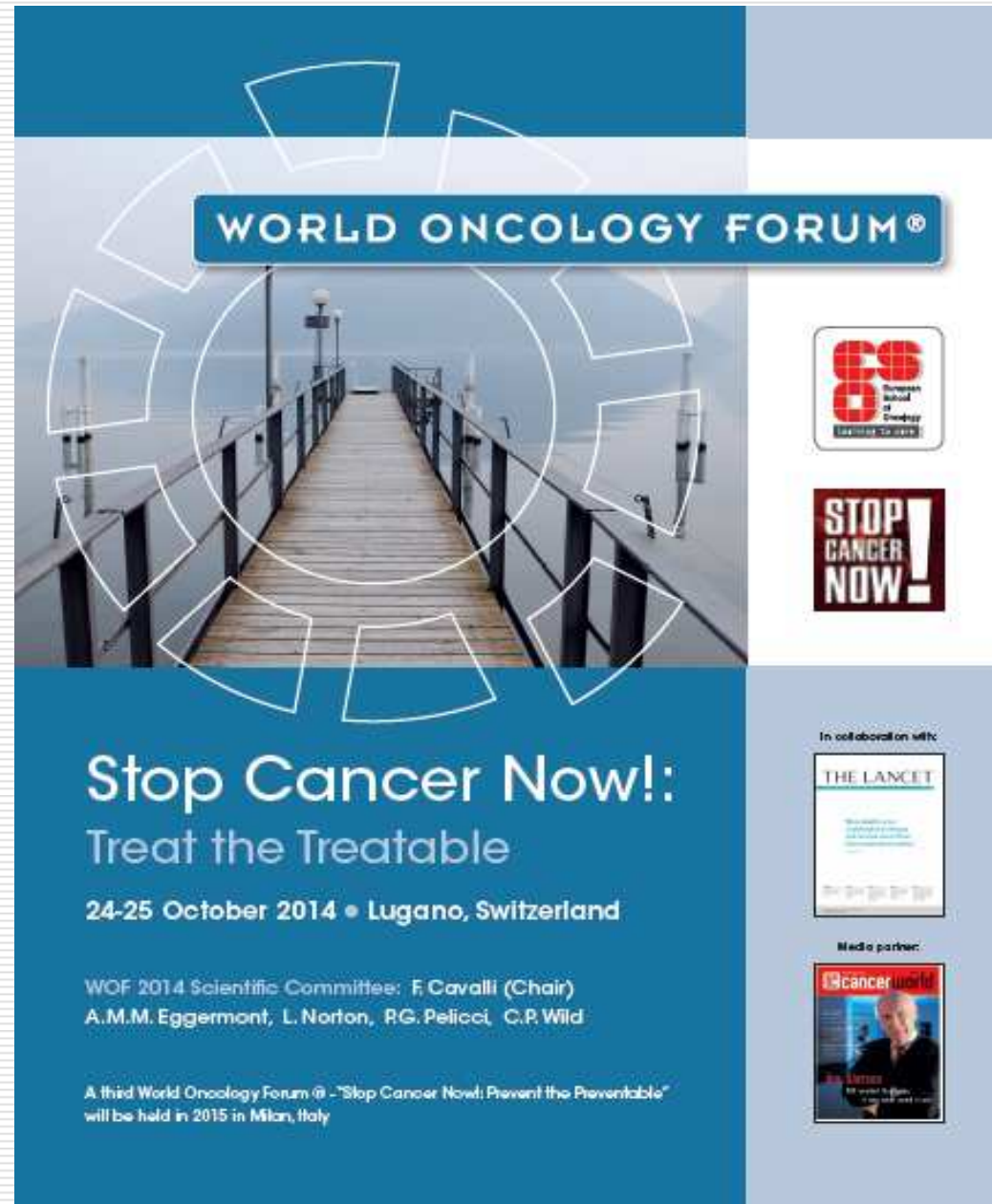
7. Replace the current broken business model for developing new therapies with more efficient forms of public-private collaboration, geared to accelerating delivery of affordable therapies that are of real benefit to patients across the world.

Changes of rules

- abandon principle of patents
- compensate industry for discovery
- most of research (F I → III) to be financed by public resources.

J. Stieglitz. blog "Project Syndicate"

2014



WORLD ONCOLOGY FORUM®

ES
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of
Oncology

**STOP
CANCER
NOW!**

Stop Cancer Now!:
Treat the Treatable

24-25 October 2014 • Lugano, Switzerland

WOF 2014 Scientific Committee: F. Cavalli (Chair)
A.M.M. Eggermont, L. Norton, R.G. Pelicci, C.P. Wild

A third World Oncology Forum @ "Stop Cancer Now! Prevent the Preventable"
will be held in 2015 in Milan, Italy

In collaboration with

THE LANCET

Media partner:

cancerworld

Determining Meaningful Clinical Value

- ❑ What do RCT results mean in real life?
- ❑ Statistical significance vs clinical value
- ❑ How high to set the bar in phase III to have any likelihood for effectiveness in real life
- ❑ outcome research difficult in oncology

- ❑ 1000 drugs in development
- ❑ Redundancy of pipelines: Big Pharma --- MEGA Pharma?

- ❑ Patenting
- ❑ Defensive patenting
- ❑ Excessive pricing blocks further development
- ❑ Niche indications and off-label use in real life

A map of human cancer signaling

Qinghua Cui¹, Yun Ma², Maria Jaramillo³, Hamza Bari¹, Arif Awan¹, Song Yang⁴, Simo Zhang², Lixue Liu², Meng Lu², Maureen O'Connor-McCourt³, Enrico O Purisima^{1,5} and Edwin Wang^{1,5,*}

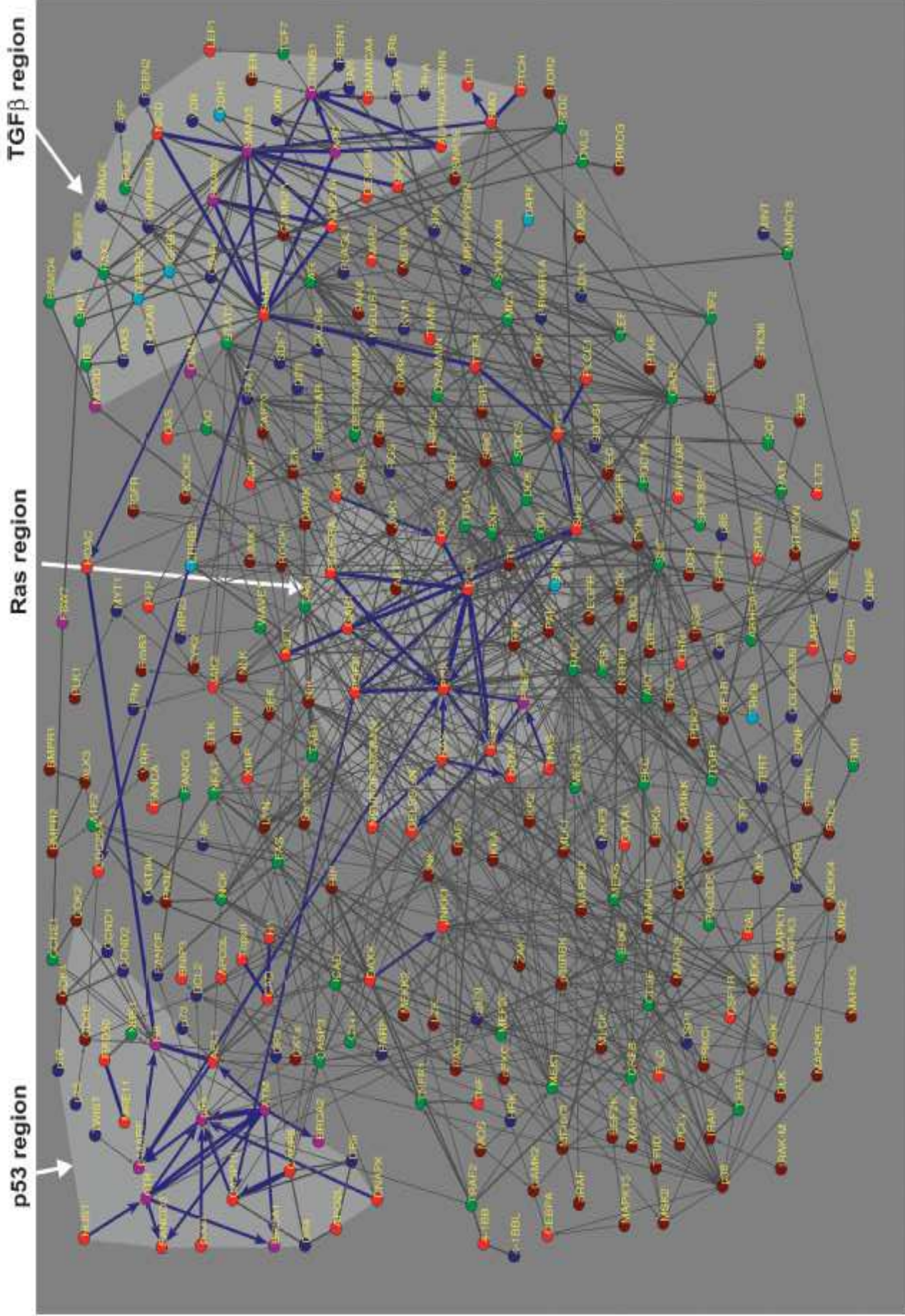


Figure 2 Human oncogenic signaling map. The human cancer signaling map was extracted from the human signaling network which was mapped with cancer

PRICING

- 88.000 Euros for 4 injections ipilimumab
- “It’s OK because Melanoma is not one of the BIG 4 so it wont break the bank”
- The precedent has been set.....
- (and so BRAF-inhibitors got on board for just below that pricing)
 - In spite of no long lasting benefit
 - All BRAF melanoma patients now eligible for 130-150.000 Euros

World Cancer Leaders' Summit

Melbourne, 3.12.2014

- The economic case for cancer control
- The global cost of cancer for the world economy has been calculated at around 2-2.5 trillion/year

Comprehensive Global Cervical Cancer Programme

Around 530'000 new cases/year, of which around 450'000 in low/middle income countries



Around 50 Million 10-year old girls
Around 1 billion women of cervical screening age (30-49 years)

- Cost for 100% coverage/year
- Screening: around 2 Billion
 - Vaccination: around 1 Billion

UICC World Cancer Leaders' Summit 2014

“Global Fund for Cancer”

- Priorities:
- Cancer Registries
 - Cervical Cancer
 - Pediatric Oncology
 - Opioids

 - Breast Cancer
 - Radiotherapy equipments

10 billion/year???

Für eine weltweite Krebsbekämpfung

Krebs verursacht neben all den menschlichen Tragödien auch jährlich volkswirtschaftliche Einbussen von weltweit etwa 900 Milliarden US-Dollar.

*Die Onkologie dürfte zudem bald anteilmässig an der Spitze der pharmazeutischen Kosten stehen. Es ist an der Zeit, auch solche Aspekte öffentlich zu erörtern. Von **Franco Cavalli***

World Economic Forum (WEF)

Davos 21-24.1.2015

Cancer Pathway to a Cure – What are the breakthroughs in cancer prevention and therapy?

Interactive Dinner Session

Public Session

Friday 23 January, 20.00

Globalization of NCDs – Workstudio

Public Session

Saturday 24 January 09.00