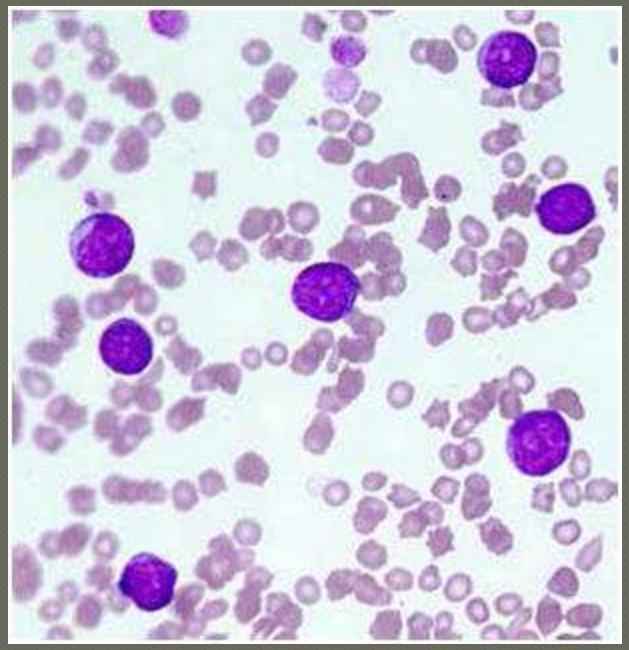
Mengukur *Quality Outcome* dan *Quality of Life* Penderita Kanker

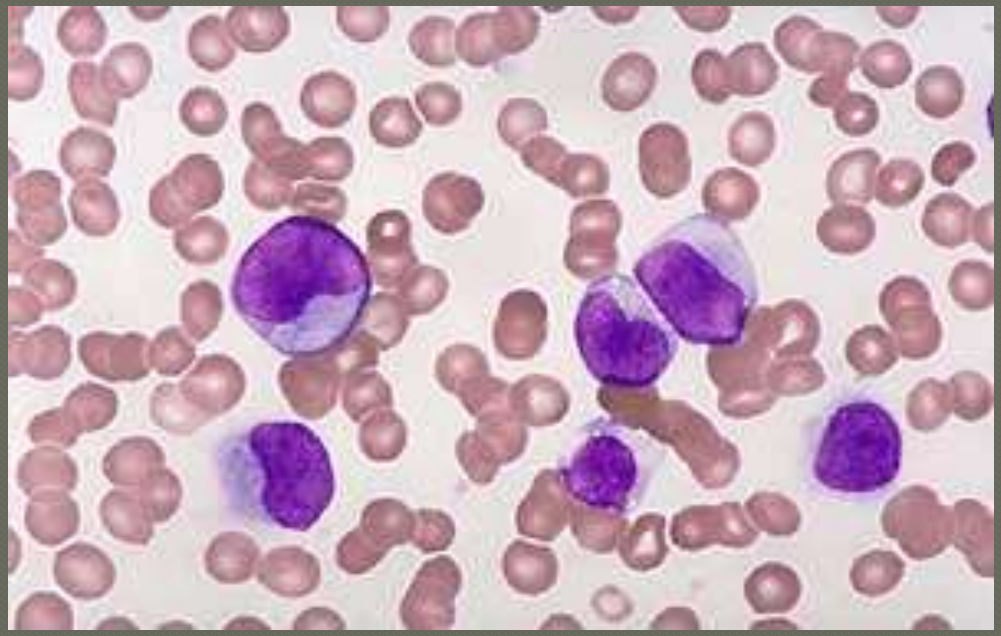
Sonar S Panigoro
RS Kanker Dharmais Jakarta

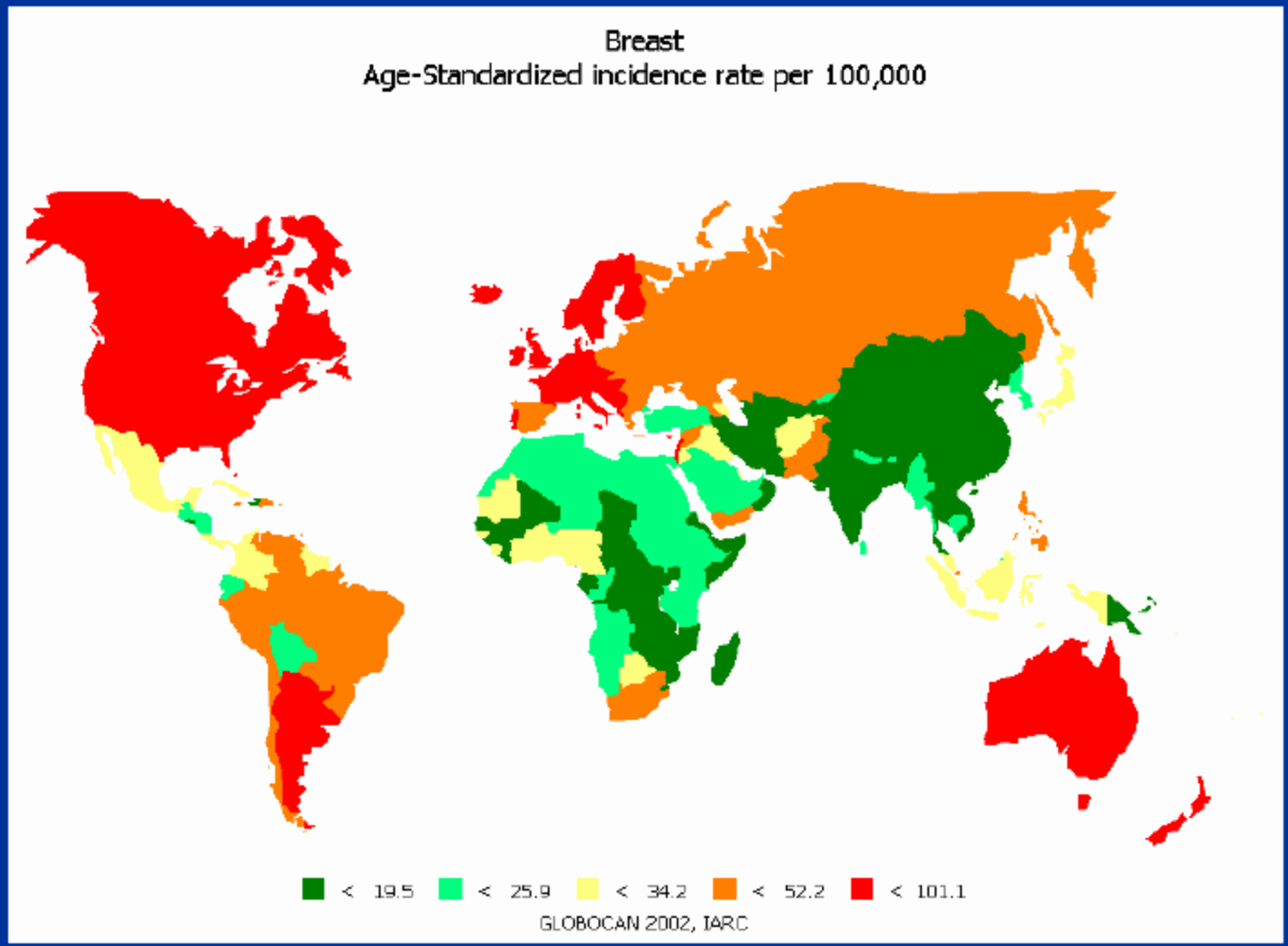
- Kanker merupakan kumpulan penyakit yang berjumlah lebih dari 100 macam yang dapat mengenai seluruh organ tubuh
- Dapat berupa kanker padat seperti kanker usus,hati dsb.dapat juga berupa kanker darah seperti leukemia

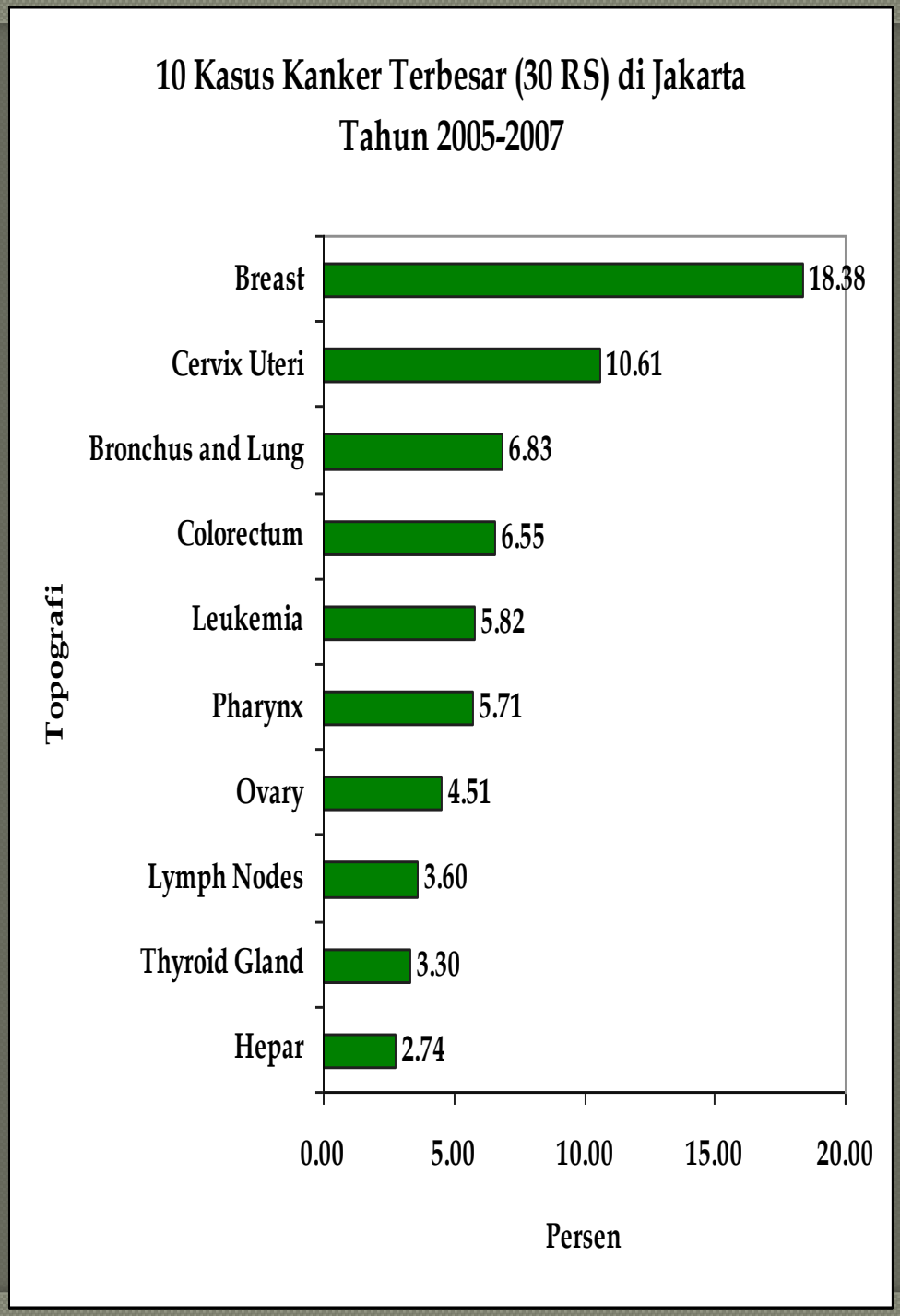
Kanker padat

Kanker darah

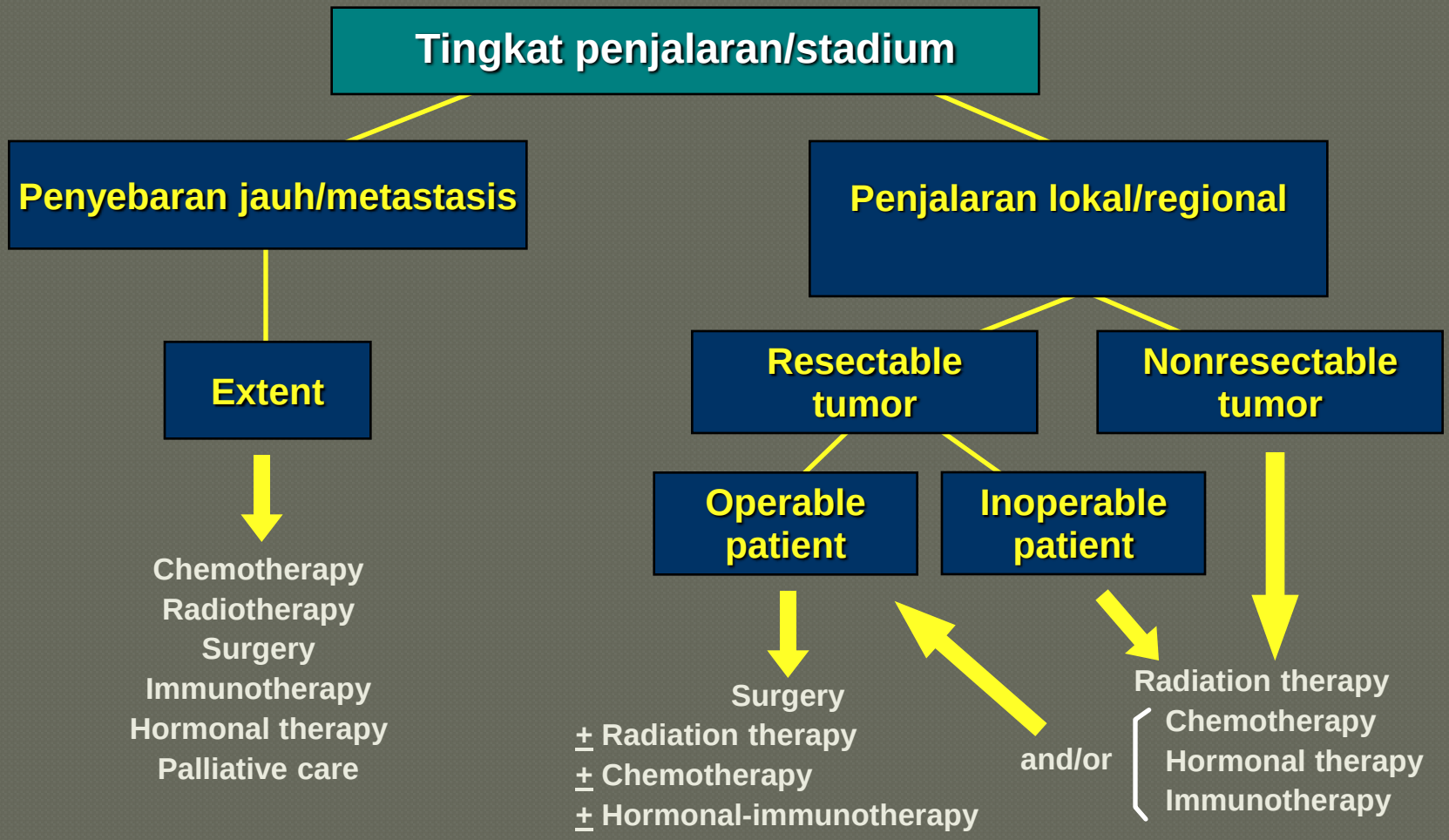





Breast
Age-Standardized incidence rate per 100,000
< 19.5
< 25.9
< 34.2
< 52.2
< 101.1
GLOBOCAN 2002, IARC


10 Kasus Kanker Terbesar (30 RS) di Jakarta
Tahun 2005-2007
Topografi
Breast
Cervix Uteri
Bronchus and Lung
Colorectum
Leukemia
Pharynx
Ovary
Lymph Nodes
Thyroid Gland
Hepar
18.38
10.61
6.83
6.55
5.82
5.71
4.51
3.60
3.30
2.74
0.00
5.00
10.00
15.00
20.00
Persen

Ekstensi /Tingkat penjalaran kanker

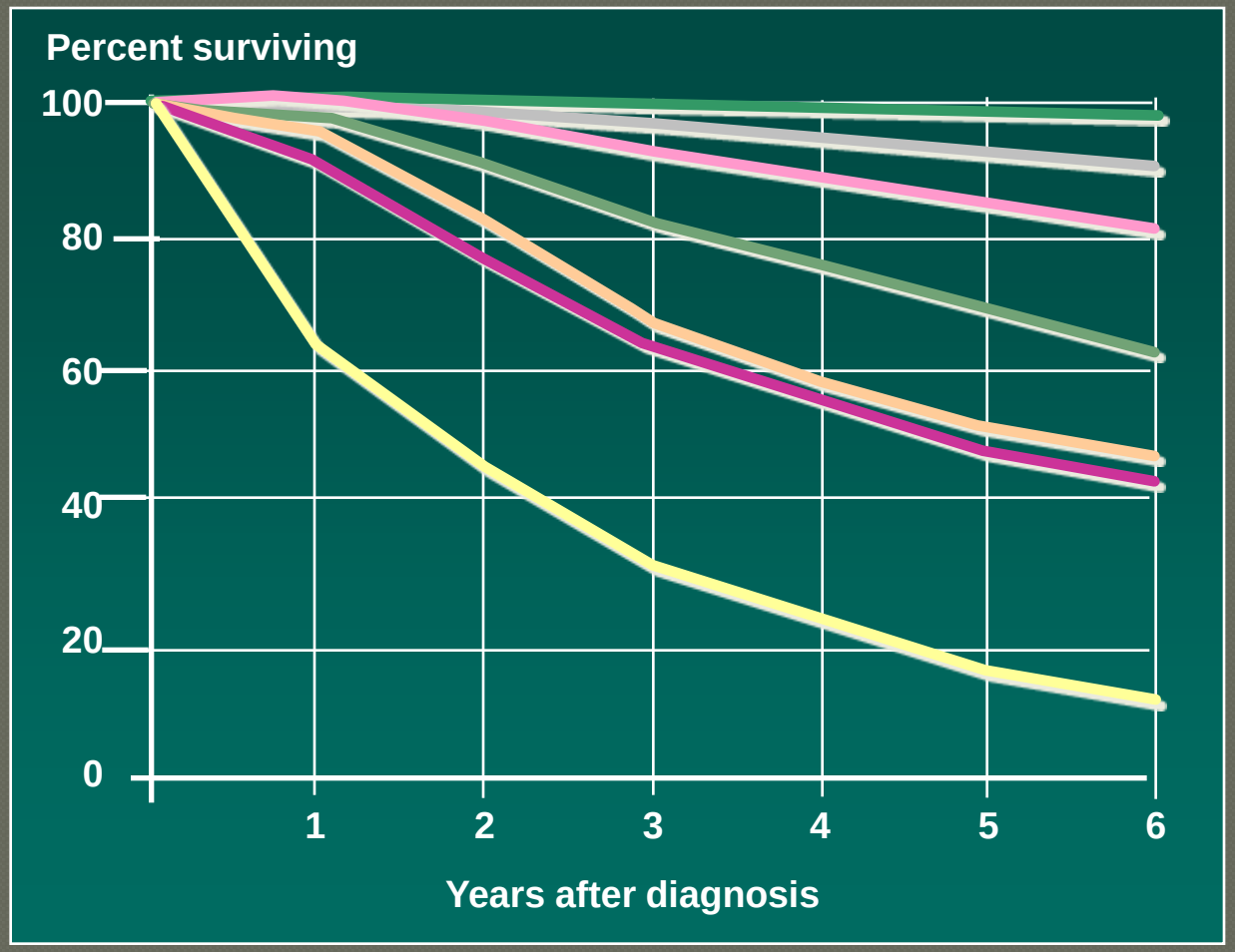


Jenis pengobatan kanker

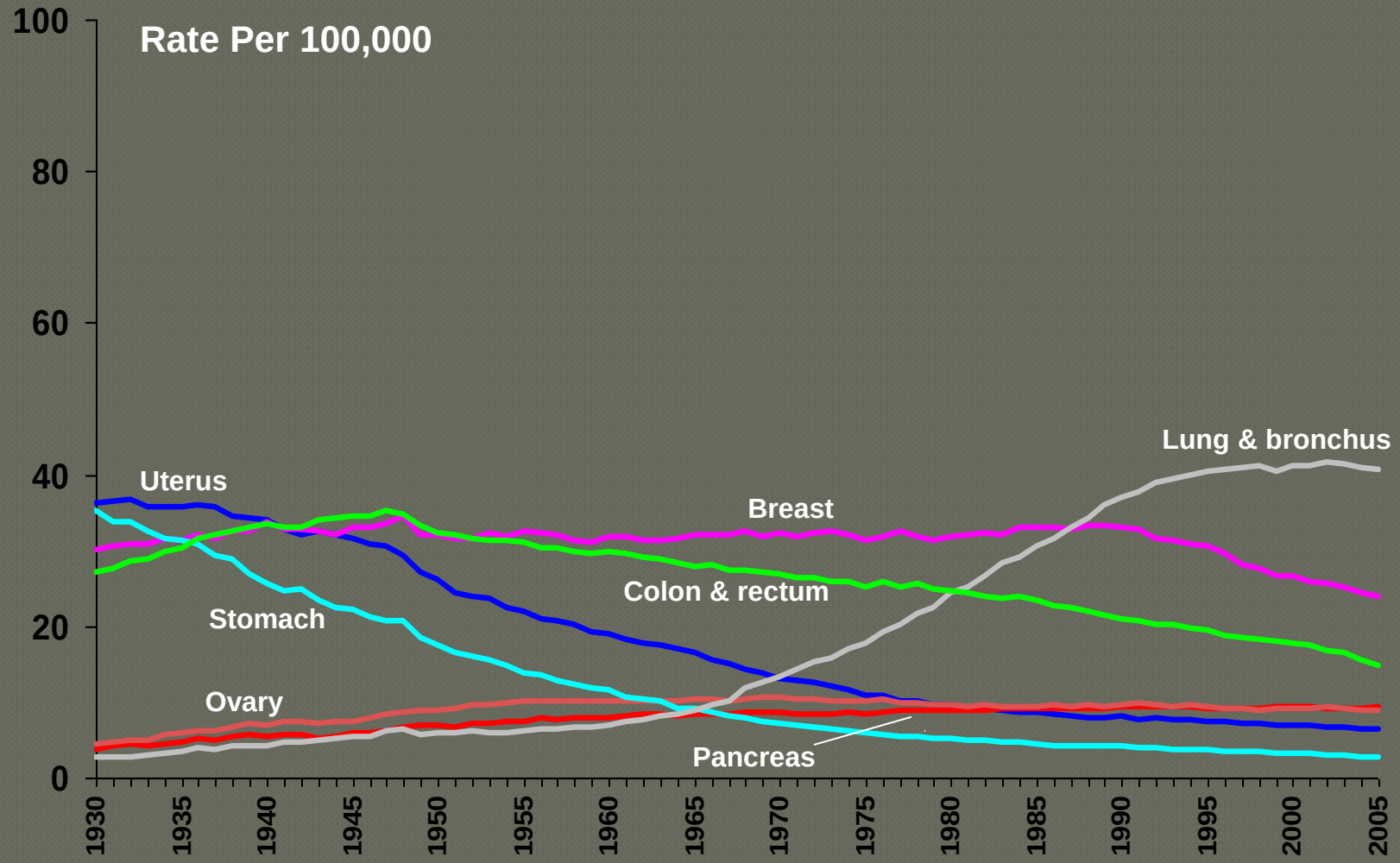
- Bedah
- Kemoterapi
- Radiasi/penyinaran
- Hormonal
- Terapi target

BREAST CANCER

Survival by stage



Cancer Death Rates* Among Women, US,1930-2005



*Age-adjusted to the 2000 US standard population.
Source: US Mortality Data 1960-2005, US Mortality Volumes 1930-1959,
National Center for Health Statistics, Centers for Disease Control and Prevention, 2008.

World Estimates, Globocan 2002

	Number of new cases	Incidence	Death
World	1,151,298	37.4	13.2
More developed countries	636,128	67.8	18.1
Less developed countries	514,072	23.8	10.3

Rates/100,000

Soft tissue sarcoma lanjut

- Lokal lanjut di lengan atas kiri dengan nyeri hebat → useless limb
- Metastasis jauh ke paru multipel→ survival <6bulan
- Terapi : - pembedahan,kemoterapi atau paliatif ??

Kasus

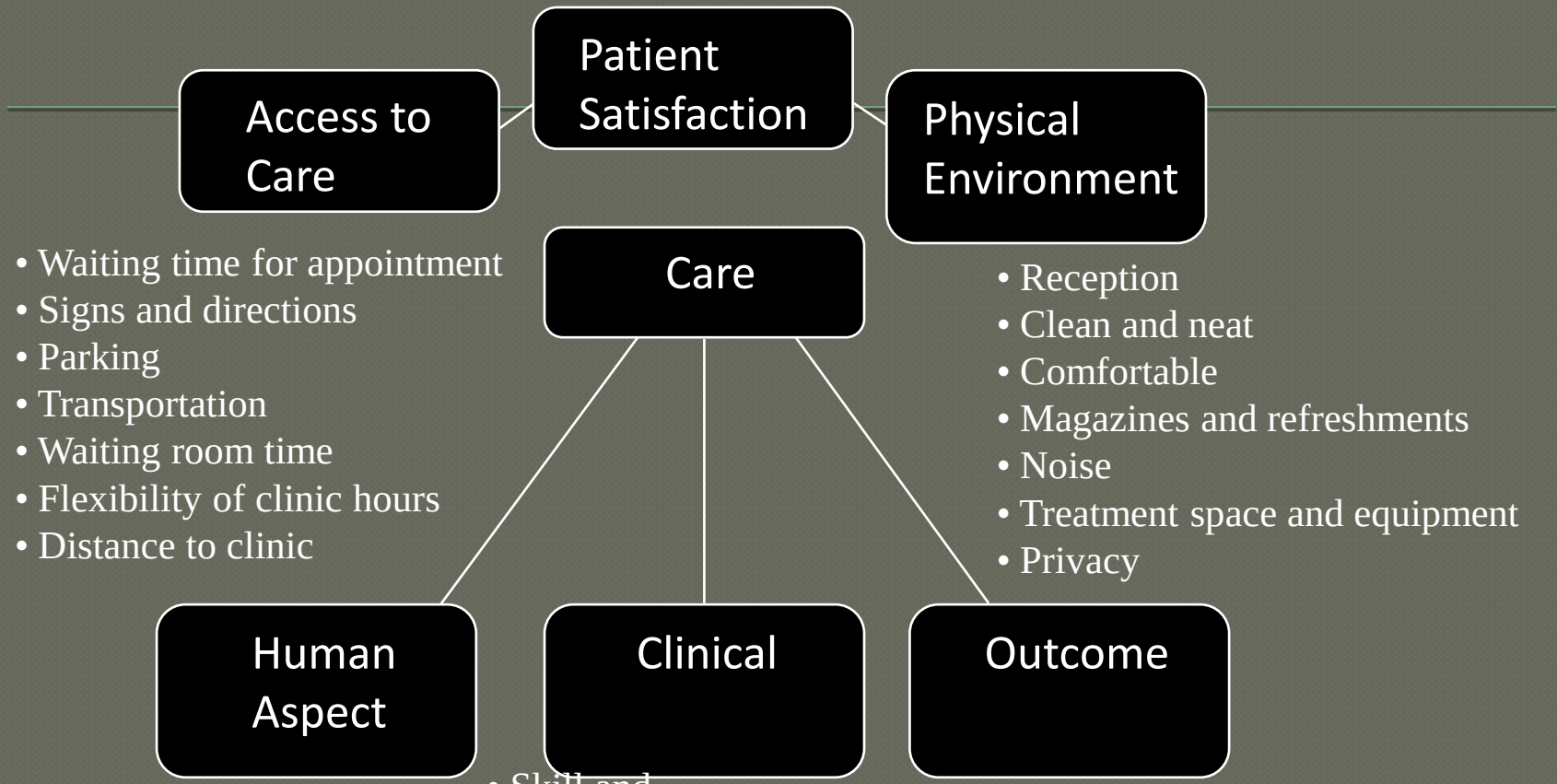
Forequarter amputation

Outcome development model

- Deciding what is the right thing to do
- Doing the right thing
- Doing it the right way
- With the right outcome

Ernst A Codman
Pionir quality outcome

Operational Definition of Patient Satisfaction

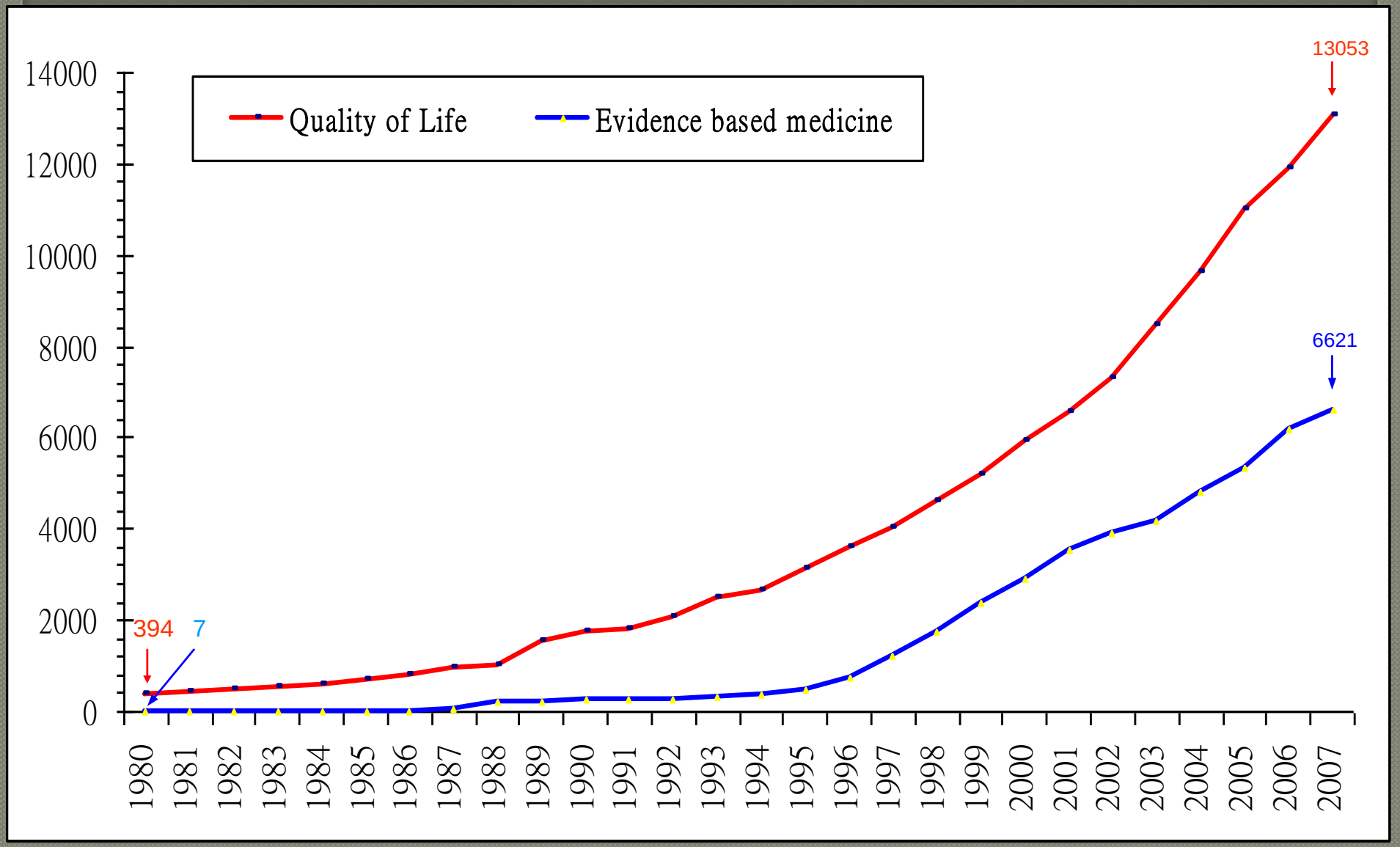


- *We perform, or should perform, only one relevant service in healthcare: we deliver **value**.*
  - (Melissa M. Brown)
- Decision in medical care → adding values in quantity and quality of life in most optimal way

- From 1948 through 1994, the total sum of healthcare knowledge increased 1,342 times
- Total sum of medical information now doubles in the last 3.5 years

Evidence based medicine → relevant, new and meaningful information

No. articles in PubMed database with two specific key words



EBM - definition

- Sackett DL, et al (2000)

  The **integration** of **best research evidence** with **clinical expertise** and **patient values**

Level of evidence

Best research evidence

- Clinically relevant – not just "well-done research"
- Ideally patient-centered clinical research
  - What matters to patients?
    - **Morbidity, mortality, quality of life, cost**
- Sometimes disease-oriented evidence (DOE)
- Occasionally basic science

- The third component of decision making in Evidence Based Practice is patient's value
- The practice of medicine based upon the patient-perceived value conferred by an intervention → value based medicine (VBM)
- VBM takes the best evidence-based data and converts these data into value form

How is value measured?

- The value conferred by any health care intervention is measured by quantifying the improvement (or maintenance), it confers in
  - Quality of life and/or
  - Length of life

Measurement of outcome of an intervention in EBM

- Objective parameter measurement
  - Surgery+adjuvant in cancer treatment
    - Decrease of recurrency rate
    - Increase survival

  → **Does not measure the quality of life of patient during life-year**

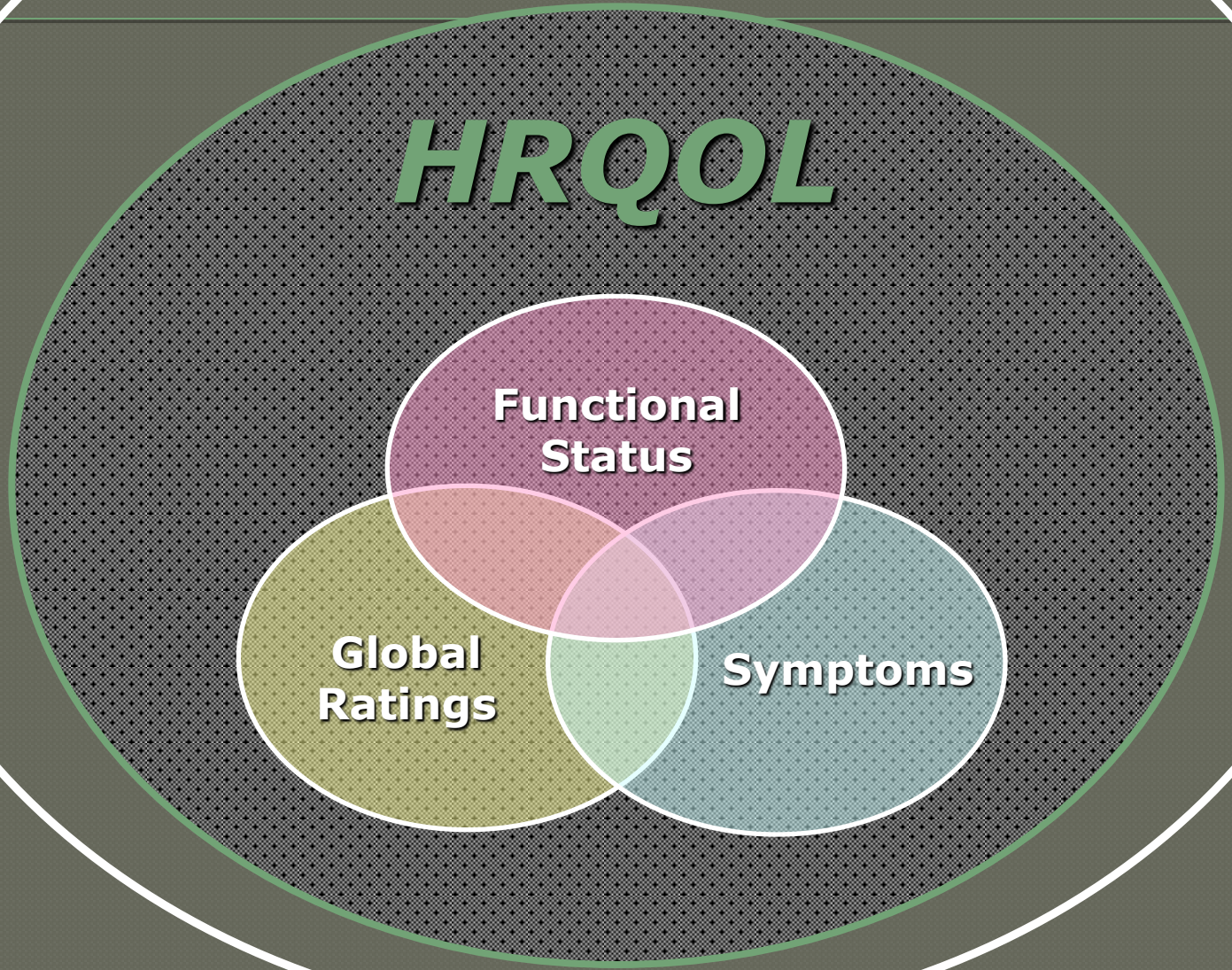
- An objective measures of value, standardized across the diverse fields in healthcare, is highly desirable because it readily provides
  - The most accurate assessment of the patient-perceived worth of an intervention
  - The means to compare all healthcare interventions on the same scale
  - A measure that can be combined with the cost of an intervention to arrive at a cost-utility unit

Measurement of medical intervention benefit

- Acute
  - Rapid recovery from acute state
  - Mortality prevention
  - Pain relieve and other acute state
- Chronic
  - Longlasting, sometime paliative.
  - Perburukan bermakna pada kondisi pasien dalam jangka panjang → pengukuran health related quality of life (HRQoL)

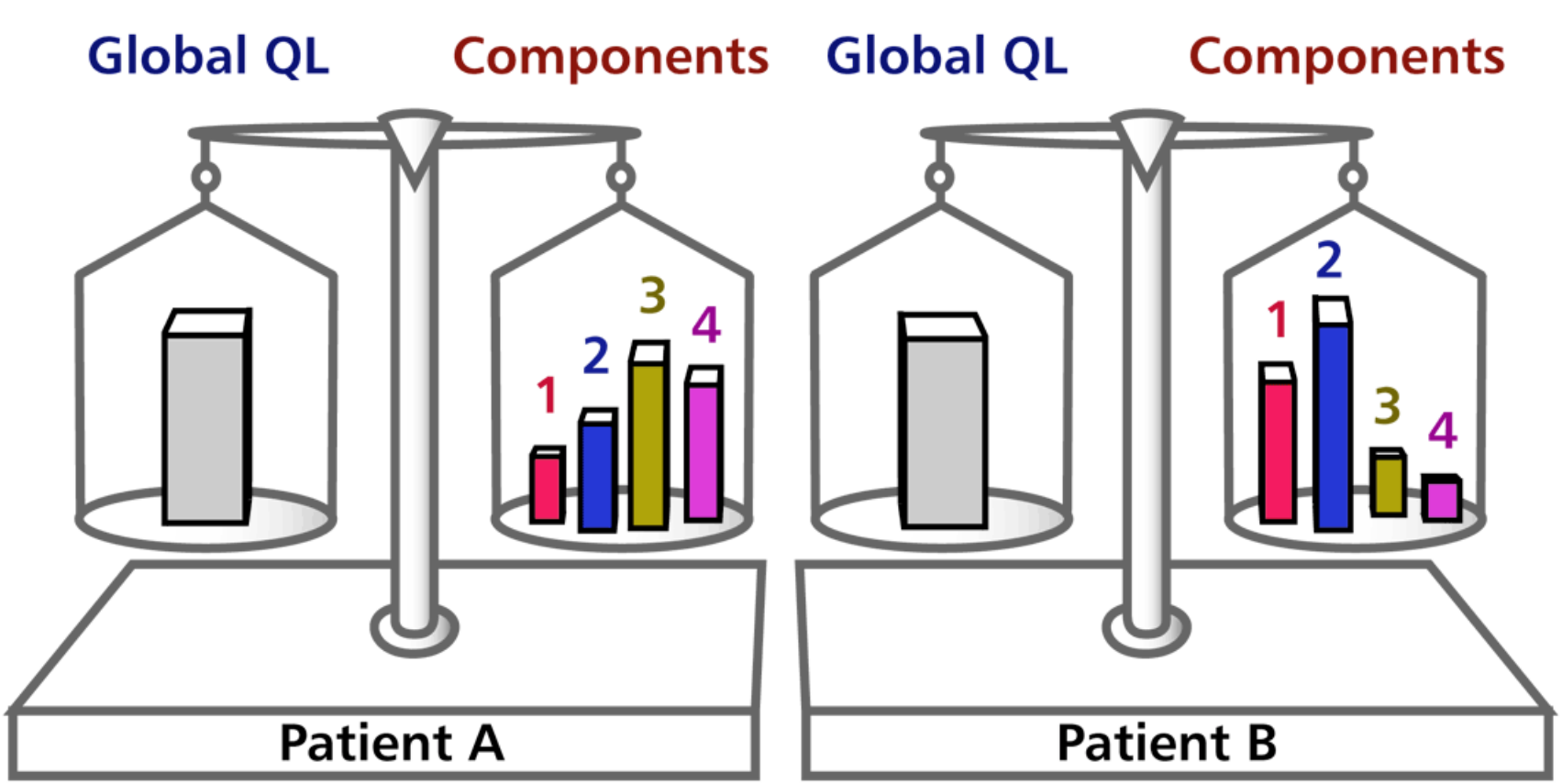
- VBM incorporates all patient's-perceived quality-of-life variables associated with an intervention. Thus allowing more accurate measure of the overall worth of that intervention to a patient than obtained with solely a primary evidence-based outcome

Quality of Life



Health-Related Quality of Life (HRQOL) Assessment

1. What is HRQOL?
2. What Should You Measure?
3. How Should You Measure it?
4. How is it incorporated into clinical research



1. Functional Status
2. Disease Symptoms
3. Psychological Functioning
4. Social Functioning

HRQoL Domains

Physical Functioning
Occupational Role & Functioning
Social Functioning
Emotional Well-being
Concerns
Symptom Status
Financial Concerns

Spirituality
Future Orientation
Sexuality/Intimacy
Health
Family Well-Being
Satisfaction with care

Global/Overall Perception of Quality of Life

Health Related Quality of Life (HRQoL)

- How much the decrease or increase of disease severity affect the patient → HRQoL measurement
- HRQoL
  - Function-based Generic: Karnofsky Performance Index, SF-36
  - Function-based Specialty-specific: IIEF, American Heart Association Functional Capacity Classification

Limitation of function-based HRQoL measurement

- Two patients have knee osteosarcoma with the same severity. After operation they are in the same condition → limitation in walk/run
- The patient's perceived value is different
  - soccer player
  - pianist

Preference-based HRQoL

- Preference-based: subject make decision regarding her preference (desirability or undesirability) for her health state.
- Patients typically choose (prefer) to live with their current disease or choose (prefer) free from their disease in return for trading something of value (money, time of life)

- Preference-based
  - Utility analysis
    - Time tradeoff
  - Rating Scale
  - Multiattribute Utility Analysis
- Utility value
  - perfect health : 1
  - death : 0
- Individual preference → community preference → the basic of Value Based Medicine

Advantages of preference-based instrument

- Encompass all possible variables that contribute to quality of life
- Are reproducible
- Range continuum from 0.0 to 1.0
- Have been shown to have good construct validity
- Can be used in cost-utility analysis

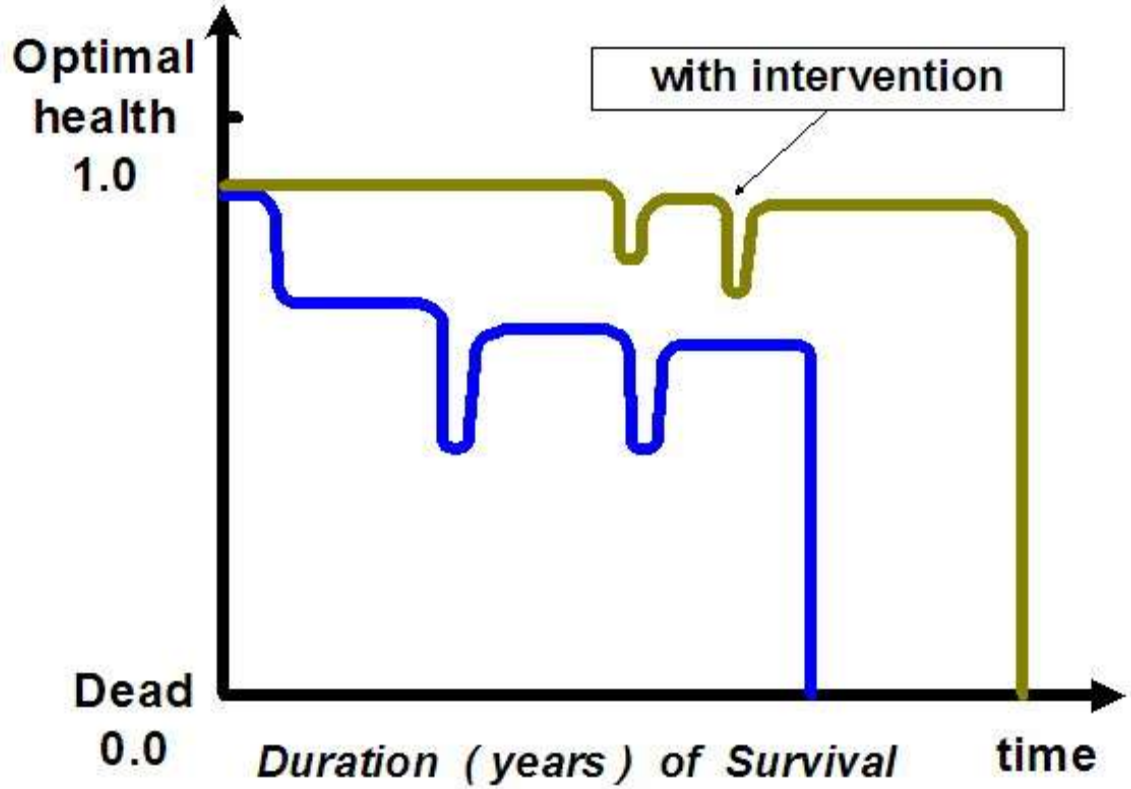
Examples of utility value

Health state	Utility value
AIDS	0.70
HIV symptomatic	0.82
HIV asymptomatic	0.94
ED	0.88
Myocard infarct mild	0.91
Stroke,major	0.30
Stroke, minor residual	0.89

- Increase of utility value after intervention → improvement of quality of life conferred by an intervention

But, for how long?

- Quality-adjusted life-year (QALY), captures improvement in quality and quantity of life for use in cost-utility analysis



Quality adjusted life year (QALY) gained from an intervention

Calculation of QALY:

= S(Length of survival in state *i*) x (Quality of life in state *i*)

(model the probability of state change)

Overestimation of the Value of an intervention with Evidence-Based Medicine

- Case

Patient with breast cancer, chemotherapy adds a 13th month to her otherwise 12-month life expectancy (evidence based data)

In addition to the EBM data demonstrating the improvement in length of life, qualitative data reveal that her utility value associated with the chemotherapy is 0.7 due to moderate to severe vomiting from chemotherapy

Overestimation of the Value of an intervention with Evidence-Based Medicine

- Evidence-Based Medicine Perspective

Treatment	Utility Value	Multiply by Time	Value Accrued over Remaining Life
No chemoth/	1.00	0.083	1.083 QALY

- Value-Based Medicine Perspective

Treatment	Utility Value	Multiply by Time	Value Accrued over Remaining Life
Chemoth/	0.70	1.083	0.758 QALY

Overestimation of the Value of an intervention with Evidence-Based Medicine

- Evidence-Based Medicine Perspective

Treatment	Utility Value	Multiply by Time	Value Accrued over Remaining Life
No Th/	1.00	4 years	4 QALY
Statin	1.00	5 years	5 QALY
		Gain	1 QALY

- Value-Based Medicine Perspective

Treatment	Utility Value	Multiply by Time	Value Accrued over Remaining Life
No Th/	0.90	4 years	3.6 QALY
Statin	0.95	5 years	4.75 QALY
		Gain	1.15

Purpose of VBM

- Comparing various healthcare intervention
- Identification the most cost-effective intervention
- Permits higher quality of care
- Maximizes the efficiency of expenditure
- Incorporates patient's preferences
- It has been estimated, VBM could save 7% of health expenditure in the US (115 milyard $)

Does VBM replace EBM?

- No !!!
- EBM served the basis for finding valid data
- Subsequently this valid data is conferred to utility value → QALY

Quality of Life and Sexual Functioning in Cervical Cancer Survivors

Michael Frumovitz, Charlotte C. Sun, Leslie R. Schover, Mark F. Munsell, Anuja Jhingran, J. Taylor Wharton, Patricia Eifel, Therese B. Bevers, Charles F. Levenback, David M. Gershenson, and Diane C. Bodurka

J Clin Oncol 23:7428-7436. © 2005 by American Society of Clinical Oncology

- Texas MD Anderson Cancer Centre
- Ca Cervix stad I tahun 1991-1998
- Minimal 5 tahun follow up
- Hanya terapi pembedahan atau radiasi
  (kedua tindakan ini sudah terbukti sama efektifnya)
- *Age matched control*
- *6* instrumen QOL : SF-12, BSI -18, Menopausal Survey, A-DAS
  CARES dan FSFI

Table 4. Univariate Analysis of Outcome Variables for Surgical Patients, Radiation Patients, and Controls

	Rad Hyst (n = 37)	Radiation (n = 37)	Controls (n = 40)	P*
SF-12				
PCS	53.7	45.1	53.5	< .001
MCS	50.5	47.0	52.2	NS
BSI-18†				
Somatization	46.5	52.7	43.4	.005
Depression	45.5	51.9	45.7	.01
Anxiety	42.0	46.8[c]	42.5	.04
GSI	42.4	50.8	41.3	< .001
Menopause scale‡				
Hot flashes	0.8	1.3	0.6	.04
Vaginal dryness	0.4	1.1	0.3	< .001
Urinary symptoms	0.6	1.2	0.5	.02
Total score	0.6	1.2[b]	0.4	< .001
A-DAS	26.3	22.7	23.9	NS
CARES	1.3	1.7	1.0	NS
FSFI				
Desire	3.4	2.9	3.6	NS
Arousability	4.0	2.6	4.3	.006
Lubrication	4.5	2.9	4.6	.003
Orgasm	4.2	2.8	4.3	.02
Satisfaction	4.4	3.2	4.7	.006
Pain	4.6	2.7	5.0	< .001
Overall score	25.1	17.1	26.4	.001

Abbreviations: Rad Hyst, radical hysterectomy; SF-12, Short Form-12; PCS, Physical Component Score; MCS, Mental Component Score; BSI-18, Brief Symptom Index-18; GSI, Global Severity Index; A-DAS, Abbreviated Dyadic Adjustment Scale; CARES, Cancer Rehabilitation Evaluation System; FSFI, Female Sexual Functioning Index; NS, not significant.

*P value represents difference in comparison of radiotherapy patients versus controls and radical hysterectomy arms. The larger of the two P values is reported. No significant difference existed in scores for radical hysterectomy patients and controls on any of the instruments utilized.

†Lower score correlates with better quality of life.

‡Significantly lower ($P < .05$) when compared with radical hysterectomy, but no significant difference ($P = .06$) when compared with controls.

Randomized Controlled Trial of the Breast Cancer Recovery Program for Women With Breast Cancer–Related Lymphedema

Marjorie K. McClure, Richard J. McClure, Richard Day, Adam M. Brufsky

American Journal of Occupational Therapy,64, 59–72.

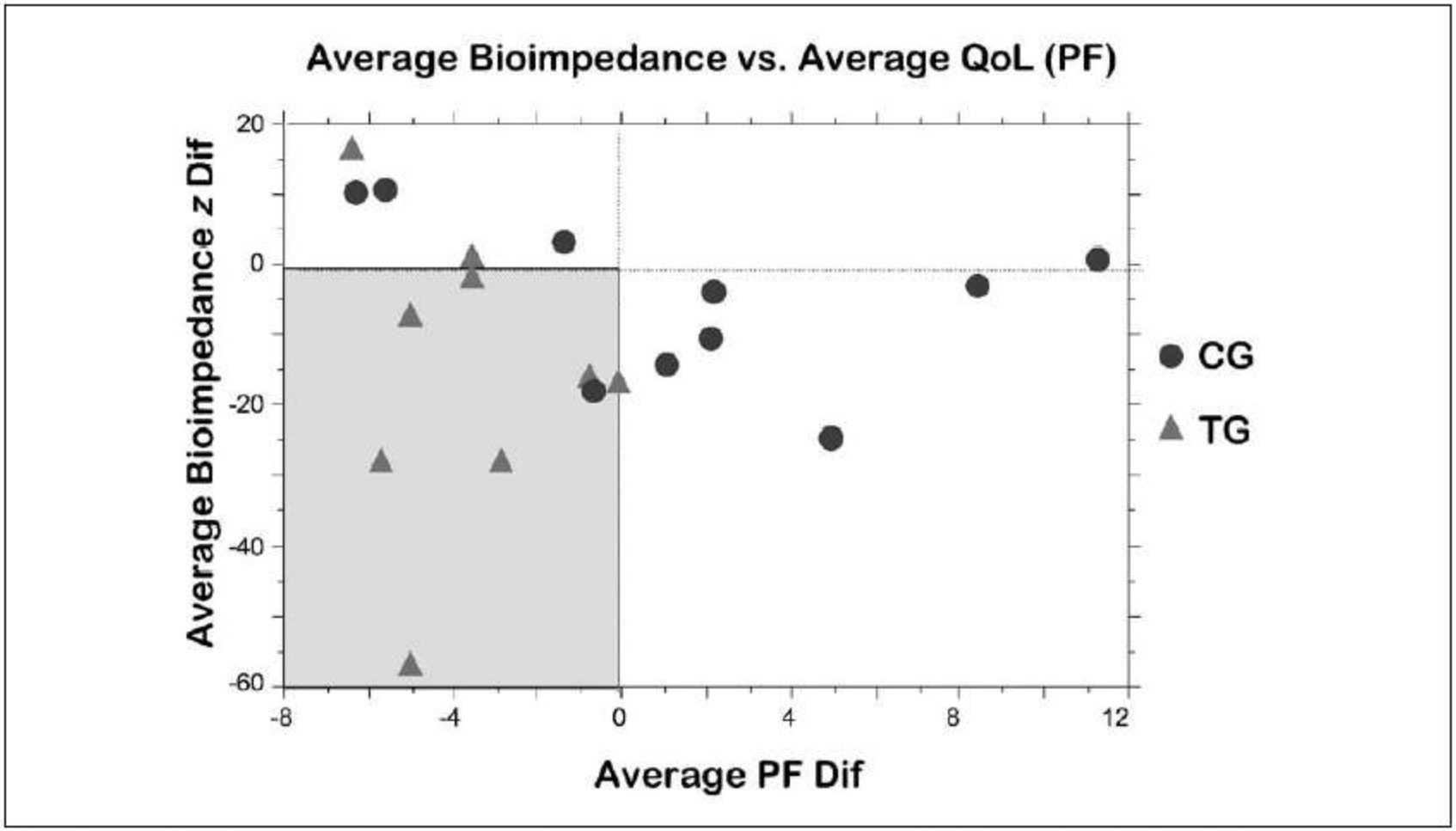


Figure 6. Bivariate plot of average bioimpedance *z* differences versus average quality-of-life (QoL) physical function (PF) score differences. Averages were calculated by using measures at the three difference timepoints. Highlighted quadrant indicates improvement in average differences of both measures.

Note. TG = treatment group; CG = control group.

Type of Clinical Trial and PRO

- Phase I: not critical-goal is primarily to define MTD or optimal biologic dose
- Phase II: can be used but not essential
  - An opportunity to collect pilot data for use in phase III trial
- Phase III-HRQOL data is essential in this context

Is QOL always integrated with Trial ?

1. QoL may be the main endpoint. This is frequently true in palliative care, or when patients are seriously ill with incurable disease.
2. Treatments may be expected to be equivalent in efficacy, and a new treatment would be deemed preferable if it confers QoL benefits.
3. A new treatment may show a small benefit in cure rates or survival advantage, but this might be offset by QoL deterioration.
4. Treatments may differ considerably in their short-term efficacy, but if the overall failure rate is high then QoL issues should be considered.

Di Indonesia

- Di Indonesia belum banyak penelitian tentang QOL
- INA HRQoL → TBC dan Hipertensi
- Di RSKD dalam taraf uji coba INA BCHRQoL (20 kasus)

Terima kasih