

## SGORL Summer School Basics of economics

PD Dr. Balthasar L. Hug, MBA  
Division of Internal Medicine  
University Hospital Basel

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## SGORL Summer School Contents

- Course Goals
- Types of Cost in Health Care
- Economic Indicators
- Practical Examples
- Relation Economics to Ethics

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## SGORL Summer School Course Goals

To get to know the basics of economics as tools for economic thinking in medicine including

- types of cost in health care
- most important economic indicators
- relation of economics to ethics.

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## SGORL Summer School Types of Cost

- **Charged Cost**
- **Real Cost** ( cf **Charge-to-Cost Ratio (CCR)** in systems with DRG)
- **Billed Cost**
- **Direct vs. Indirect Cost** ( e.g. medication vs. lost work days)
- **Follow-up Cost** (statins prescription at hospitalization)

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## SGORL Summer School Definitions

**Adverse selection** distortion of selection criteria



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## SGORL Summer School Definitions

**Moral Hazard** distortion of behavior by insurance status



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## SGORL Summer School Definitions



**Equity**

equal distribution of health services



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## SGORL Summer School Definitions



**Efficiency**

benefit/money spent



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## SGORL Summer School Economic Indicators



- Gross Domestic Product (GDP)
- Quality Adjusted Life Years (QALY)
- Disease Adjusted Life Years (DALY)

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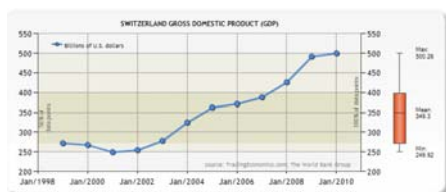
## SGORL Summer School Economic Indicators: GDP



**Gross Domestic Product (GDP)** = value of all products and services produced within a country

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## SGORL Summer School Economic Indicators: GDP



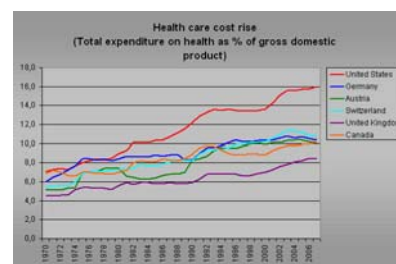
France: \$2,500 Billion

USA: \$14,000 Billion

www.tradingeconomics.com

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## SGORL Summer School Economic Indicators: GDP



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## SGORL Summer School Economic Indicators: QALY



### Quality Adjusted Life Years

- Quality of Life: 1 = completely healthy, 0 = dead
- Cost adjustment:  $\text{Cost} / \text{Quality of Life}$
- Example:
  - Therapy A: Cost = \$30,000, Quality of Life = 0.3  $\rightarrow 30,000/0.3 = \$100,000$
  - Therapy B: Cost = \$60,000, Quality of Life = 0.6  $\rightarrow 60,000/0.6 = \$100,000$
- Use: Decision basis for insurances and government

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## SGORL Summer School Economic Indicators: DALY



### Disease/Disability Adjusted Life Years

- Measure for national or global disease burden
- Measure for lost life years for reasons of premature death and reduced quality of life
- $\text{DALY} = \text{Years of life lost (YLL)} + \text{Years of life lost due to disability (YLD)}$   
 $\text{YLD} = (\# \text{ deaths} \times \text{life expectancy}) + (\text{incidence} \times \text{weight of disease} \times \text{average duration of illness})$
- Use: burden of specific diseases in single countries, regions or globally; Politics

(www.who.int)

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## SGORL Summer School Economic Indicators: DALY



### Example: Age-adjusted DALY lost to Diarrhea in 2004

- Switzerland: 9'277; rate 31/100,000 life years
  - Germany: 10'028; rate 33/100,000 LY
  - India: 27,825; rate 1,246/100,000 LY
- India : Switzerland = 40 : 1

(www.who.int)

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## SGORL Summer School Practical Cost Examples



### Basel University Hospital (2008)

641 beds

Average length of stay: 8.6 days

Average cost for 1 day of hospitalization: CHF 1,606.-

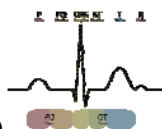
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## SGORL Summer School Practical Cost Examples



### Basel University Hospital: Quiz billed cost

- Electrocardiogram
- Echocardiography
- PTCA
- Cardiopulmonary Resuscitation (first 30 Min.)



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## SGORL Summer School Practical Cost Examples



### Basel University Hospital: Quiz billed cost [CHF]

- |                                                 |         |
|-------------------------------------------------|---------|
| • ECG                                           | 33.80   |
| • Echocardiography                              | 418.-   |
| • PTCA                                          | 5,126.- |
| • Cardiopulmonary Resuscitation (first 30 Min.) | 389.50  |

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## SGORL Summer School Relation Economics to Ethics



- Providers spend third party money -> Conflict of interest?



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## SGORL Summer School Relation Economics to Ethics



- Trade off between available capital and physician choices  
(resources < demand)



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## SGORL Summer School Relation Economics to Ethics



- Making choices in allocation of resources: "Which of two goods do I prefer?" Example: Sunitinib/Sutent® (antibody against renal cell carcinoma) not paid for 2006-2009 in UK because of cost of £27,000/year (National Institute for Health and Clinical Excellence, NICE).



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## SGORL Summer School Relation Economics to Ethics



- Equity vs. Efficiency in a situation with scarcity: To whom and what services should we allocate our resources to?



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## SGORL Summer School Summary



- Types of Cost in Health Care
- Economic Indicators
- Practical Examples
- Relation Economics to Ethics

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