

The role of Surgery in a resource scarce health system

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Gapminder World Chart 2006

Children dying before age 5 per 1000 live births (log)

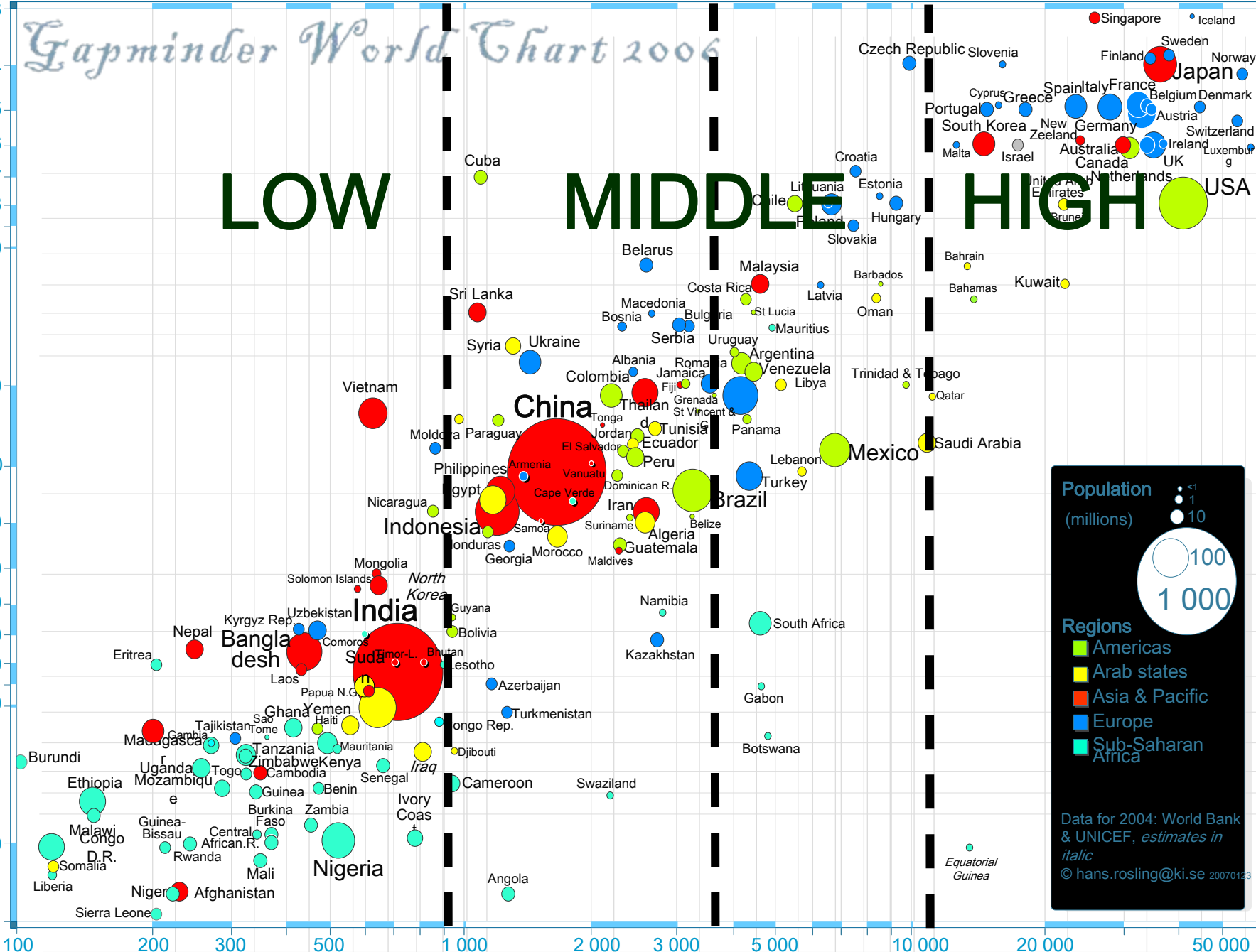
Health

Money Gross National Income per capita in US dollar, exchange rate (log)

LOW

MIDDLE

HIGH



Population
(millions)

• <1
• 1
• 10

○ 100
○ 1 000

Regions

- Americas
- Arab states
- Asia & Pacific
- Europe
- Sub-Saharan Africa

Data for 2004: World Bank & UNICEF, estimates in *italic*
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GAPMINDER











Need for Surgery in LIC?

- No population based study on prevalence, incidence of surgical conditions
- It is estimated that 11% of all DALYS globally are caused by surgical conditions
 - **Injury** 4% (38% of all surgical DALYS)
 - **Malignancies** 2% (19%)
 - **Malformations** 1% (9%)
 - **Obstetrical conditions** 0,7% (6%)
Cataracts, surgical infections, abdominal conditions
- The cost to avert one DALY is 33 USD, among the six most cost effective treatments.

Access to Surgery

- Determined by a number of factors
 - Availability of services
 - Geographical distance
 - Willingness and capacity to pay
 - Educational and cultural factors
 - Confidence of the health system
 - “Health seeking behavior”

Lack of availability of services where the needs are highest

- Majority of population in LIC live in rural areas
- More than 500 000 women (mainly in LIC) die every year due of pregnancy related causes
- In LIC increase of road traffic accidents
- ?????

According to need?

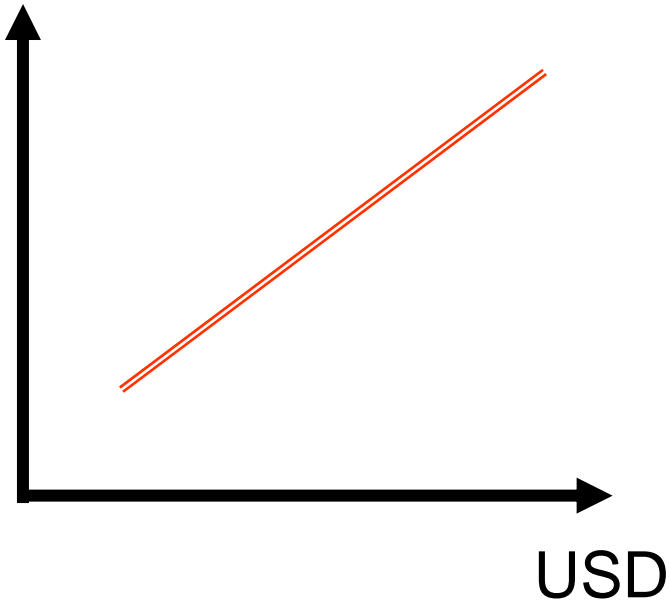
No of Economists



USD

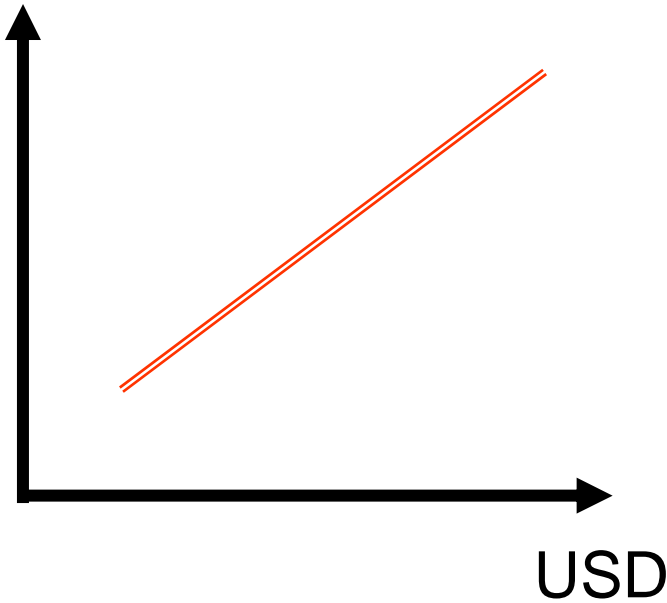
According to need?

No of Economists

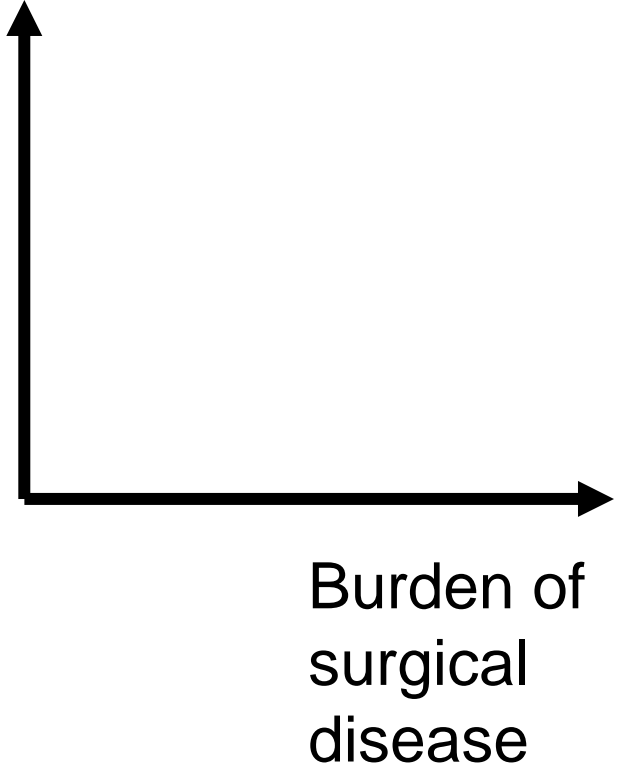


According to need?

No of Economists

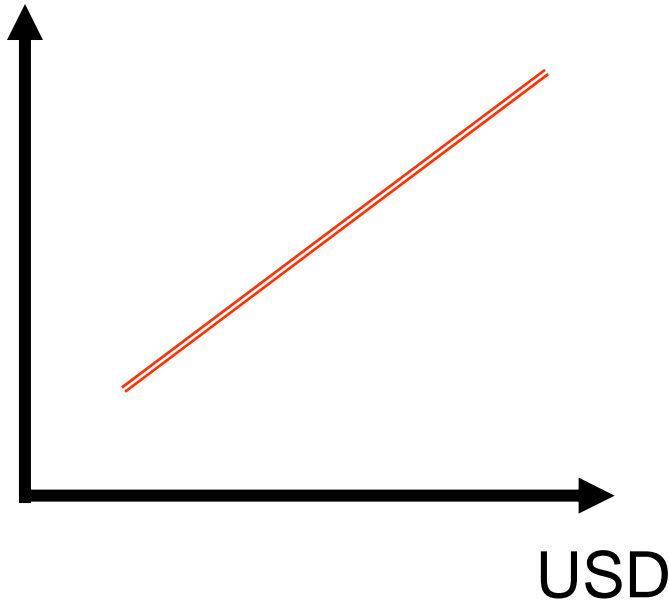


No of Surgeons

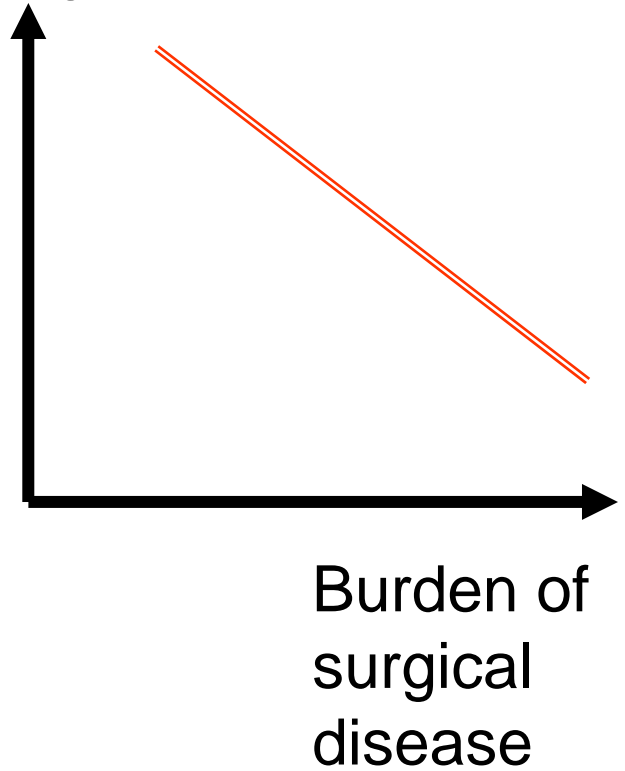


According to need?

No of Economists



No of Surgeons



Cost-effective Surgery in a scarce health system

- Common conditions that cause morbidity and mortality
- Conditions that can be safely and easily surgically treated
- Most cost-effective at district hospital level but minor investments at rural level can significantly reduce mortality

Condition

Incid Need

Abundant postpartum haemorrhage	5%	5-10%
Prolonged labour	5%	
Obstructed labour	1%	
Eclampsia	0.1-0.5%	5-15%
Prolapsed cord	1%	
Labour with a scarred uterus	5-15%	
Foetal distress	5-10%	
Tubal pregnancy	2-3%	
Postabortion endometritis-myometritis/sepsis	n.a.	
Postpartum endometritis-myometritis/sepsis	5%	
Intrauterine fetal death	3-5%	
<u>Total</u>		3-5%
Major limb fracture/injury		
Burns		
Joint dislocation		
Major soft tissue injury		
Pneumo/hemothorax		
Ruptured spleen		
<u>Total</u>		

Condition

Incid Need

Strangulated hernia		30/100 000
Intestinal obstruction		
Intestinal perforation		
Appendicitis		
Liver abscess		
Major wound infection		
Osteomyelitis/septic arthritis		
<u>Total</u>		
Congenital Hernia		
Hernia		175/100 000
Breast cancer		
Chronic osteomyelitis		
Hydrocele		
Urethral stricture		
Prostate enlargement		
Cataract		
Injury to the eye		
<u>Total</u>		

Challenges to increase the access to surgery

- Under funded health systems
- Lack of facilities, material and medication
- Lack of trained staff
- Confidence of the population
- Capacity to pay
- ???



Ways forward

- Advocate for more money to health care
- Set up training programs to increase capacities
- Delegation of tasks??

Delegation of tasks for Surgery in rural LIC areas, Recasting the roles

- Surgeons simply not available
- Medical doctors assigned to district hospitals rarely stay more than 2 or 3 years
- Training cost plus salary cost makes medical doctor in a district hospital about five times costlier than an AMO doing the same work
- In most countries, a simple calculation shows that there are simply not enough MD and no money to train and pay them

Delegation of surgery

- Poor quality for poor countries?
- But still happening in many places
 - Tecnicos de Chirurchia
 - Assistant Medical Officer AMO
- No systematic approach

Bellagio Essential Surgery group

- Platform for surgeons interested to increase access to surgery
- Surgeons open to new strategies
- Include Surgeons from 20 countries, (15 Sub Saharan countries)
- Stimulate surgeons to think outside the OT
- Create networks and advocate for more resources
- www.essentialsturgery.org

The Case for Surgery: Conclusions

- Surgically treatable conditions constitute a significant burden of disease in developing countries
- Contrary to commonly-held views, surgical care provided in low-cost district hospitals is cost-effective
- Four key areas have been identified where surgery can play a “public health” role
- Reliable data is unavailable to make reliable estimates of prevalence, costs and cost-effectiveness
- Surgeons should engage in making surgery more accessible