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Timing and cost of scaling up surgical services in low- and middle-income countries

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Background

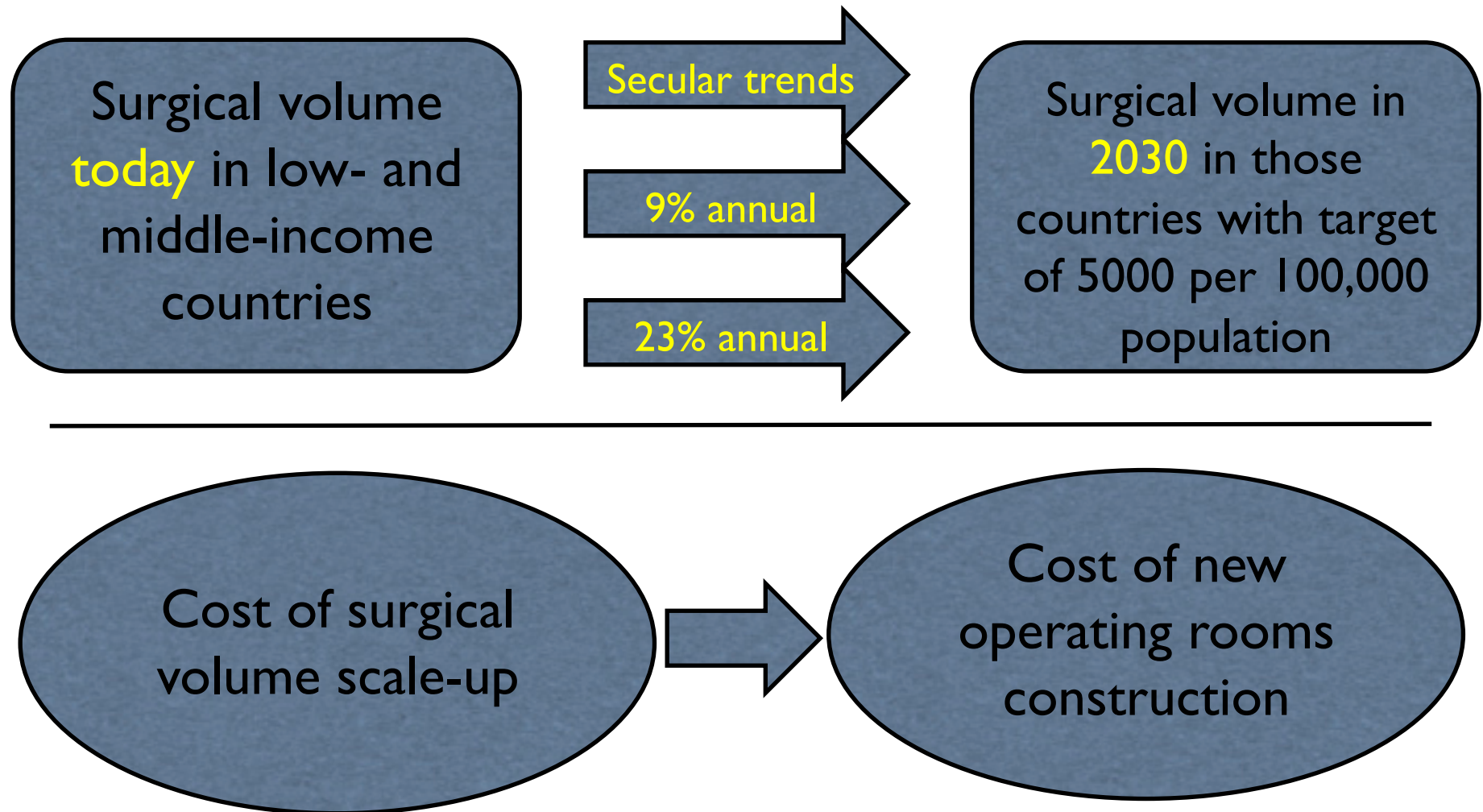
- The *Lancet's* Commission on Global Surgery proposes that countries should achieve 5000 major operations per 100,000 population per year
- We modeled the scale-up of surgical services in 88 low- and middle-income countries with a population > 1 million over 2012-2030 at various rates and quantified associated costs



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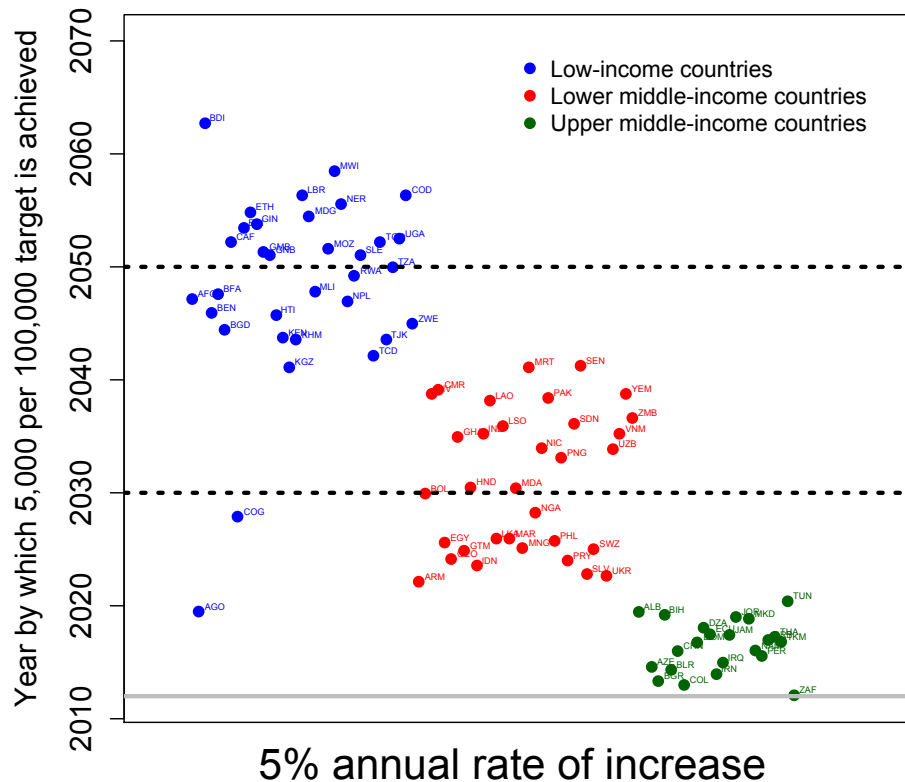
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Modeling approach



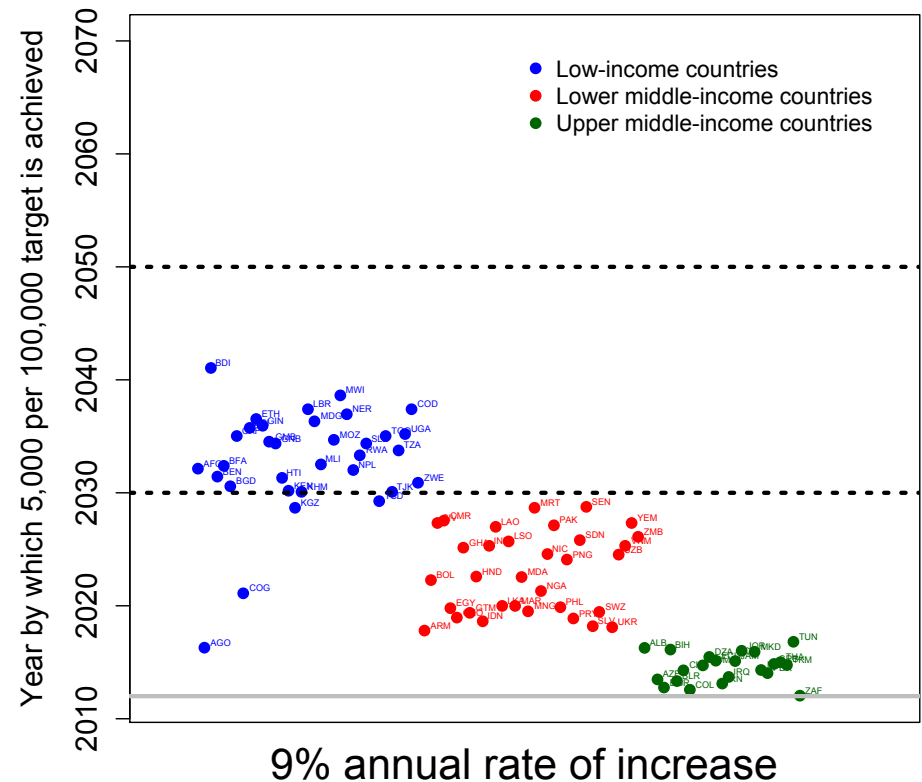
Timing of surgical scale-up to target

Target achievement at actual rates of improvements



50% of countries achieve target of 5000 per 100,000

Target achievement at Mongolian rates of improvements



67% of countries achieve target of 5000 per 100,000



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Input costs (2012 US\$)

Cost	Low-income countries	Lower middle-income countries	Upper middle-income countries
Unit cost per surgical procedure	\$180	\$220	\$330
Construction cost per operating room	\$300,000	\$400,000	\$1,900,000

Source: Gibbons et al. 2010; Personal communications

Total cost (2012 billion US\$) of surgical scale-up, 2012-2030

Cost	Low-income countries	Lower middle-income countries	Upper middle-income countries
Secular rates of scale-up (5% per year)			
Cost of surgical procedures	14	115	86
Cost of operating rooms	6	37	40
Total cost	20	152	126
Annual cost (% of total health expenditure)	1 (4%)	8 (4%)	7 (1%)
Mongolian rates of scale-up (9% annual)			
Cost of surgical procedures	31	197	91
Cost of operating rooms	13	50	40
Total cost	44	247	131
Annual cost (% of total health expenditure)	2 (8%)	14 (6%)	7 (1%)
Mexican rates of scale-up (23% annual)			
Cost of surgical procedures	76	274	95
Cost of operating rooms	17	50	40
Total cost	93	324	135
Annual cost (% of total health expenditure)	5 (17%)	18 (8%)	8 (1%)

Conclusions

- Surgical scale-up for health system development is substantial but **affordable**
- Extreme scarcity of empirical data
- Questions of human resource capacity, quality and subnational distribution of surgical services are essential

Reference & contact

- Verguet S, Alkire BC, Bickler SW, et al. Timing and cost of scaling up surgical services in low-income and middle-income countries from 2012 to 2030: a modelling study. *Lancet Global Health* 2015; 3: S28-37.
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