

Introduction

- Expenditure on medicines in developing countries is substantially lower than in developed countries:
 - Limited evidence on size of disparities in actual utilization.
 - Prices may be lower, so disparity in consumption levels may be less.
 - Access to medicines an important aspect of scaling up healthcare coverage.
- Paucity of research assessing levels of medicines utilization in developing countries:
 - Most assessments look at monetary value of medicines utilization (e.g., WHO World Medicines Report).
 - Assessment of utilization in terms of daily defined dosages (DDD) is rare.

Estimation of medicine consumption

- Potential data sources for assessing medicines utilization in developing countries:
 - Government prescribing or sales registers
 - IMS – a private market research company
- Conversion of medicines data using daily defined dosage (DDD) methodology into comparable measures of quantities.
- For developing countries these data sources either do not exist or have not been used by researchers.

Sri Lanka study questions

- How is expenditure on medicines split between public and private sectors?
- How much medicines do Sri Lankans consume and how does this compare with advanced economies?
- How does the consumption pattern vary with advanced economies?
- How do prices for comparable units of medicines compare between public and private sectors?
- What would be the costs in expanding coverage in access to medicines for key NCD medicines?

Sri Lanka health system (2008)

- Lower middle income economy
 - GDP/capita PPP\$ 4,600
- Total health expenditure
 - 3.5% of GDP
- Mixed financing/delivery system, with parallel public and private sectors
 - Public financing 48%
 - Private financing, mostly OOP 52%

Sri Lanka health system

- Medicines provision is split between private and public health sectors:
 - Public sector
 - Medicines purchased and supplied free to inpatients and outpatients.
 - MOH uses centralized, bulk purchasing to procure over 95% of its requirements and all purchases are tracked using a computerized inventory system.
 - Private Sector
 - Medicines supplied by private hospitals to inpatients, and dispensing doctors and retail pharmacies to outpatients, with financing exclusively private.
 - IMS-Health tracks all pharmacy sales, which account for most private medicine distribution.

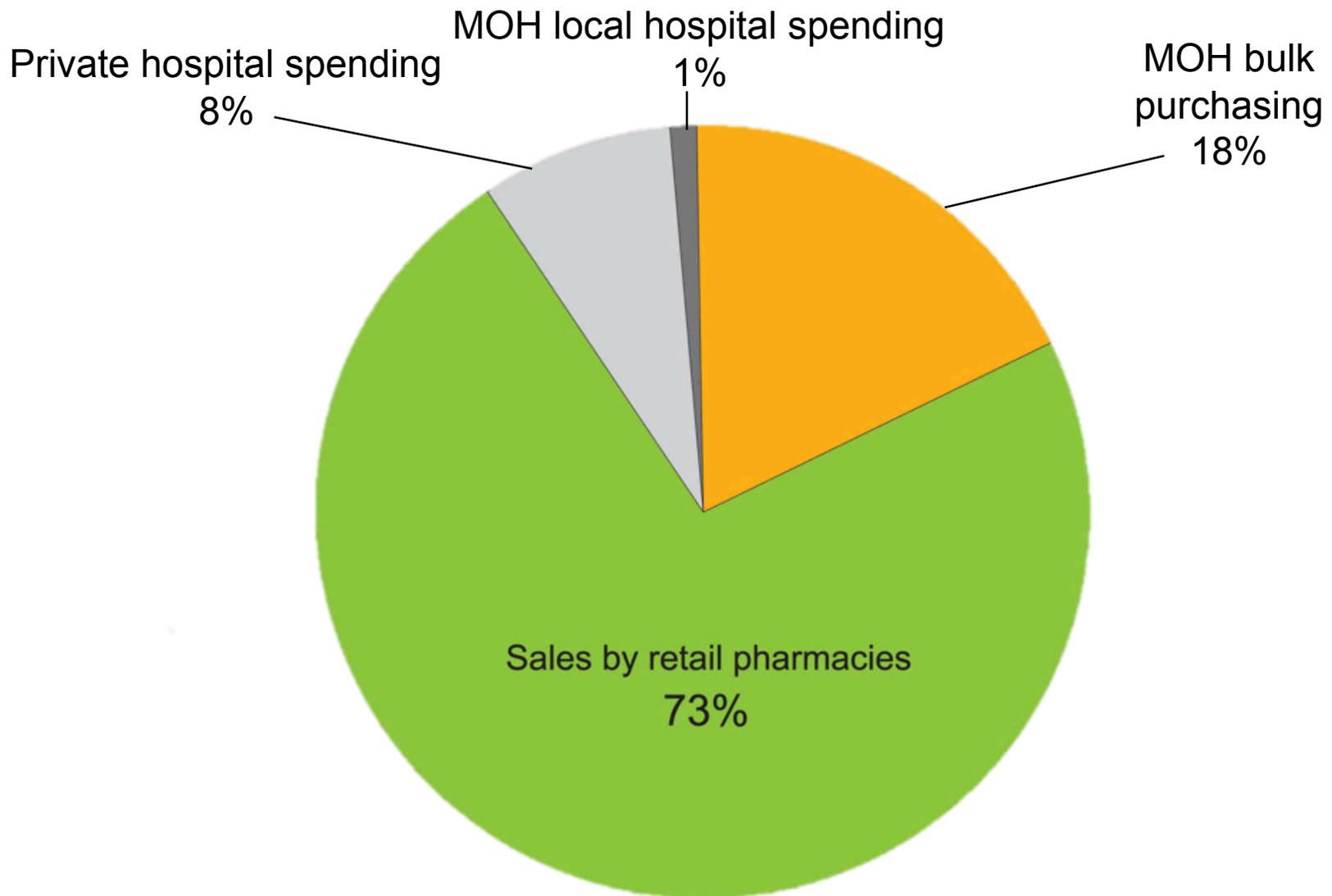
Data sources and methods

- Public sector:
 - Quantity and price data was obtained by generic name and formulation size/form of drugs from the MOH's inventory system for the period 2000-2009.
- Private Sector:
 - Quantity and price data was obtained by generic name and formulation size/form of drugs from IMS-Health. IMS obtain data by running a survey of pharmacies called the Sri Lanka Pharmaceutical Audit.
- Data coverage: 91% of national supply
 - Government central procurement: 95% of government medicines spending
 - Private pharmacies: 90% of private market

Methodology

- Each medicine assigned to WHO ATC code. Then converted to DDD units according to WHO DDD values.
- Final database used to generate estimate of the volume of medicine in DDD units and the total costs by individual medicines.
 - Public sector data – actual purchasing costs
 - Private sector data – sales value at wholesale prices
- Comparisons made with data for OECD countries published in OECD Health data 2010:
 - No data available for making comparisons with other developing countries.
- Comparisons made between price per medicine in private and public sector in Sri Lanka.

How is expenditure on medicines split between public and private sectors?



Total value of medicines expenditure in Sri Lanka in 2007 = Rs 28.4 billion

Note: Study reported analyses only medicines supplied through sales by retail pharmacies and by MOH bulk purchasing. Excluded components accounted for 9% of overall market by value of Rs 2.51 billion

How much medicines do Sri Lankans consume and how does it compare with advanced economies?

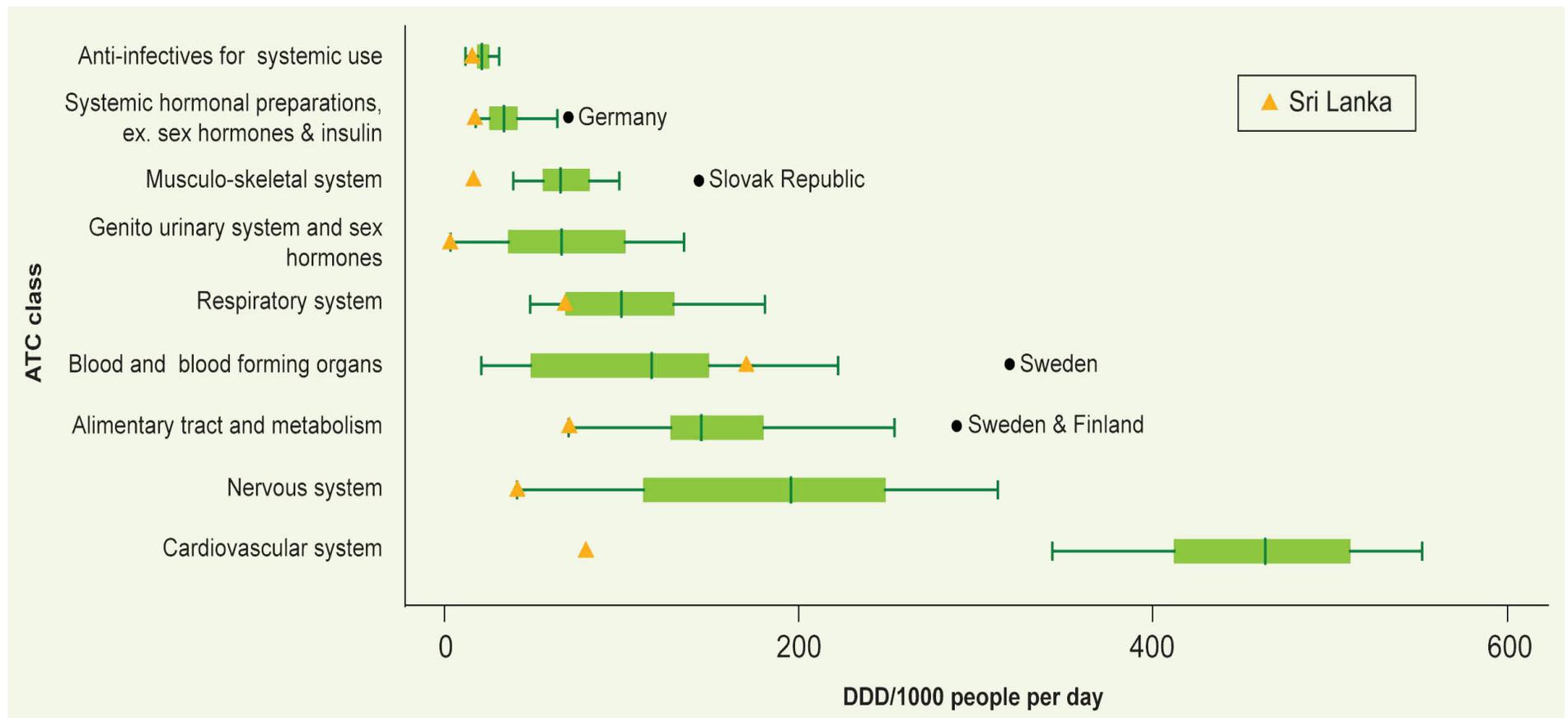
Medicine utilization in Sri Lanka

- Overall consumption of medicines in Sri Lanka amounted to 489 DDDs/1000 capita/day:
 - Approximately one half to one third consumption seen in most developed countries.
- However, disparities in usage vary by type of medicine.
- Minimal differences seen in utilization of anti-infectives and alimentary tract medicines.
- Largest differences in consumption seen in the case of cardiovascular medicine and musculoskeletal medicines.

Medicine consumption in Sri Lanka and median OECD levels, 2008 (DDD/1000 capita/day)

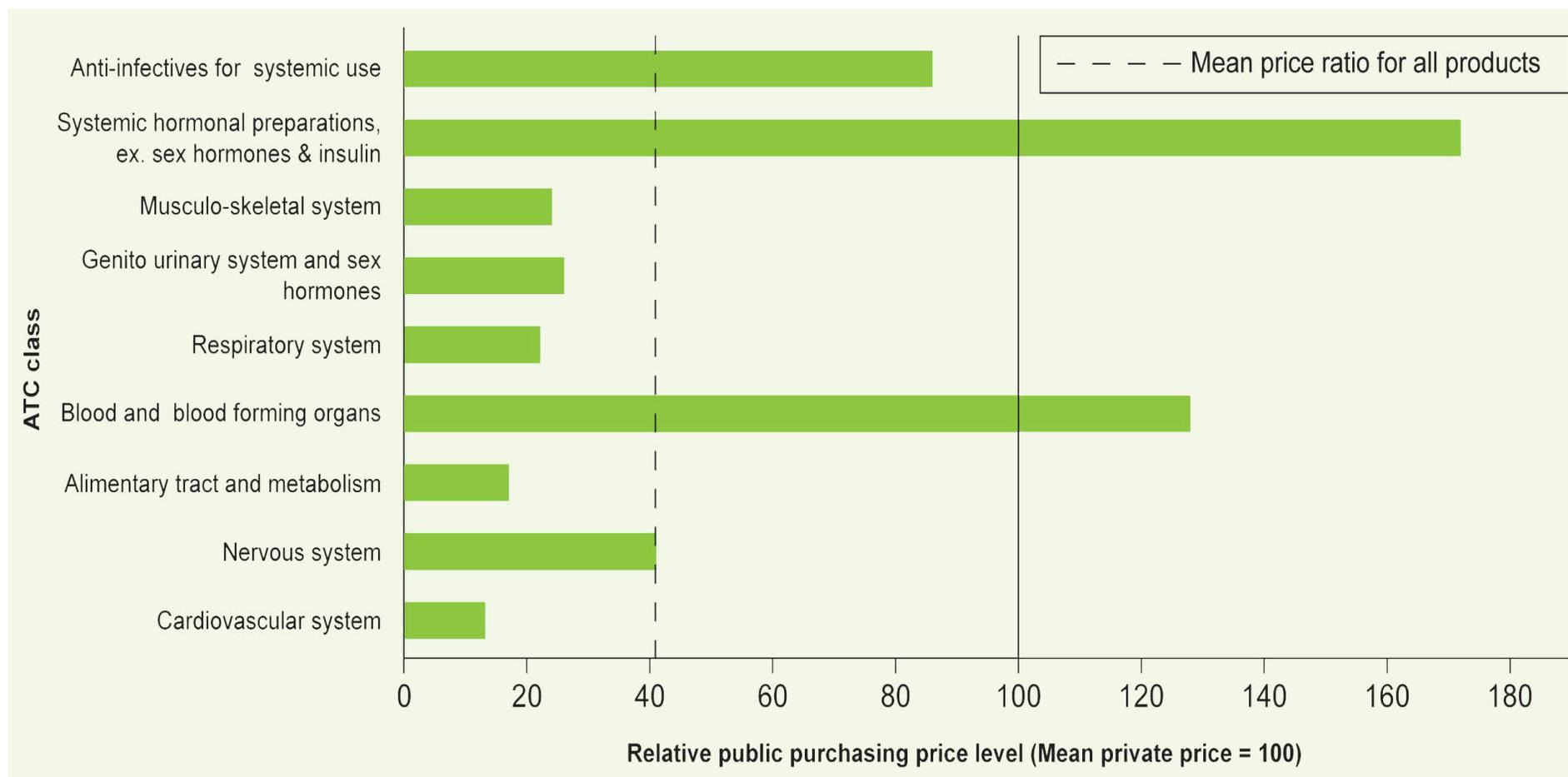
ATC Categories	Sri Lankan consumption	Median OECD consumption	Sri Lanka as % of OECD
Cardiovascular system	80	488	16%
Nervous system	41	191	22%
Alimentary tract & Metabolism	70	174	40%
Blood	169	114	148%
Respiratory system	70	106	66%
Genito-Urinary system	4	75	5%
Musculoskeletal system	18	73	25%
Systemic Hormonal Preps	18	38	47%
Anti infectives	19	22	86%

Medicines consumption patterns in Sri Lanka and OECD countries



**How do prices for medicines
compare between public and
private sectors?**

Ratio of public vs. wholesale purchase prices in Sri Lanka



Medicines prices

- Comparison between private and public sector purchasing highlights that public prices are on average 41% of private sector prices, with weighted mean even lower.
- Lower prices reflect the significant economies of scale MOH achieves through centralized bulk purchasing and tender processes used.
- Cheaper for Sri Lankan Government to scale up short fall in medicines, than for this to be done through private financing.

**How much would it cost to
scale up medicines supply to
reach OECD levels for key NCD
medicines?**

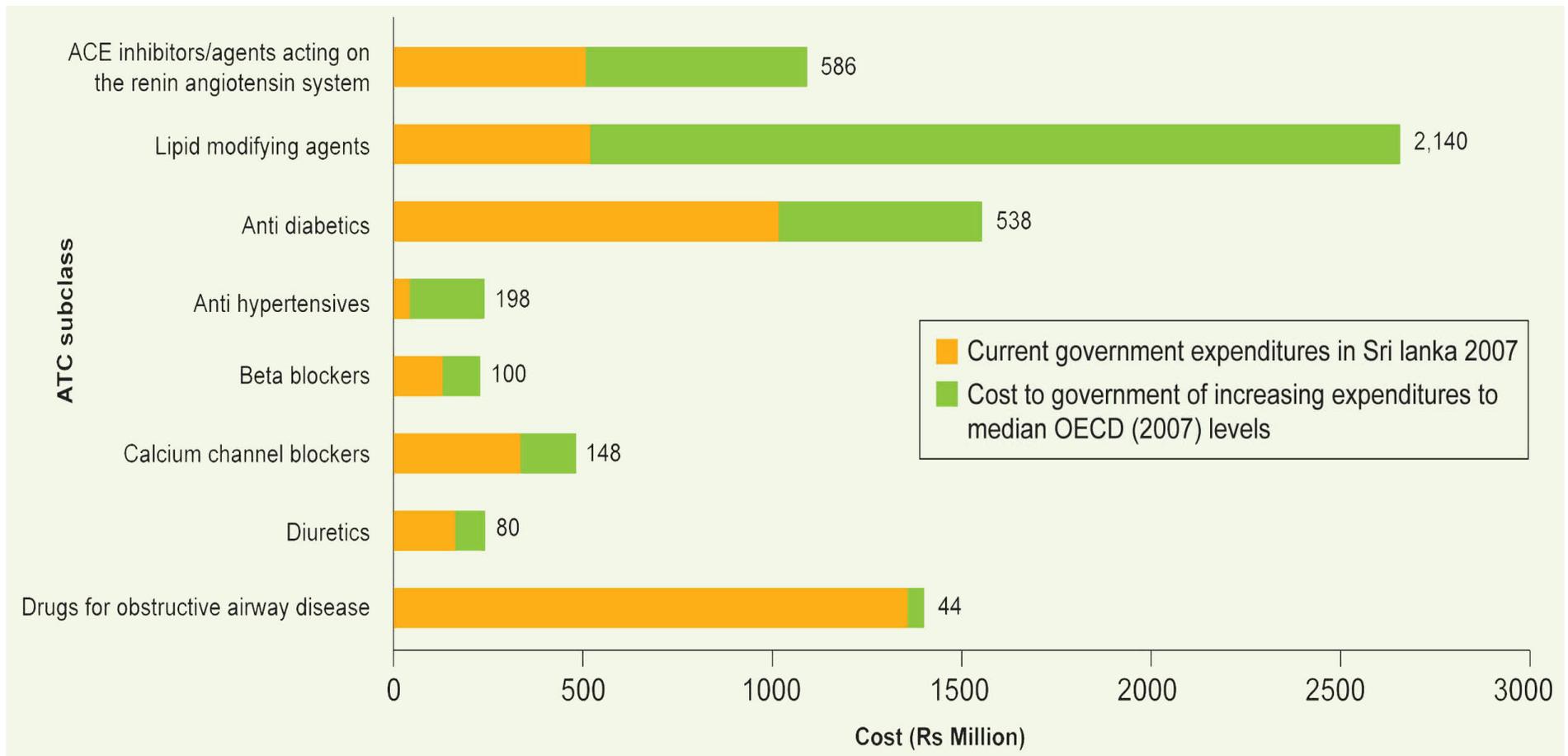
Costs of scaling up medicines

- NCD's account for over 70% of mortality in Sri Lanka with:
 - Heart disease (35%)
 - Cancers (12%)
 - Cerebrovascular conditions (6%)
 - Diabetes (5%)
- Recent findings:
 - Stagnation in male adult life expectancy owing to increased NCD mortality rates.
 - Higher NCD mortality rates especially for IHD and asthma than in OECD countries.
 - Evidence of failure to match recent declines in CVD mortality in OECD countries due to lack of provision of effective medicines for secondary prevention.
- Largest disparity is medicines used for treatment of NCD's according to utilization analysis.

Estimation of costs of scaling up CVD

- Gap in coverage estimated as the volume of IHD and asthma medicines required to increase overall (public and private) utilization to reach median OECD levels.
- Cost estimated as cost to government if desired increase in supply was met solely through increased government provision and procurement, assuming current purchasing costs.
- Analysis undertaken for:
 - Essential medicines for IHD, including secondary prevention with statins
 - Essential medicines for asthma

Cost of scaling up utilization of key NCD medicines in Sri Lanka



Results

- Cost of scaling up key IHD medicines to reach to reach OECD levels:
 - Rs 3,252 million / USD 29.4 million (most of which is statins)
 - USD 1.45 per capita
 - 2% of THE in 2007
- Cost of scaling up key asthma medicines to reach OECD levels:
 - Rs 44 million / USD 400,000
 - USD 0.02 per capita
 - 0.03% of THE in 2007

Conclusions

- Supply of medicines in Sri Lanka is 37% of median OECD levels.
- Public purchasing prices substantially cheaper than private wholesale/retail prices.
- Cost of raising coverage of medicines for IHD and asthma = USD 1.47 per capita:
 - Affordable if implemented through public purchasing.
 - May be cheaper if larger procurements result in lower prices.

Conclusions

- Cost of medicines would not be a major barrier to expanding coverage of key NCD treatments in Sri Lanka and utilization could be raised to median OECD levels at modest additional cost if financing is done primarily through public schemes
- Illustrates the value of using new methods to measure access to medicines in developing countries.

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