

Direct costs and availability of diabetes medicines in low-income and middle-income countries

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Introduction

- Methodology WHO/HAI
- Follow-up 'Price, availability and affordability – an international comparison of chronic diseases' By Gelders S et al. (2006)
- Consultative meeting 19/20 February

Background

- Diabetes management: to control blood glucose concentration and to limit the chance for complications
- Essential medicines: Metformin, Glibenclamide and Insulin
- Monitoring equipments and syringes
- Literature study:
 - Medicine costs largest part
 - Treatment costs type 1 higher than type 2
- Patient price: manufacturer price + additional costs

Methodology

- Objective: characterize costs and availability of diabetes medicines by country, WHO region and World Bank income group
- Primary data
 - International Diabetes Federation (IDF)
 - International Insulin Foundation (IIF)
 - World Integrated Trade Solution database (WITS)
 - World Health Organization & Health Action International (WHO/HAI)
 - IMS-Health
- Secondary analysis: Prices adjusted for CPI and PPP



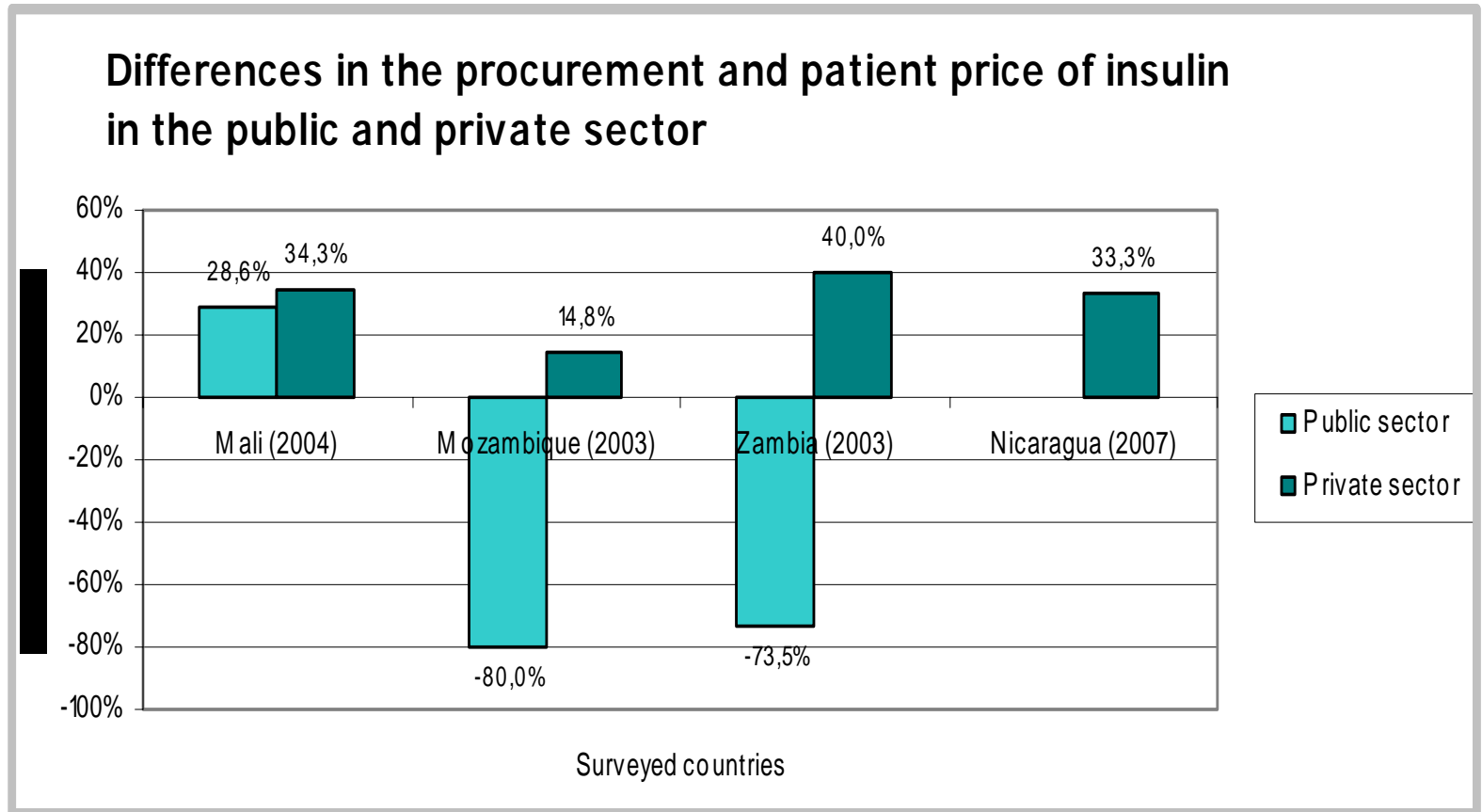
International Diabetes Federation

- Four global surveys to identify barriers for accessing insulin and diabetes supplies
- Methodology
 - 35 participating countries
 - Questionnaire
- Results
 - Insulin was expensive and not available in rural areas
 - Costs of diabetes treatment varied between countries

International Insulin Foundation (I)

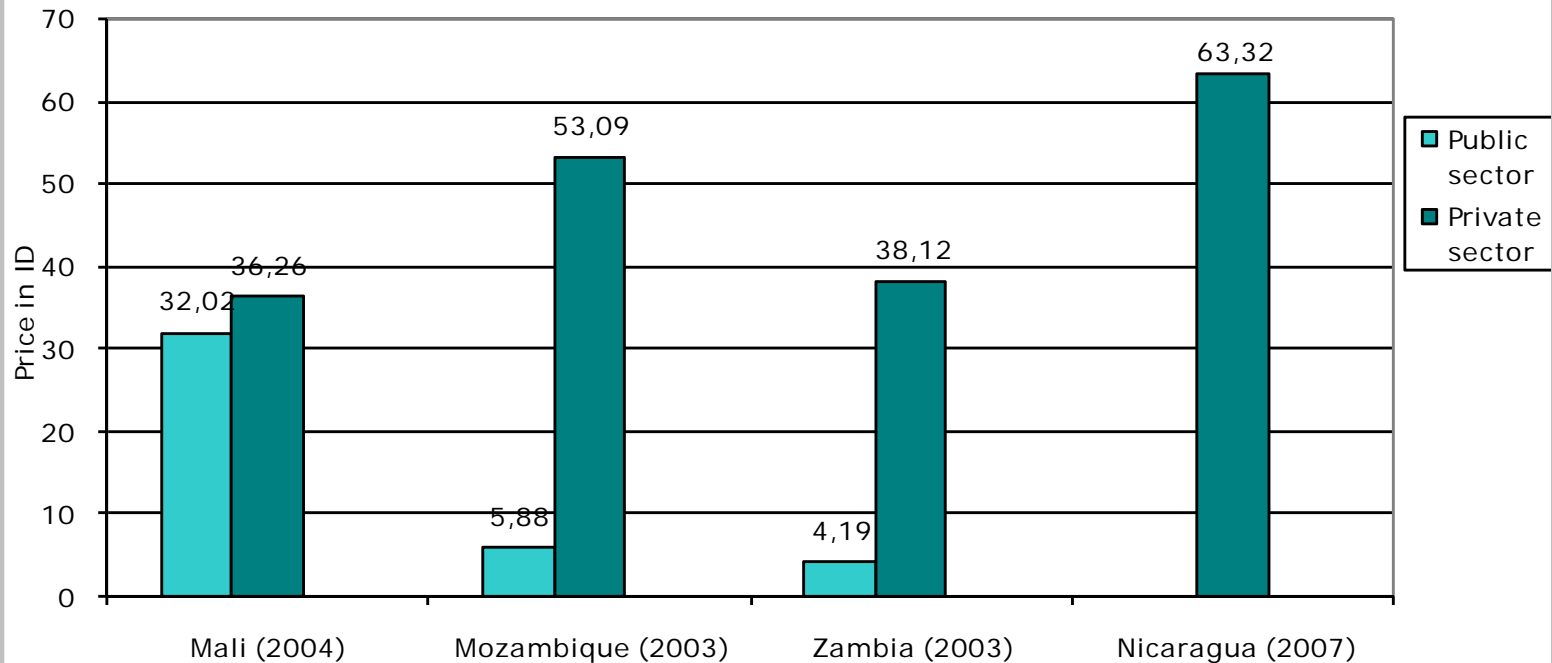
- Rapid Assessment Protocol for Insulin Access (RAPIA)
- Mali, Mozambique, Zambia and Nicaragua
- Results:
 - Low availability → Quantities were estimated on past consumptions & poor communication
 - Low mark-ups
 - High patient prices of insulin
 - High travel costs

International Insulin Foundation (II)

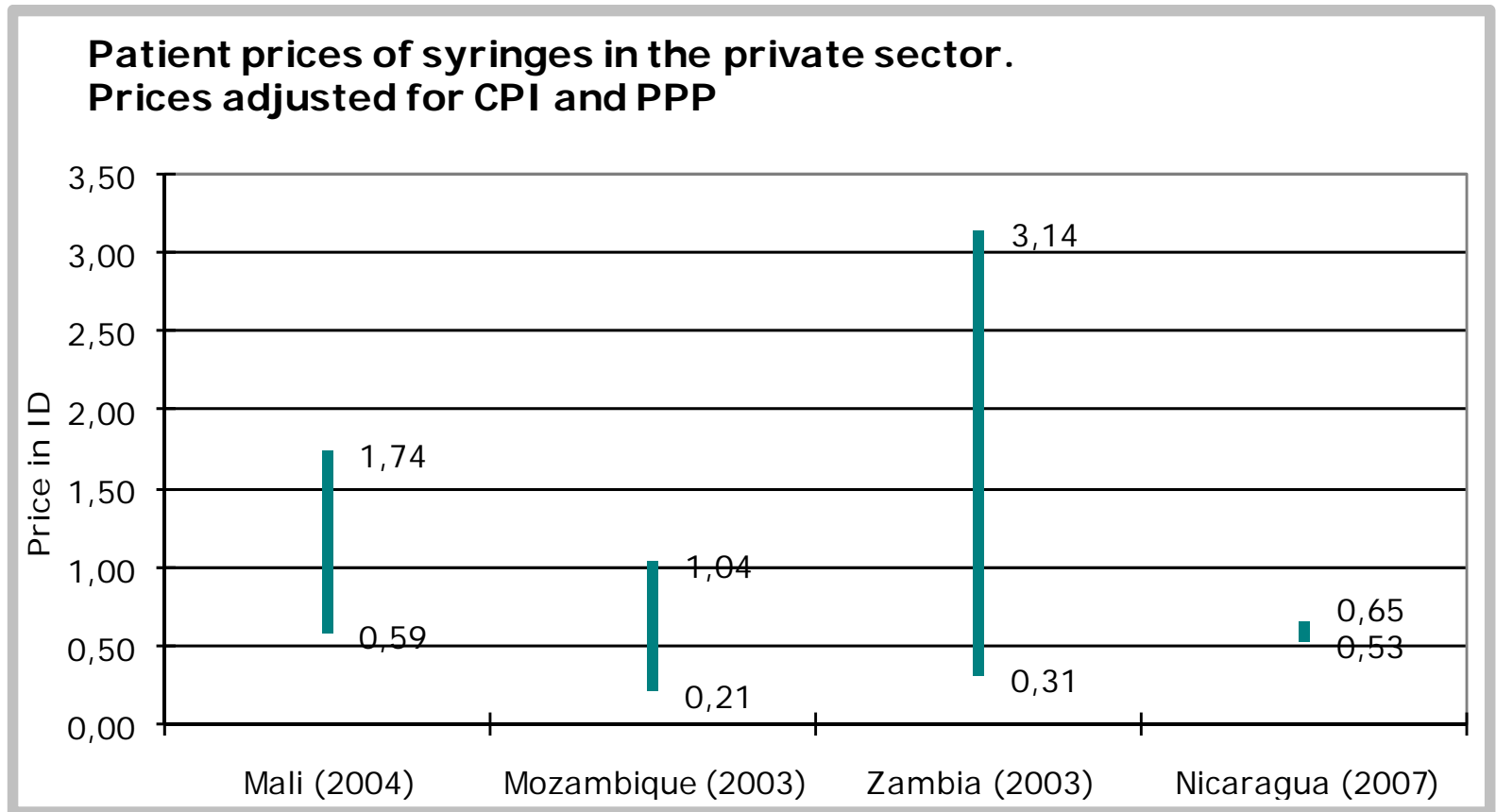


International Insulin Foundation (III)

**Patient prices of insulin in different sectors.
Prices adjusted for CPI and PPP.**



International Insulin Foundation (IV)



WITS database (I)

- Import tariffs: custom duties set by the government of the importing country
 - Provide little revenue
 - Influence the price for the patient
 - Not effectively used to protect local industry

WITS database (II)

Import tariffs charged on finished products containing insulin.

Tariffs rate (%)	Number of countries		Low-income countries	Lower-middle-income countries	Upper-middle-income countries	High-income countries
0	92 (70%)		20	19	25	27
0-5	22 (17%)		6	13	3	0
5.1-10	11 (8%)		3	4	1	3***
10.1-20	6* (5%)		1	2	3	0
>20	1** (1%)		0	1	0	0
Total	132		30	39	32	30

* Countries with a 10.1-20% tariffs were Brazil, Uruguay, Argentina, Tunisia, Peru, India

** Islamic Republic Iran (52%)

*** Republic Korea, Austria and Israel

WITS database (III)

Comparison of the charged tariffs on insulin products between the year 2005 and 2008

Tariff range	Year 2005	Year 2008
0%	75	92
0-5%	25	22
5.1-10%	17	11
10.1-20%	6	6
>20%	3	1
Total	126	132

World Health Organization/ Health Action International (I)

- Data from 47 surveys
- Results:
 - Wide variety between countries
 - Good procurement prices
 - High mark-ups (public sector)
 - Availability better in the private sector than in the public sector

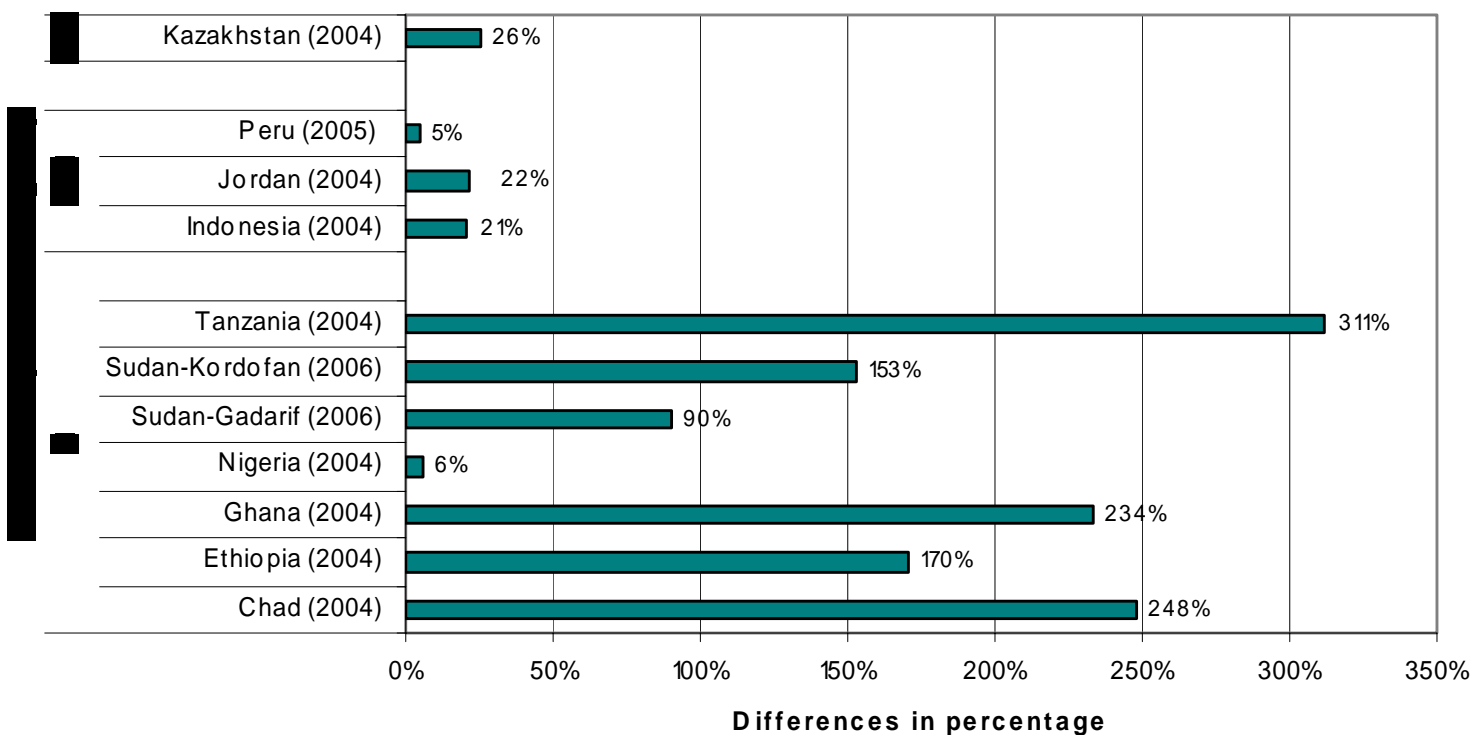
World Health Organization/ Health Action International (II)

Public procurement price of glibenclamide 5 mg and metformin 500 mg, expressed as MPR, classified by GNI group. (Adjusted for MSH2003 and CPI)

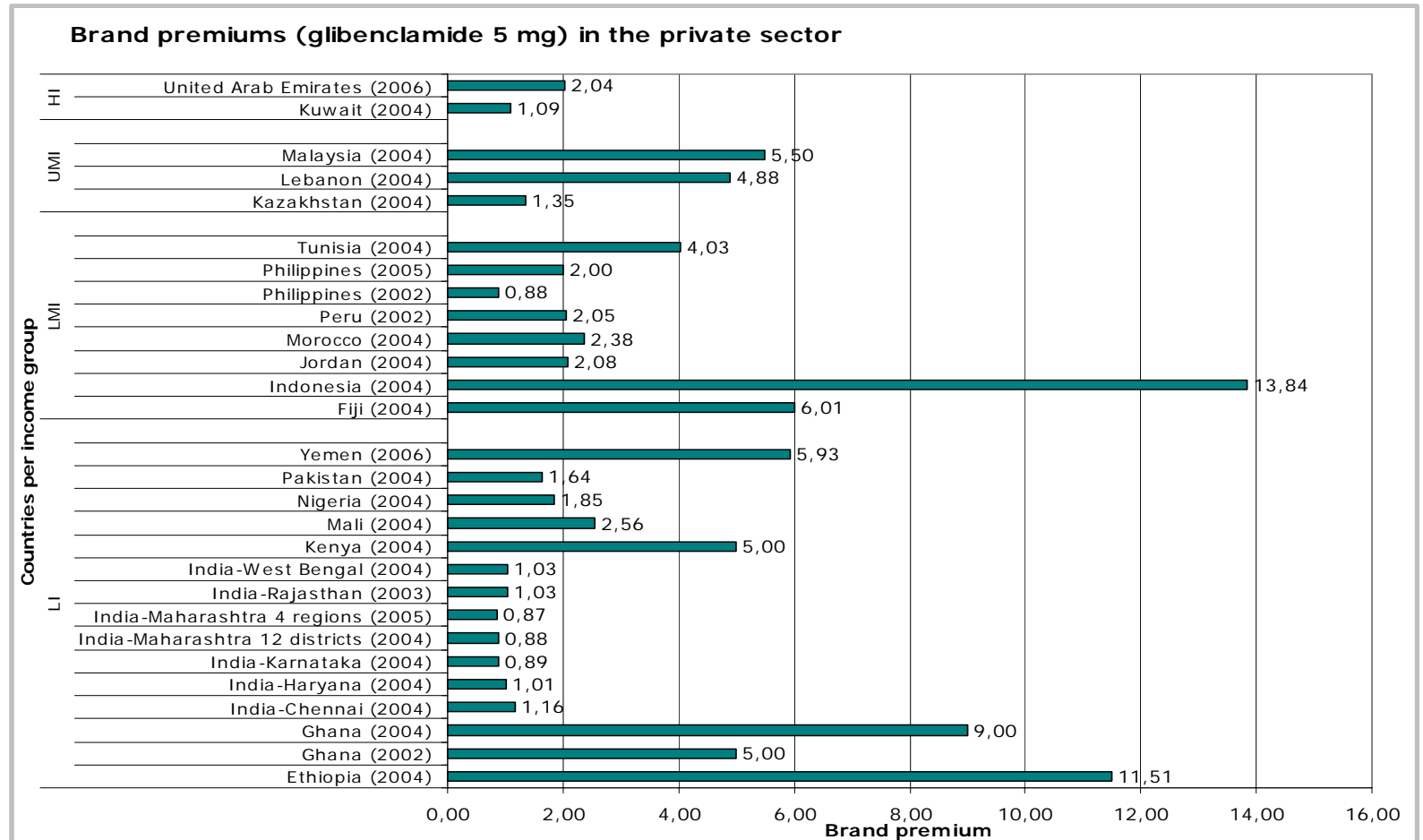
GNI group		Glibenclamide		Metformin	
		OB	LPG	OB	LPG
LI	Min		0.27		0.71
	Max		17.37		2.89
	Median		0.94		0.75
	N		19		13
LMI	Min		0.30	1.13	0.39
	Max		4.52	9.54	8.17
	Median		1.04	6.98	1.34
	N		8	4	5
All	Min		0.27	1	0.17
	Max		17.37	9.54	8.17
	Median		1.02	4.01	0.72
	N		32	7	21

World Health Organization/ Health Action International (III)

Differences between the procurement and patient price in the public sector for the LPG of glibenclamide 5 mg



World Health Organization/ Health Action International (IV)



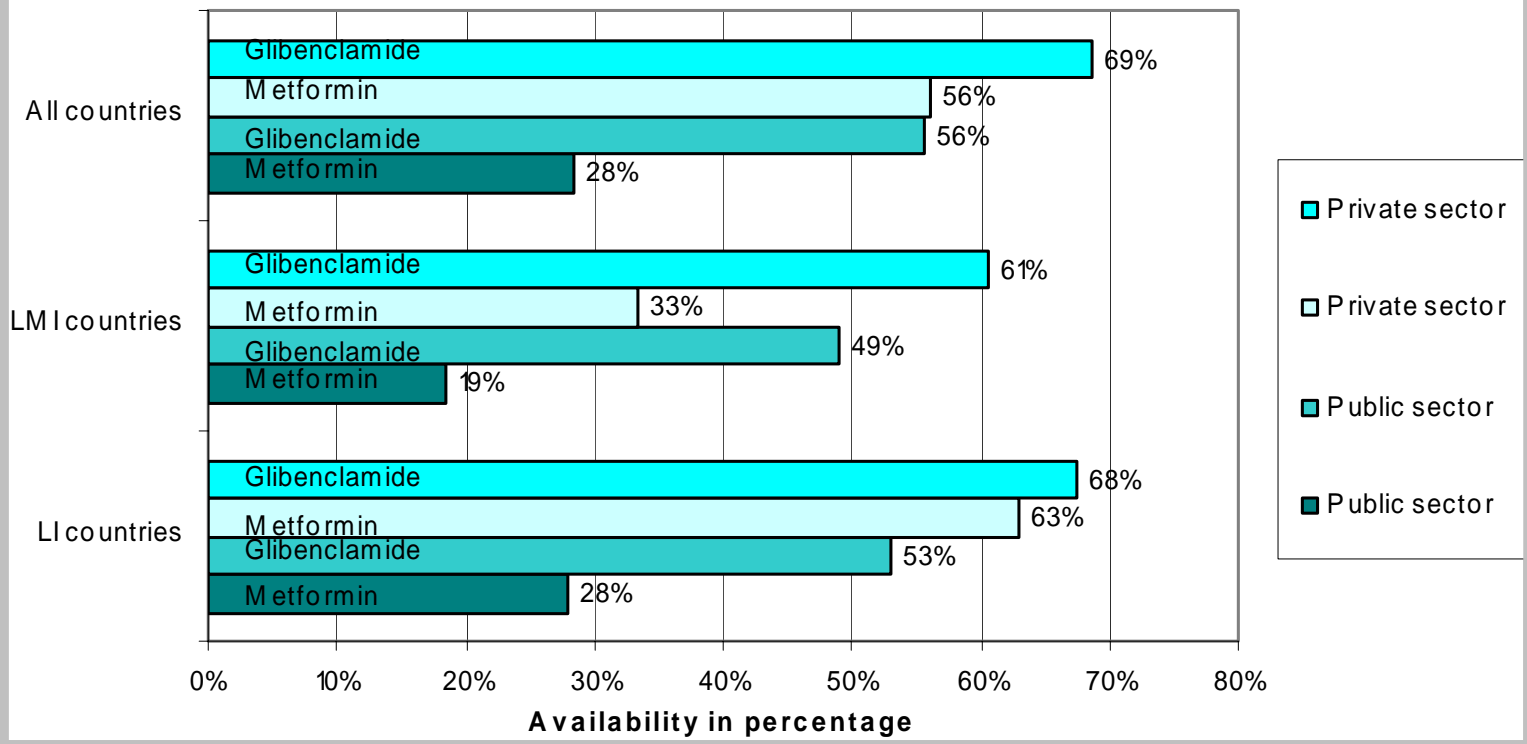
World Health Organization/ Health Action International (V)

Pricing data of glibenclamide 5 mg in different sectors, expressed as MPR, classified by GNI group. Data adjusted for MSH2003, CPI and PPP.

GNI group	Country	Public sector		Private sector	
		Patient price		Patient price	
		OB	LPG	OB	LPG
LI	Min		5.64	18.09	5.87
	Max		39.42	279.32	59.40
	Median		19.83	33.96	20.91
LMI	Min		1.94	31.17	5.19
	Max		56.97	254.43	194.00
	Median		12.04	104.94	37.28
All	Min		1.94	12.77	5.19
	Max		56.97	279.32	194.00
	Median		17.65	75.68	21.03

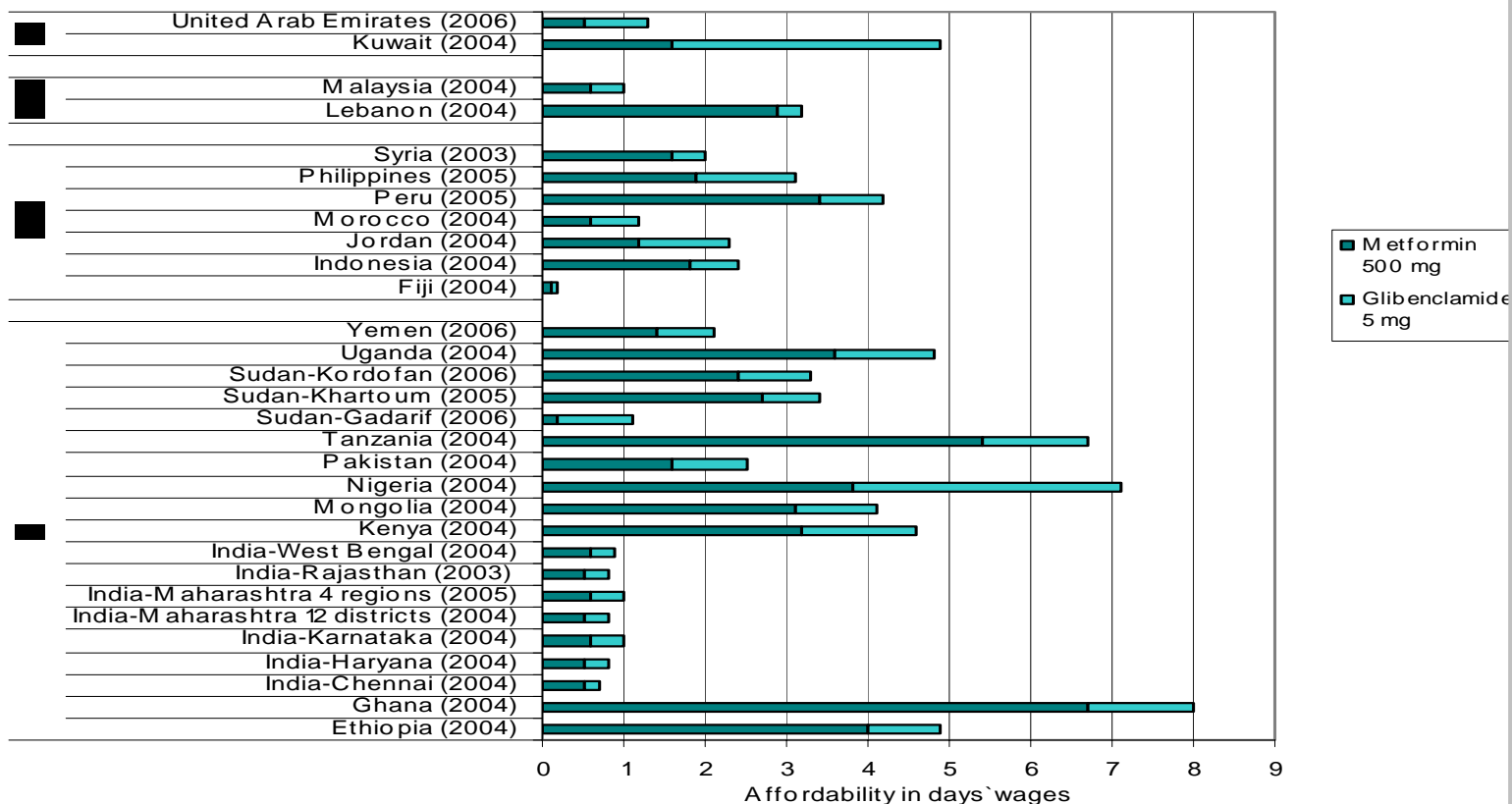
World Health Organization/ Health Action International (VI)

Availability of the LPG of glibenclamide 5 mg and metformin 500 mg in the private and public sector of 33 countries



World Health Organization/ Health Action International (VII)

Affordability of one months therapy with the LPG of glibenclamide (5 mg, 2 times a day) and the LPG of metformin (500 mg, 3 times a day) in the private sector



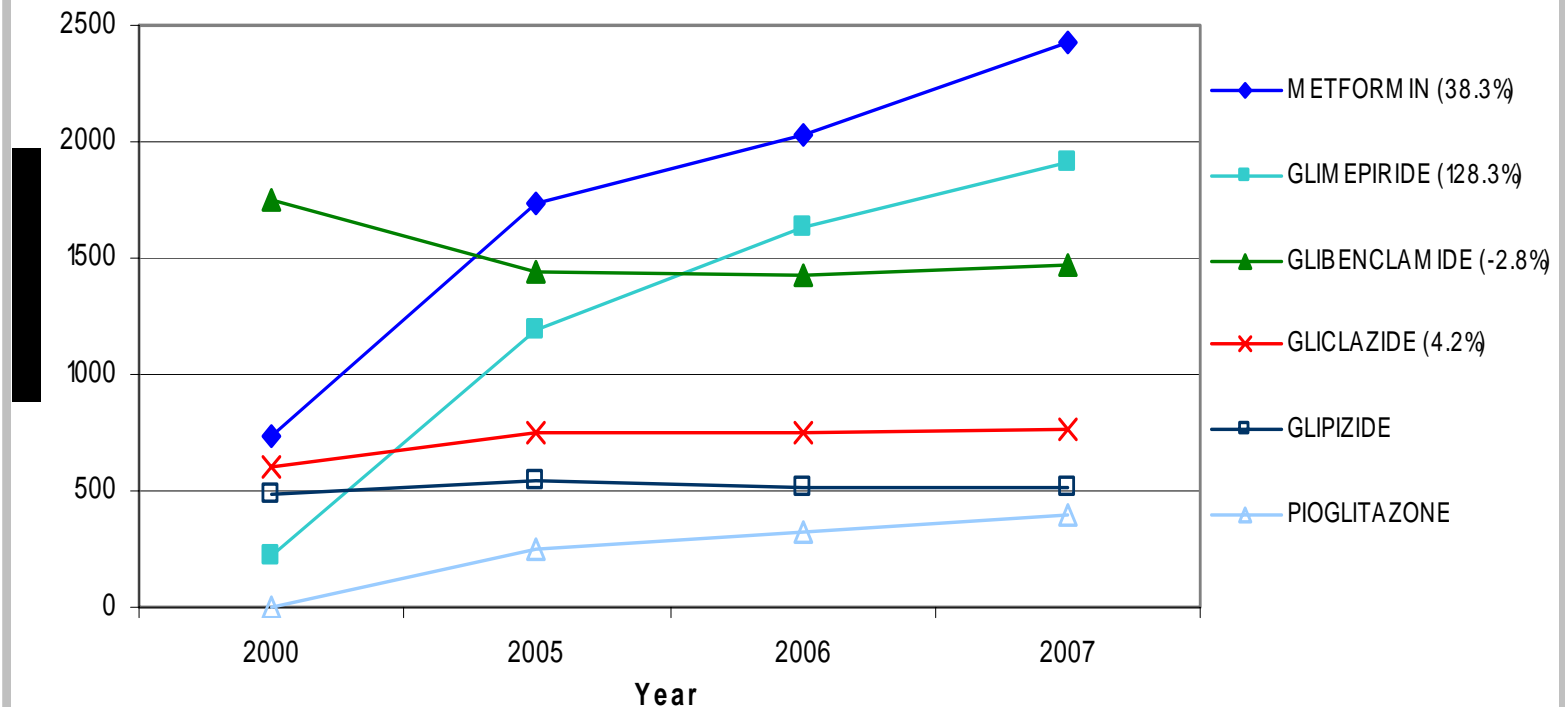
IMS-Health (I)*

- 49 low-income and middle-income countries
- 2000, 2005, 2006 and 2007
- Defined Daily Dose

- Results:
 - Increased consumption of metformin
 - Decreased consumption of glibenclamide
 - Increased total consumption of oral hypoglycemic agents and insulin in low-income and middle-income countries

IMS-Health (II)*

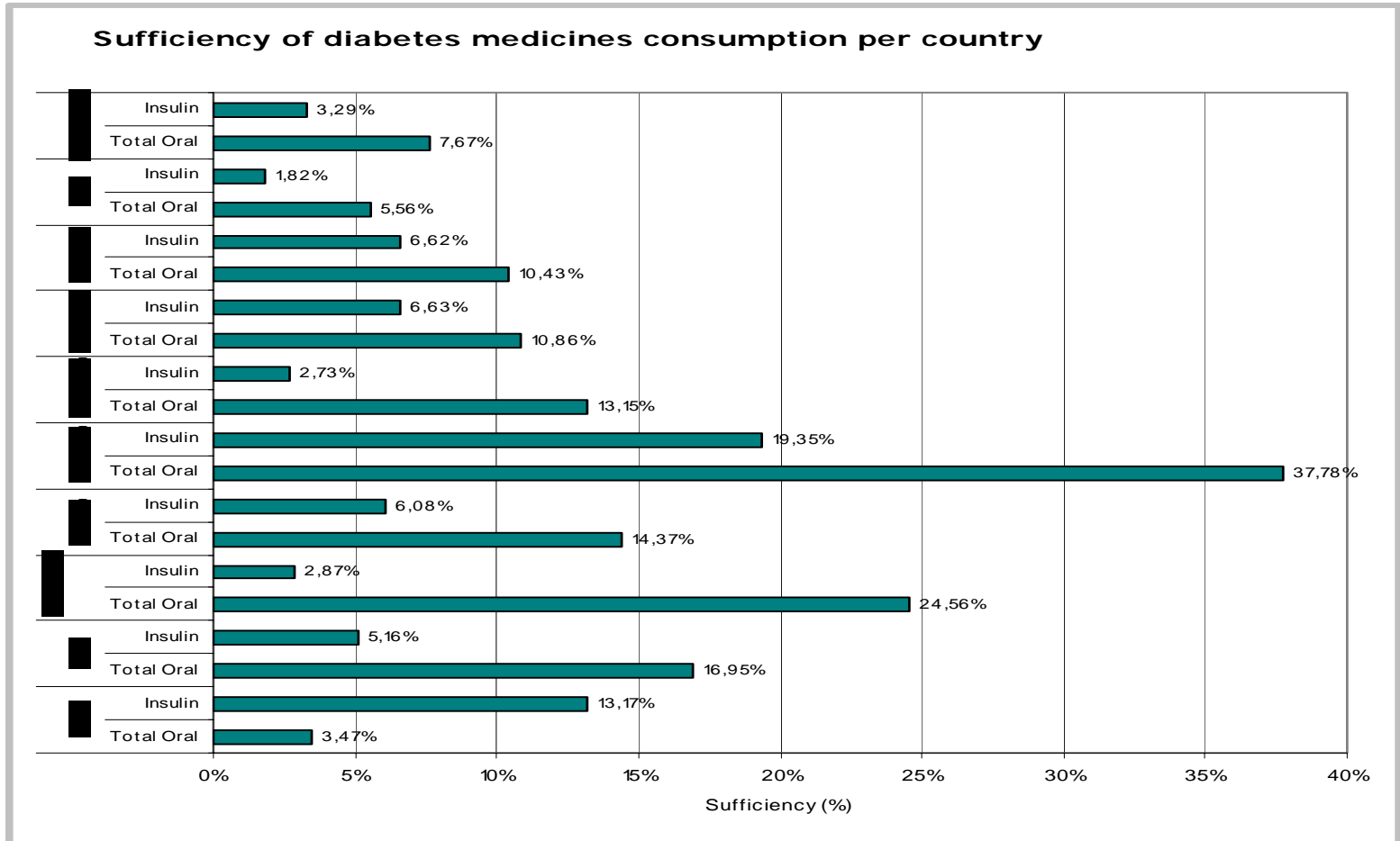
Trend of oral hypoglycaemic agent consumption in 49 low-income and middle-income countries (% growth by year)



IMS-Health (III)*

Annual increase rates of oral hypoglycaemic agents and insulin by income group		
GNI -group	Annual increase rate (overall for 6 years from 2000 to 2007)	
	Oral hypoglycemic agents	Insulin
Low-income countries	16.6%	12.7%
Lower-middle-income countries	13.8%	36.0%
Upper-middle-income countries	15.4%	15.9%
Total	15.5%	21.3%

IMS-Health (IV)



Discussion/Conclusion

- Objective: characterize costs and availability of diabetes medicines by country, WHO region and World Bank income group
 - Variety per country
 - Availability: Medicines not sufficient. Poor communication, estimations based on past consumption. Availability better in the private sector than in the public sector.
 - Price: Taxes & tariffs. Low procurement price of metformin and glibenclamide, high procurement price of insulin. Large differences between the procurement price and patient price.

Recommendations

- Governments should be aware of the low availability and large differences
- Reasons for the large differences should be investigated
- Differential pricing initiatives should be promoted
- Procurement in the public sector should be funded
- Competition should be stimulated
- Quality assured generics should be promoted
- Price and availability reporting mechanism should be available at each WHO-region
- More detailed information per country is needed



Questions?
