

# Determinants of prices of ARV drugs in the Developing World:

## Brands vs. Generics, a needless or meaningful battle?

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ETAPSUD project



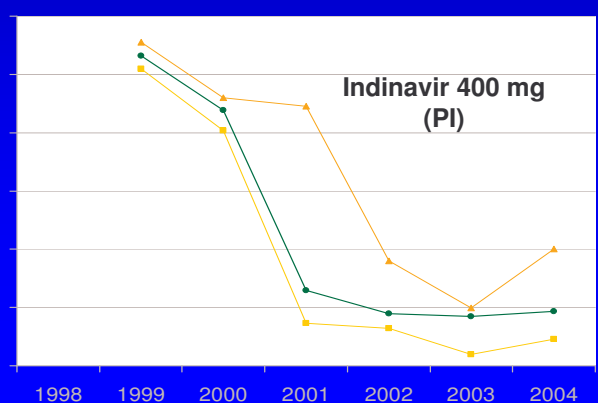
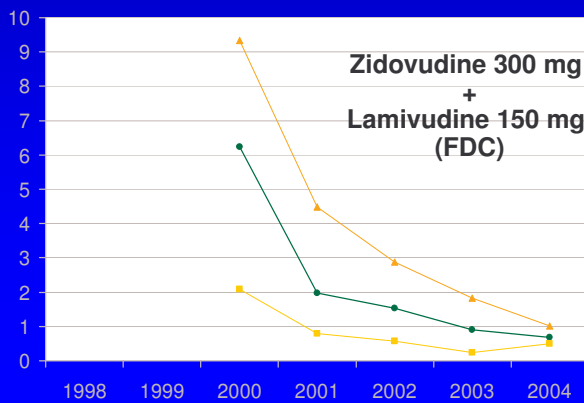
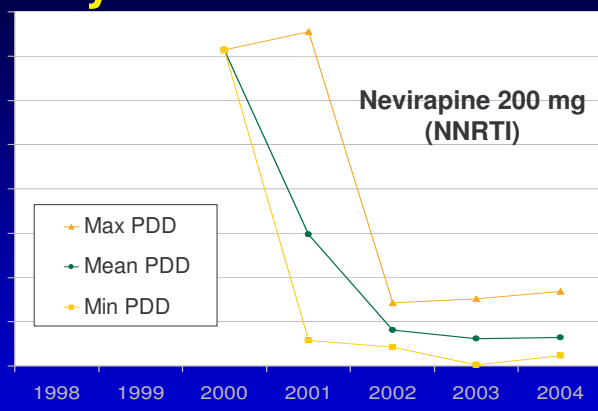
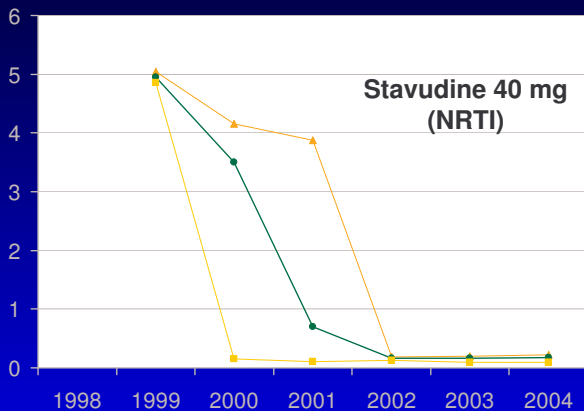
(Evaluation of Access to HIV Cares in Developing Countries)

## Issues about differential pricing of ARV drugs in Developing Countries

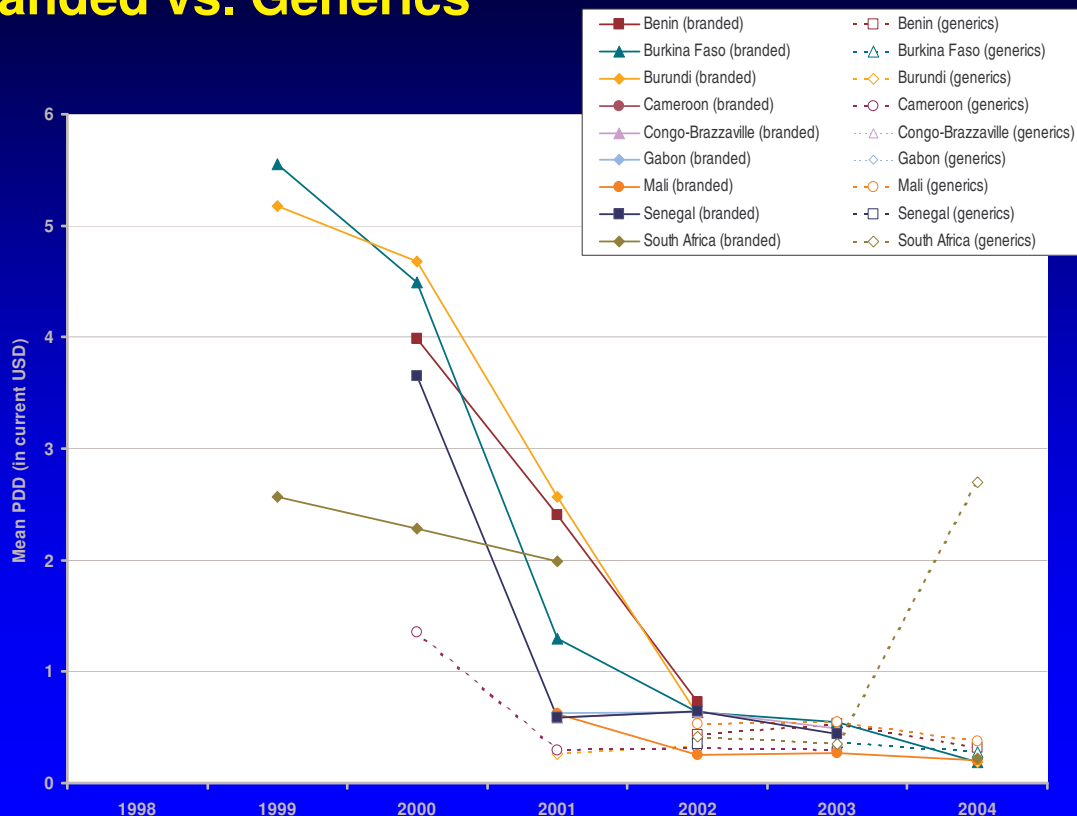
- ARV drug cost still account for a major part of total incremental cost of access to ART
- Short term minimization of drug costs remains a key determinant of first line treatment guidelines for low resource settings (WHO 2002)
- Large scale emerging ARV markets in developing countries (GFTAM + “3 by 5” + WB-MAP + ...)



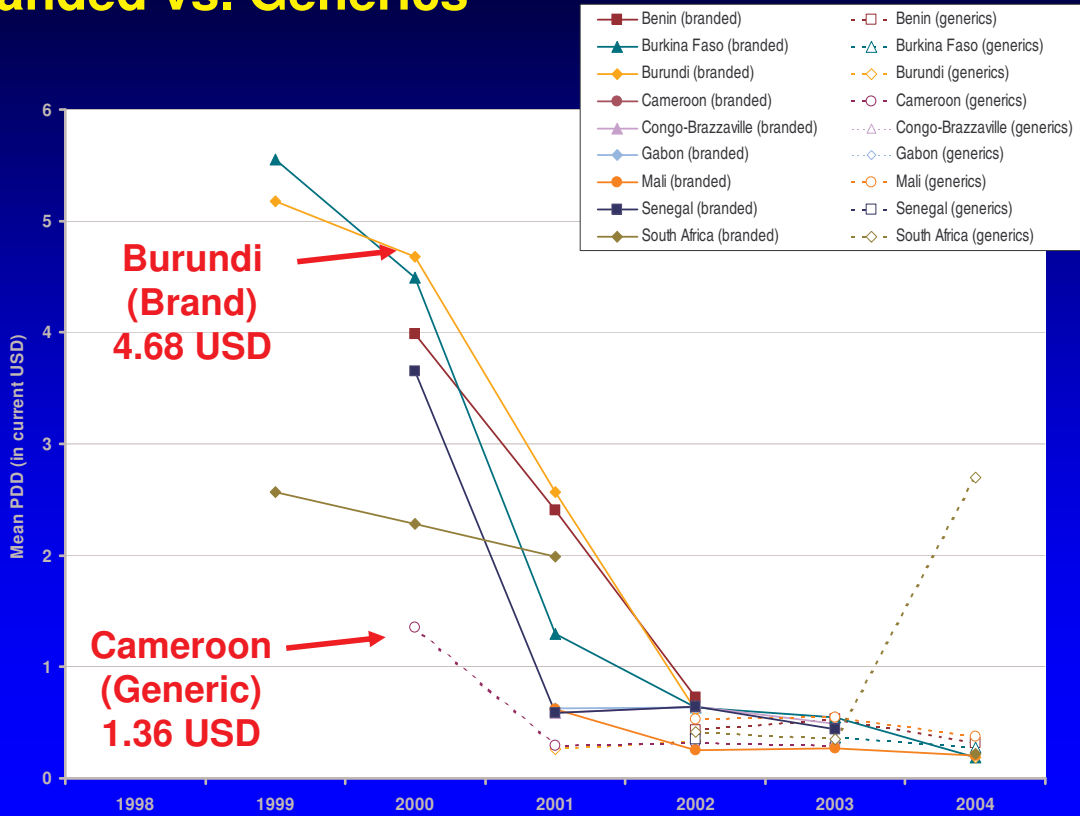
# Evolution of prices of ARV in Africa: ... and a decrease of variability between countries



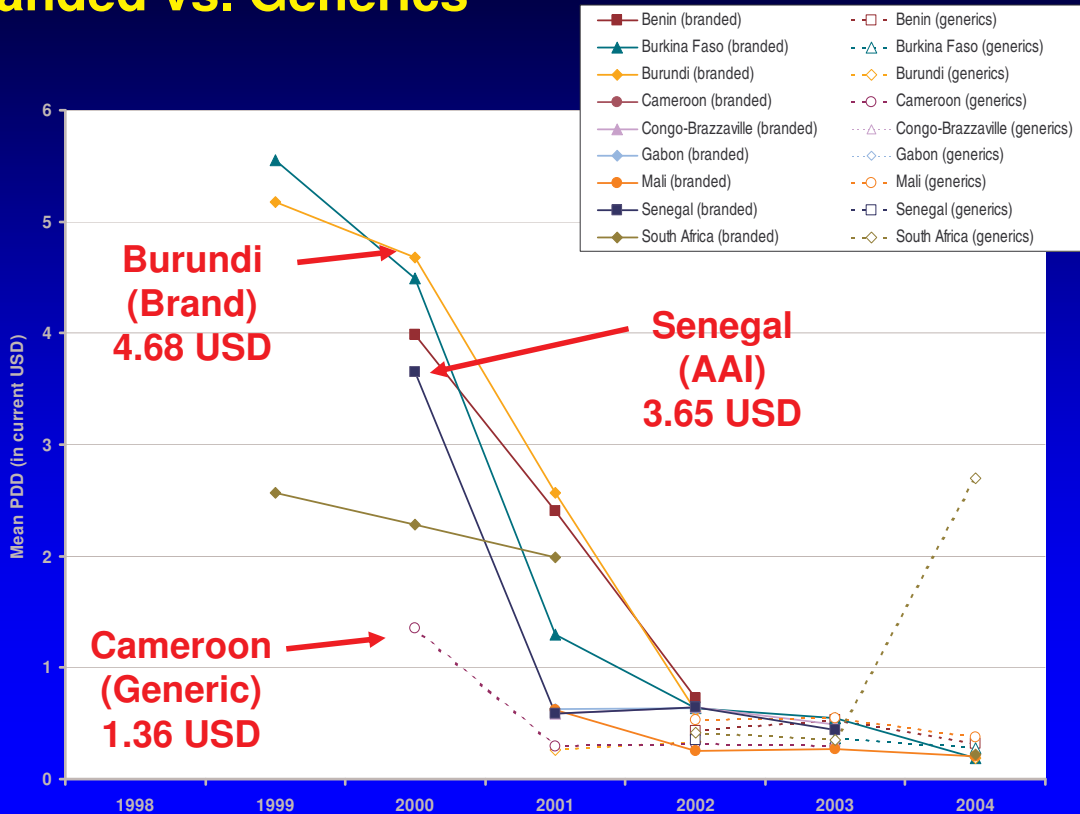
# Evolution of prices of Lamivudine 150 mg: Branded vs. Generics



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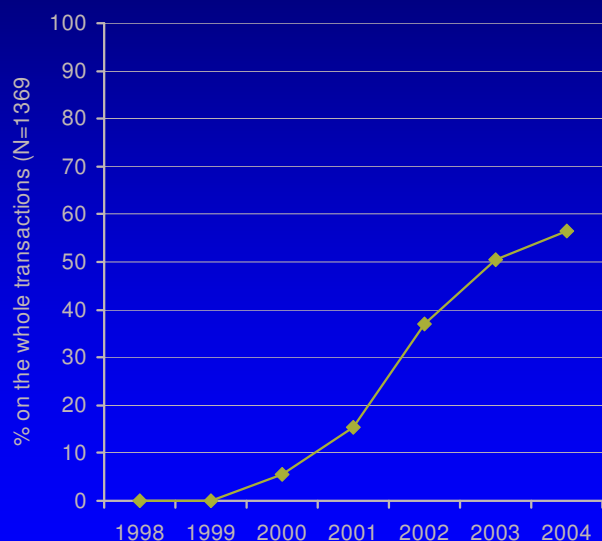


# Evolution of prices of Lamivudine 150 mg: Branded vs. Generics

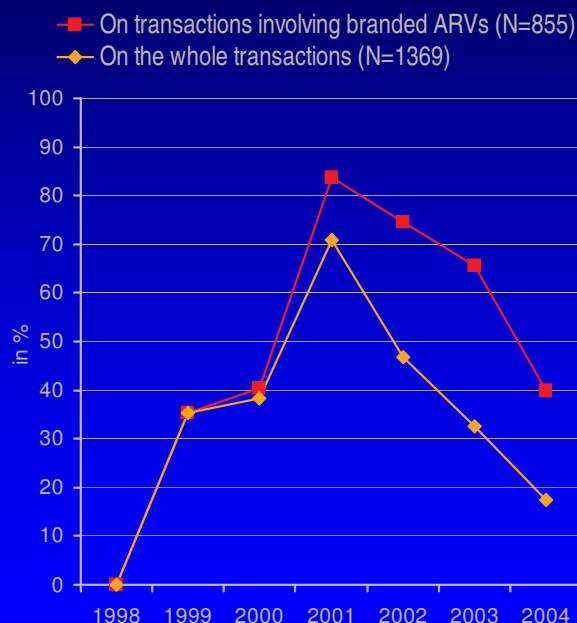


# Evolution of prices of ARV in Africa: Branded vs. Generics

Evolution of part of transactions...

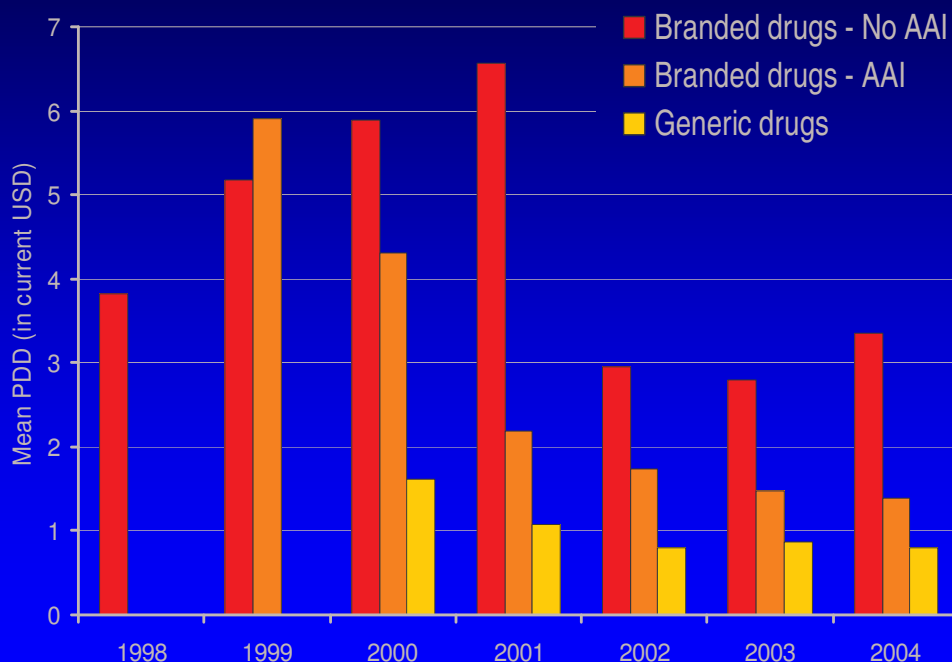


... involving generic drugs



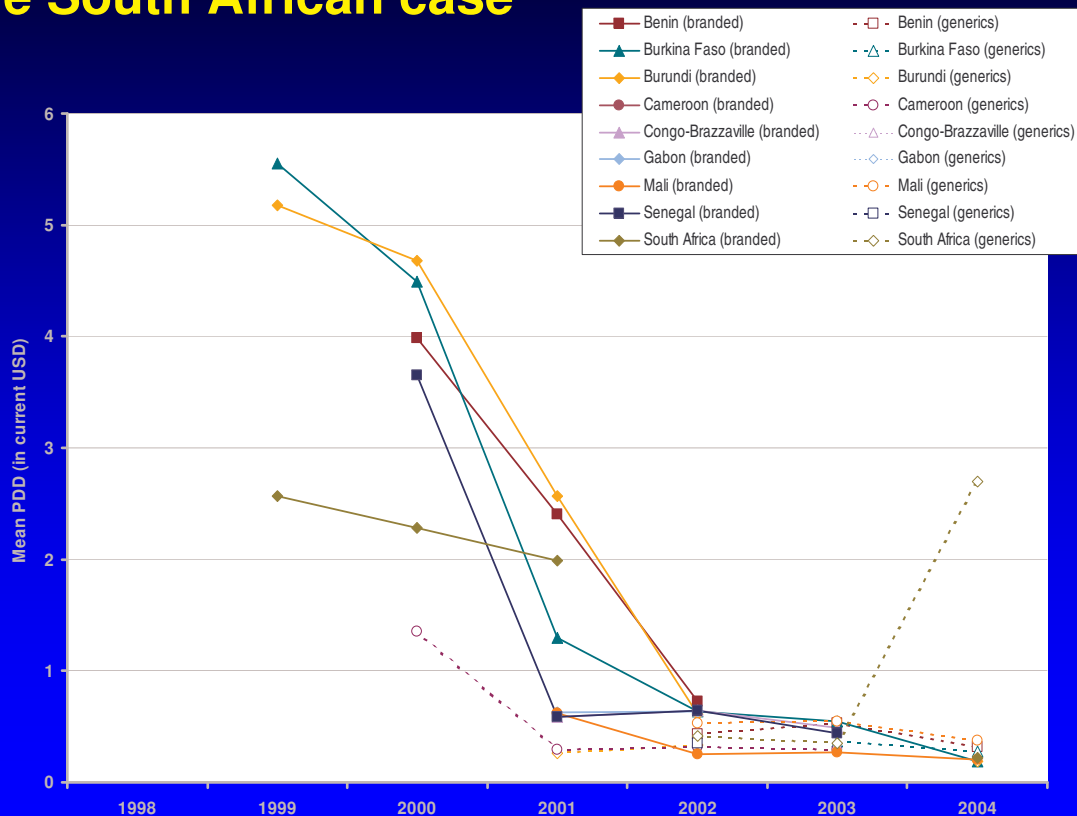
... done through the AAI

# Evolution of prices of ARV in Africa: Importance of the context of the transaction

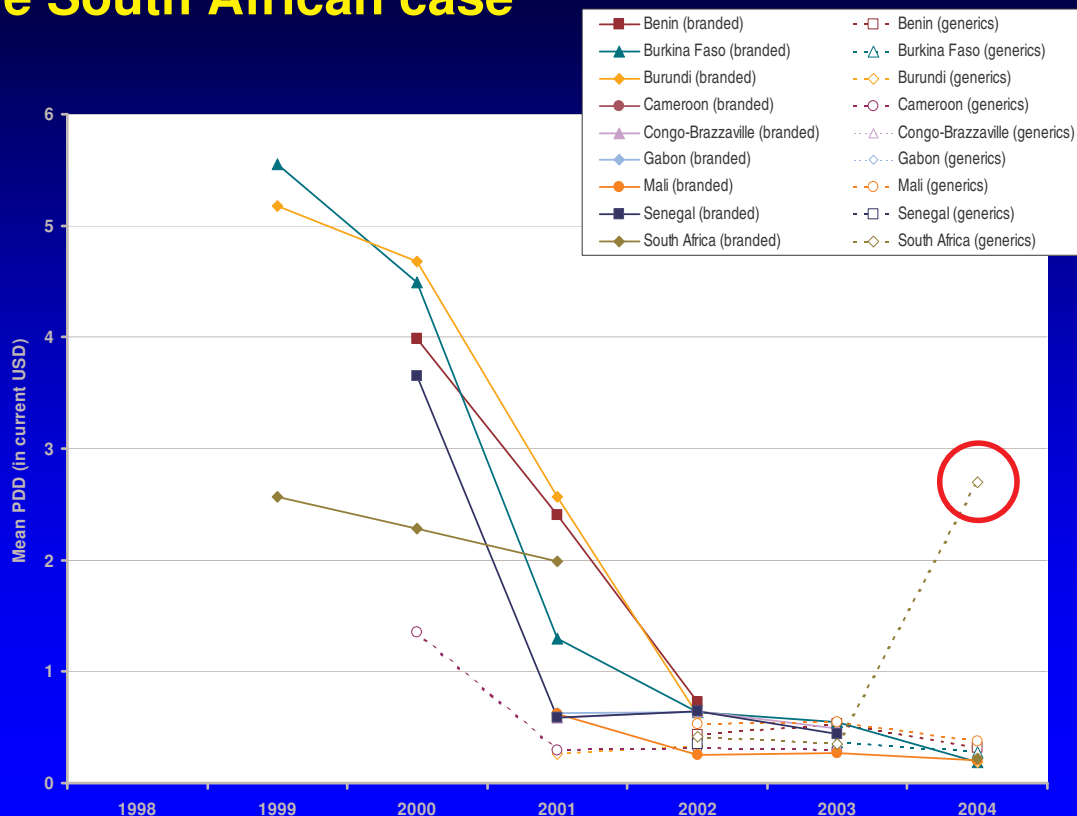


On whole drugs (N=1369)

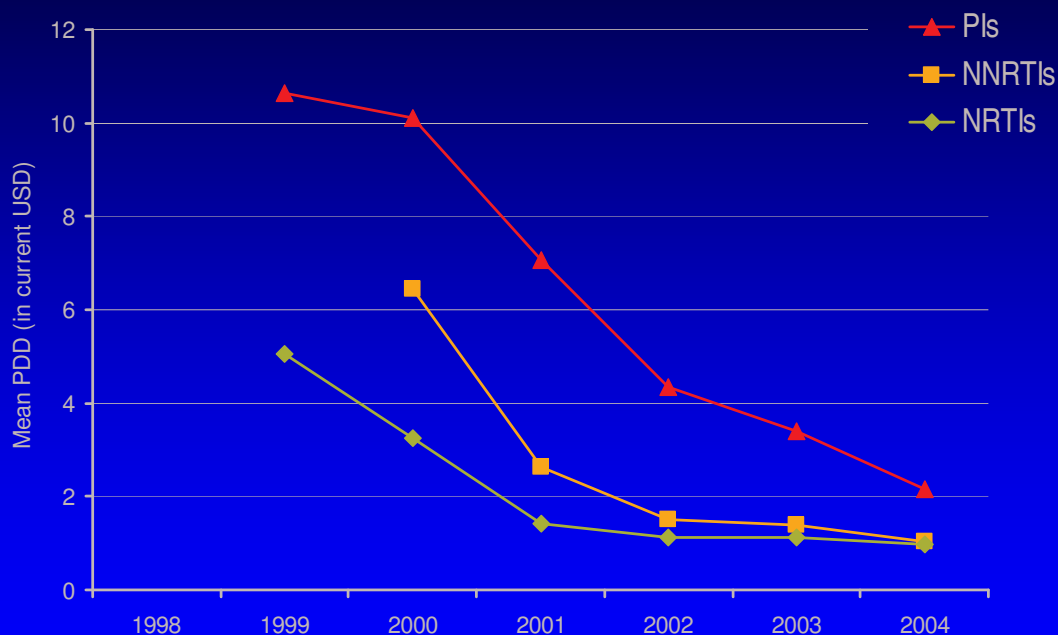
# Evolution of prices of Lamivudine 150 mg: The South African case



# Evolution of prices of Lamivudine 150 mg: The South African case



## Evolution of prices of ARV in Africa: PI drugs remain more expensive



Evolution of prices by therapeutic classes  
(Without South Africa - N=1028)

## Multi linear regressions of prices per daily dose in 9 sub-Saharan African countries (0)

- Dependent variable = Log of PDD
- Adjusted R = 0.64 (Good OLS properties)
- Macroeconomic variables (GDP per capita, ...) & characteristics of health care system (Structure of health expenditures, nb of doctor by habitant, ...) not selected in final model

## Multi linear regressions of prices per daily dose in 9 sub-Saharan African countries (1)

VARIABLES	$\beta$ -estimates	Pr >  t
Year 2004	-1.512	<0.0001
Year 2003	-1.356	<0.0001
Year 2002	-1.442	<0.0001
Year 2001	-1.120	<0.0001
Year 2000	-0.331	0.187
Year 1998	-0.301	0.756
PI drugs	1.074	<0.0001
NNRTI drugs	0.544	<0.0001

## Multi linear regressions of prices per daily dose in 9 sub-Saharan African countries (2)

VARIABLES	$\beta$ -estimates	Pr >  t
Recent approval by FDA (< 5 years)	0.426	<0.0001
Nb of units sold in the transaction	-2.15E-6	<0.0001
Intermed. Wholesaler in the transaction	0.261	0.024

## Multi linear regressions of prices per daily dose in 9 sub-Saharan African countries (3)

VARIABLES	$\beta$ -estimates	Pr >  t
Patent granted in the country	0.181	0.005
Generic drug	-0.955	<0.0001
AAI related transaction	0.509	<0.0001

## Conclusions & policy recommendations

- **Generic competition is a key determinant of effective downward differential pricing for Developing countries**
  - ⇒ Institutional support for competitive emerging markets and iterative decentralized purchasing transactions
  - ⇒ No constraints from bilateral aid on national procurement strategies
- **Issues of intellectual property rights (TRIPS+) remain crucial**
- **Guidelines should encourage flexibility of demand**
  - In the context of scaling-up, stringent clinical and procurement guidelines may increase supplier's monopoly power

## **Acknowledgements**

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### **ETAPSUD-prices project team**

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