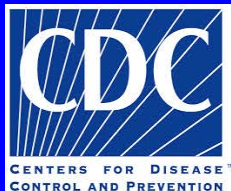


# Antiretroviral Initiating Regimens and Discontinuation Patterns, MEDUNSA National Pharmacovigilance Surveillance Cohort, South Africa, 2004 -2011



M.N. Muropa, MBBCH  
Resident, South Africa Field Epidemiology and Laboratory  
Training Programme



# HIV Epidemic in South Africa

Population

51 million

HIV infected population

5.6 million

HIV patients eligible for ART

3.9 million

People on antiretroviral therapy (ART)

1.9 million

# South Africa's ART Guidelines

Guideline	"2004" recommended regimens	"2010" recommended regimens
<b>First-Line Regimens:</b> <i>Non Nucleoside reverse  transcriptase inhibitors  (NNRTI) based</i>	D4T containing: 1a, 1b  AZT containing: 1c, 1d	TDF containing: A1, A2, A3, A4
<b>Second-Line Regimens:</b> <i>Protease Inhibitor (PI)  based</i>	AZT+ ddi: 2	TDF containing: B1, B2  AZT containing: B3

Stavudine - D4T  
Didanosine - ddi

Zidovudine - AZT  
Tenofovir - TDF

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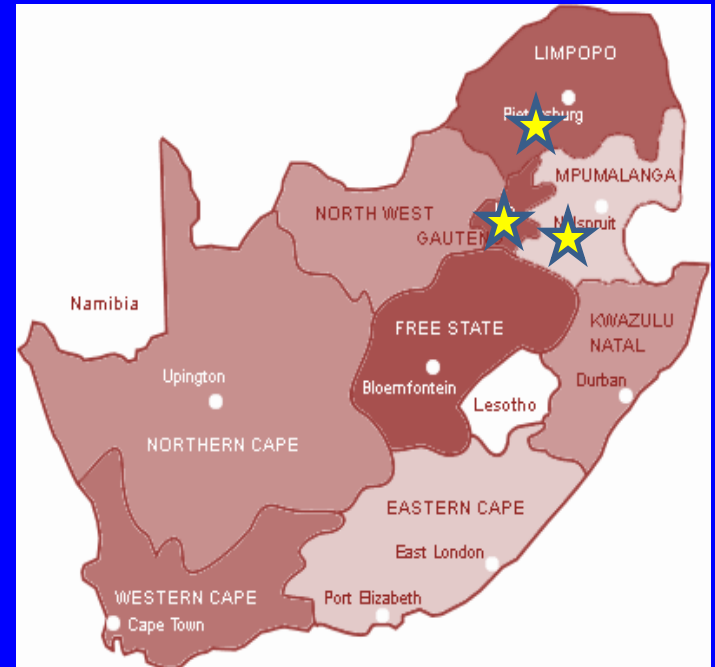
Zidovudine - AZT  
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# Objectives

- ART initiating patterns
- Time to discontinuation
- Reasons for ART discontinuation
- Factors associated with discontinuation

# Data: MEDUNSA National Pharmacovigilance Centre (MNPC)

- ART Sentinel surveillance System
  - Impact and safety of ART
- Patients :
  - HIV infected on ART
  - $\geq 15$  years age



- Data flow:

Clinic patient → Case report forms every visit → Sent to MNPC → Entered into Pharmacovigilance database

# Methods

- Retrospective cohort data analysis
- Inclusion and exclusion criteria



- Analysis
  - Medians and proportions
  - Fisher's tests of association
  - Multivariate Cox regression
- Ethics approval- University of Limpopo

# Definitions

- ART initiation

- naïve patient started on ART drug regimen

- ART discontinuation

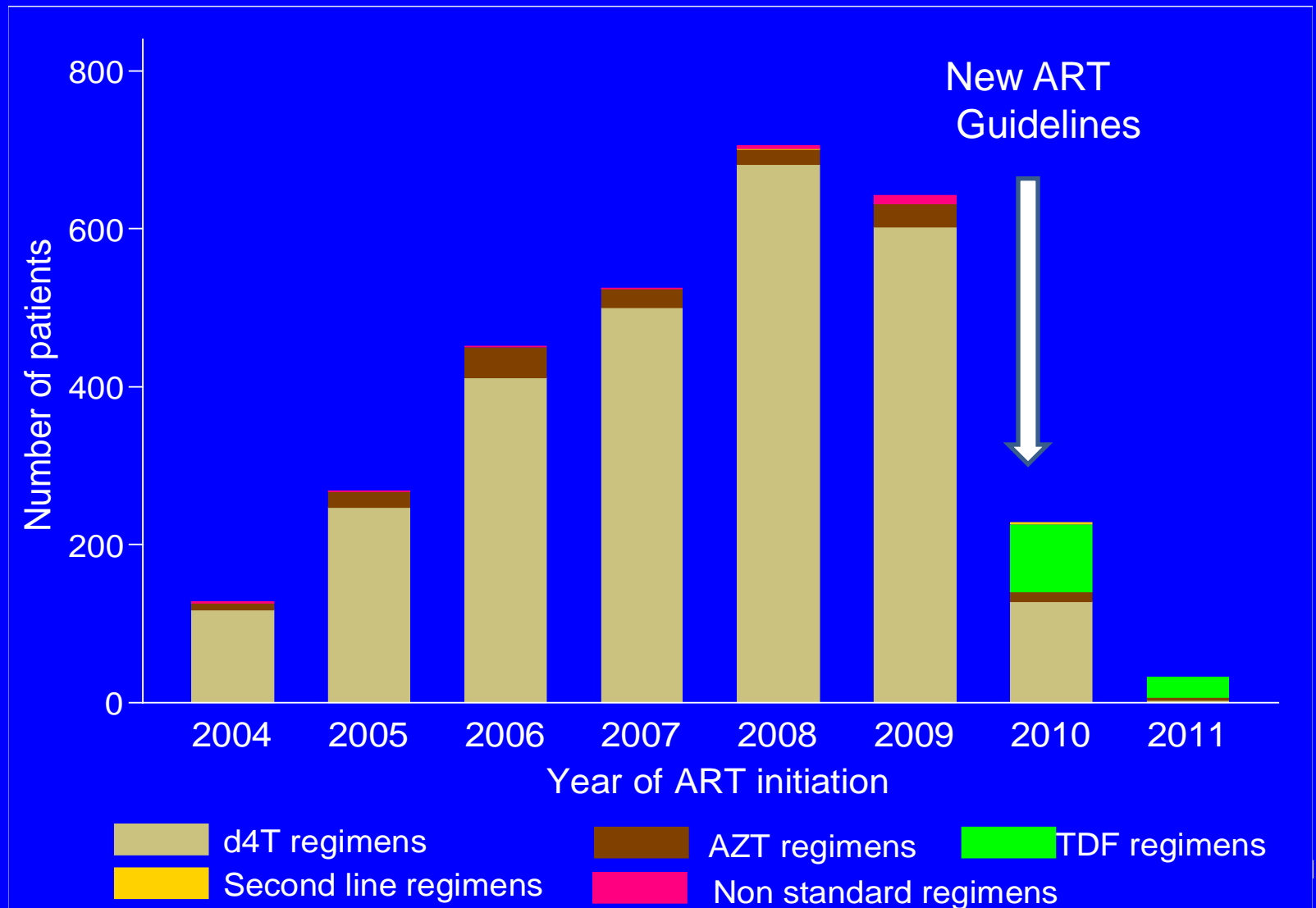
- stopping entire ART regimen, any time within surveillance period, for any reason as reported by the provider



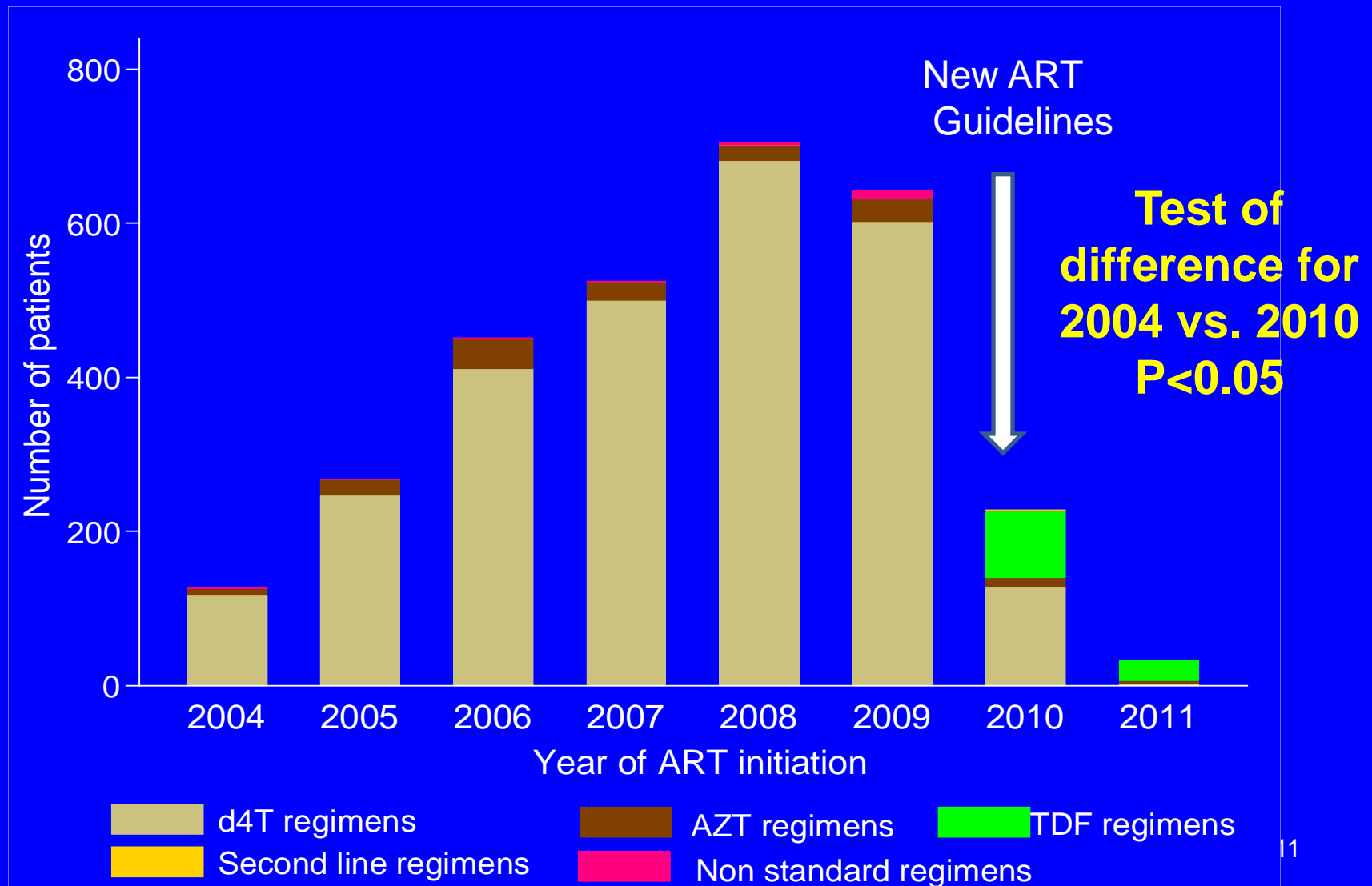
# Demographic characteristics, MNPC, 2004-11 (N= 2979)

Characteristic	Proportion	
	n	%
<b>Sex</b>		
Female	2068	69.4
<b>Race</b>		
Black	2973	99.8
Coloured	3	0.1
White	3	0.1
<b>Median Age at ART Initiation</b> (Inter-quartile range)		36.6 years 31.1 – 44.1 years
<b>Hospital</b>		
A (Tertiary)	934	31.5
B (Tertiary)	171	5.7
C (Tertiary)	1232	41.4
D (Regional)	642	21.6

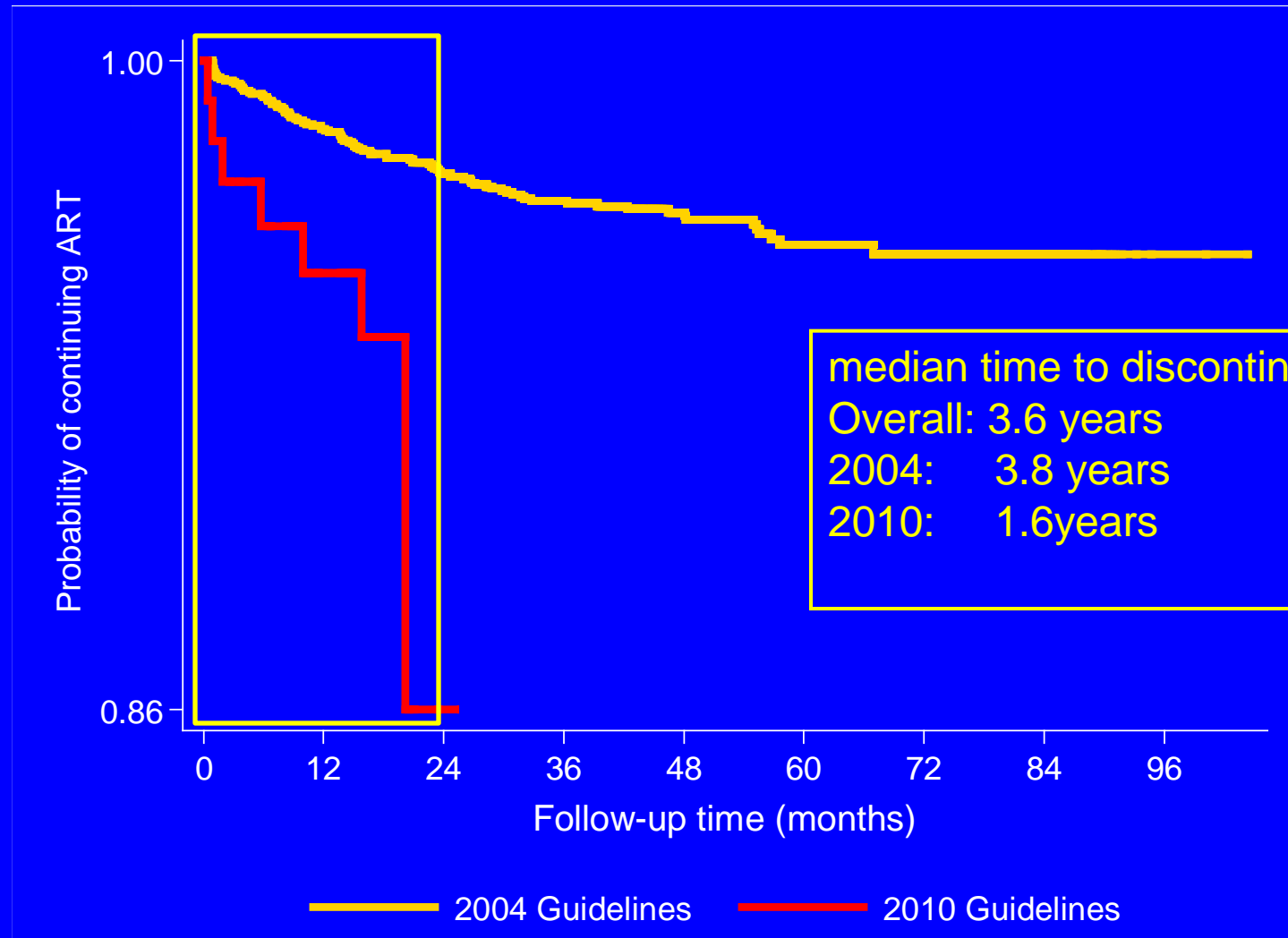
# Initiating Regimens by year, MNPC, 2004-11



# Initiating Regimens by year, MNPC, 2004-11



# Time to first ART discontinuation, MNPC, 2004-2011



# Reasons for ART discontinuation, MNPC, 2004-11

Reasons for ART Discontinuation	Standard Initiating Regimens	
	2004 First-Line n=128 (%)	2010 First-Line n=8 (%)
Poor Adherence	50.0	50.0
Drug Related Toxicity	26.6	12.5
Loss to follow-up	10.9	0.0
Treatment failure	7.0	25.0
Patient decision	3.9	12.5
ART unavailable	1.6	0.0

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Fisher's p value = 0.251

# Factors associated with ART discontinuation, MNPC, 2004-11

Characteristic	Unadjusted Hazard Ratio (confidence interval) p value	Adjusted Hazards Ratio (confidence interval) p value
<b>Guidelines</b> <i>"2004" (Ref) vs "2010"</i>	<b>2.64</b> (1.41 – 4.93) 0.02	<b>2.92</b> (1.56 – 5.47) 0.01
<b>Hospital</b> <i>"Tertiary" (Ref)</i> <i>vs "Regional"</i>	<b>17.8</b> (10.5 – 30.0) 0.00	<b>18.5</b> (10.9 – 31.2) 0.000
<b>Sex</b> <i>Female (Ref) vs Male</i>	<b>1.31</b> (0.87 – 1.96) 0.20	<b>1.57</b> (1.04-2.38) 0.03
<b>Age</b> <i>(&lt;30 (Ref), 30-45, &gt;45)</i>	<b>0.81</b> (0.50 – 1.32) 0.39	<b>0.79</b> (0.48 – 1.29) 0.35
	<b>1.27</b> (0.73 – 2.20) 0.40	<b>1.34</b> (0.76 – 2.33) 0.30

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# Discussion

- Initiation on recommended first line regimens
- Shifting to new 2010 ART regimens
- No change in reasons for ART discontinuation?
- Factors associated with discontinuing ART
  - 2010 guideline regimens?

# Study Limitations

- Limited sample size post 2009
- Sites in three of nine provinces
- Unable to control for bias

# Conclusion

- New “2010” ART regimens being implemented
- Poor adherence
- Discontinuation time
- Associated factors for discontinuing ART
  - Male sex
  - New guideline
  - Regional hospital

# Recommendations

- Expand ART pharmacovigilance surveillance
  - National recognition and advocacy
  - Decentralize pharmacovigilance facilities
- Surveillance evaluation
- Investigate factors of poor ART adherence

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