



Changing Antimicrobial Therapy 2001 - 2003

Academisch Ziekenhuis Groningen

Peter Mol,

Prashant V Nannan Panday, John E Degener, Jaap E
Wieringa, Marian Laseur, Rijk OB Gans,
Flora M Haaijer-Ruskamp

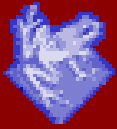
RUG



Background

- Existing guideline is used suboptimally, improved adherence leads to
 - reduced resistance!?
 - cost-effective!?
- But, optimal intervention strategy differs per setting

– Gould IM. A review of the role of antibiotic policies in the control of antibiotic resistance. *J Antimicrob Chemother* 1999; 43(4):459-465.



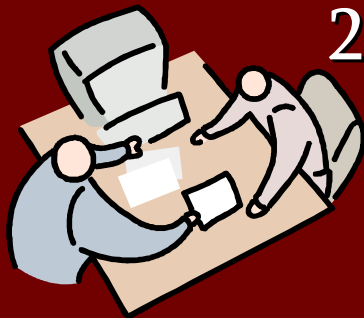
EGA-study intervention

■ combined intervention



1: Adapted guideline

- Up-to-date, electronic and paperback
- Tuned in with departments (ownership)



2: Feedback: “academic detailing”

- Problem: eg. cipro for lower UTI's
- Target group: residents and specialists
- Feedback: individual and groupwise



Aim of the study

- What is the effect of the updated and improved accessibility of the guideline on adherent prescribing & costs?
- What is the additional effect of academic detailing?



Methods

- Prospective study
 - Interrupted Time Series
- Inclusion
 - Patients treated with antibiotics for an indication covered by the AZG-guideline
 - Department of internal medicine AZG
 - July 1, 2001 – September 30, 2003
 - Patient-, disease-, and prescription-data



Study design

Updated
guideline introduced

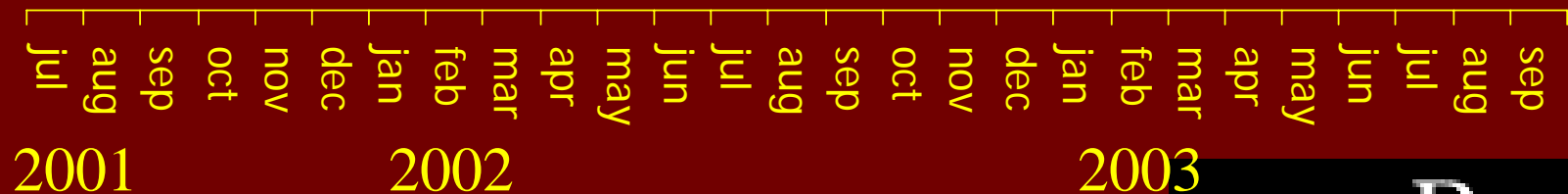
Post-intervention

Academic-detailing

In-between:

baseline

post measurement: guideline introduction
baseline: academic detailing



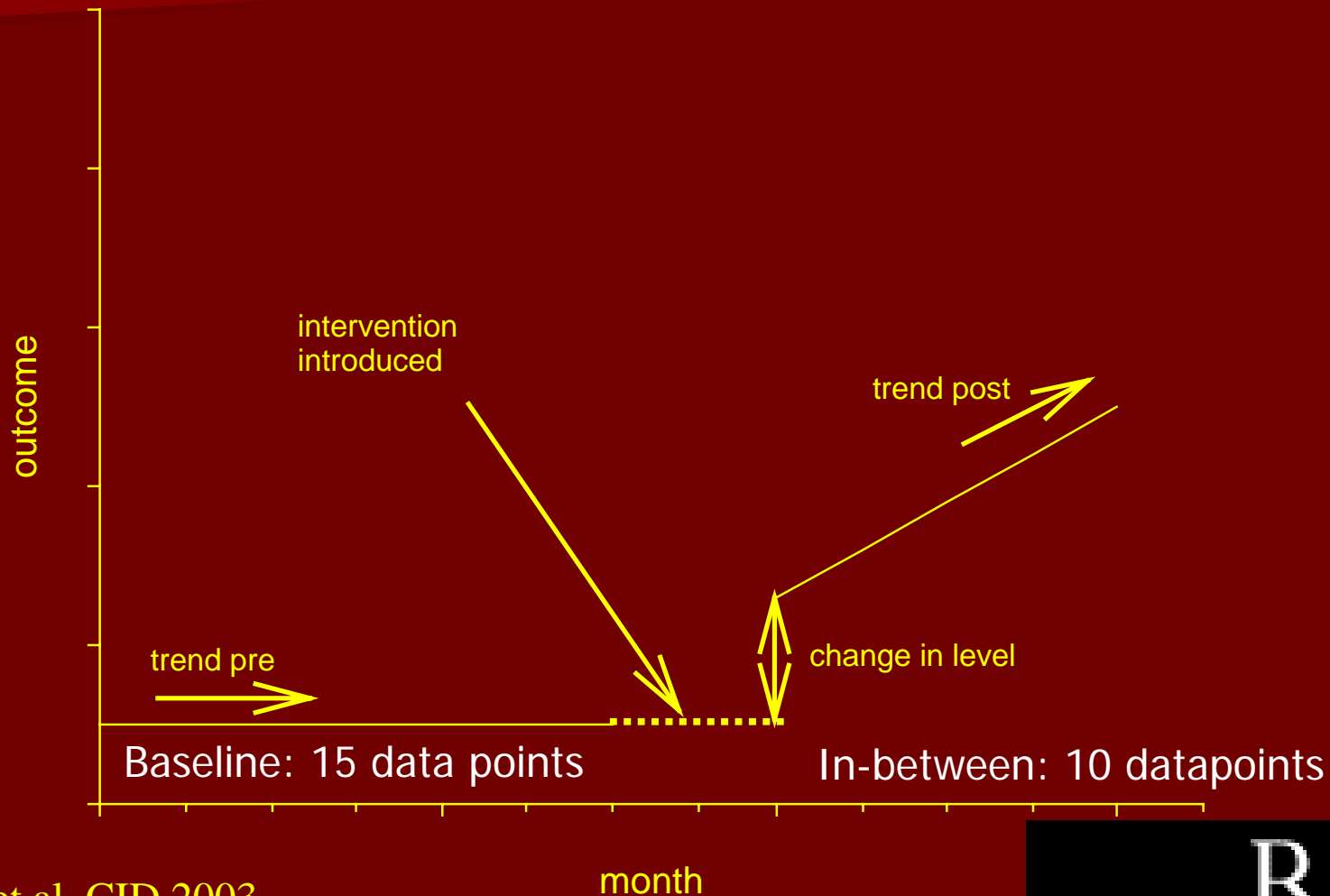


Analysis

- Unit of analysis
 - One prescription
- Outcome measures
 - Adherence of drug choice; reliable
 - Drug costs per 100 bed-days for antibiotic users
- Segmented linear regression analysis
 - Overall effect
 - (1 datapoint = 2 weeks)
 - Additional effect academic detailing
 - (1 datapoint = 1 month)



Interrupted Time Series segmented linear regression analysis



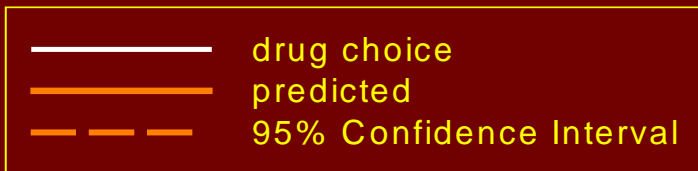
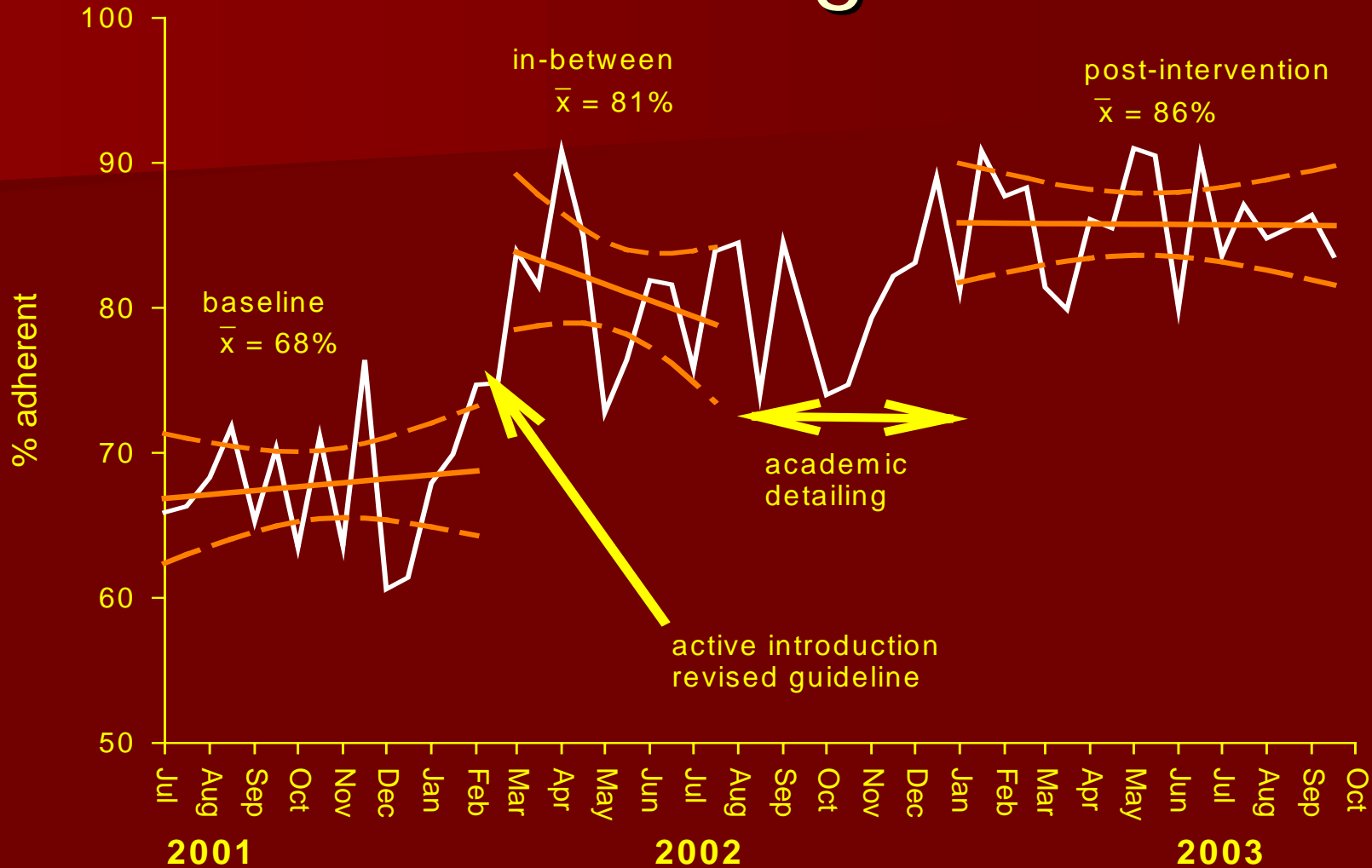


Study characteristics

	Baseline	In-between	Academic Detailing	Post- intervention	p
% AB users at department	43% (SD5%)	47% (SD2%)	50% (SD2%)	52% (SD3%)	<.001
AB users	697	549	601	1022	
% female	304 (44%)	258 (47%)	288 (48%)	485 (48%)	.36
Mortality	69 (10%)	43 (8%)	68 (11%)	71 (7%)	.01
Length of stay (days)	17 (9 – 29)	16 (8 - 28)	15 (8 – 28)	15 (9 - 26)	0.20
Age (years)	59 (47 – 71)	61 (48 – 73)	60 (44 – 71)	59 (45 - 72)	0.37
Prescriptions	1714	1437	1599	2721	

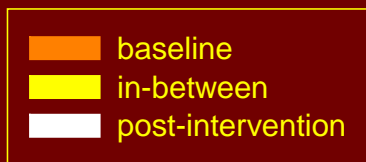
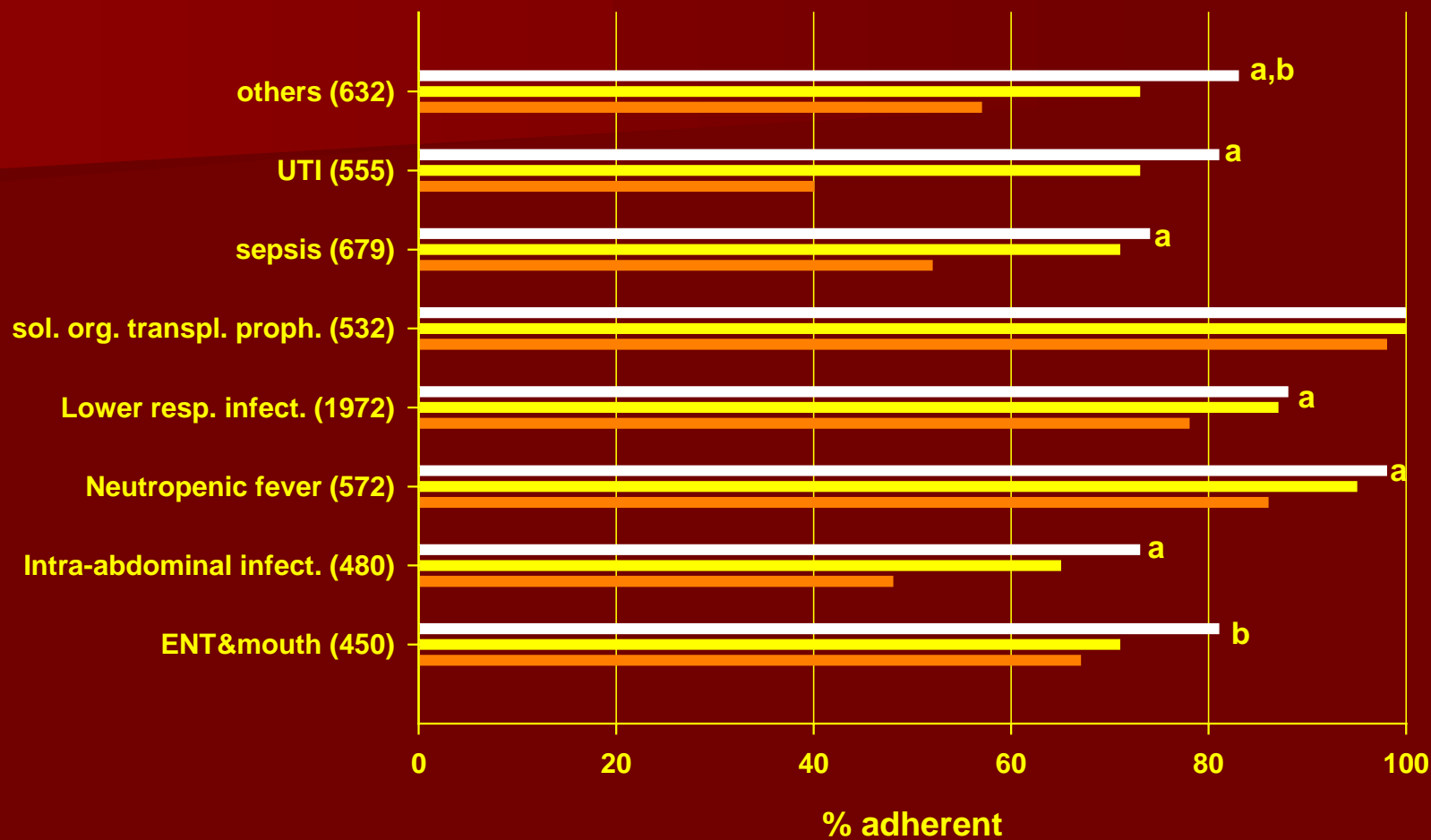


Adherent drug choice



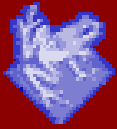


Impact on treatment of infections

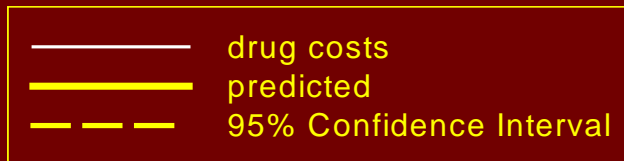
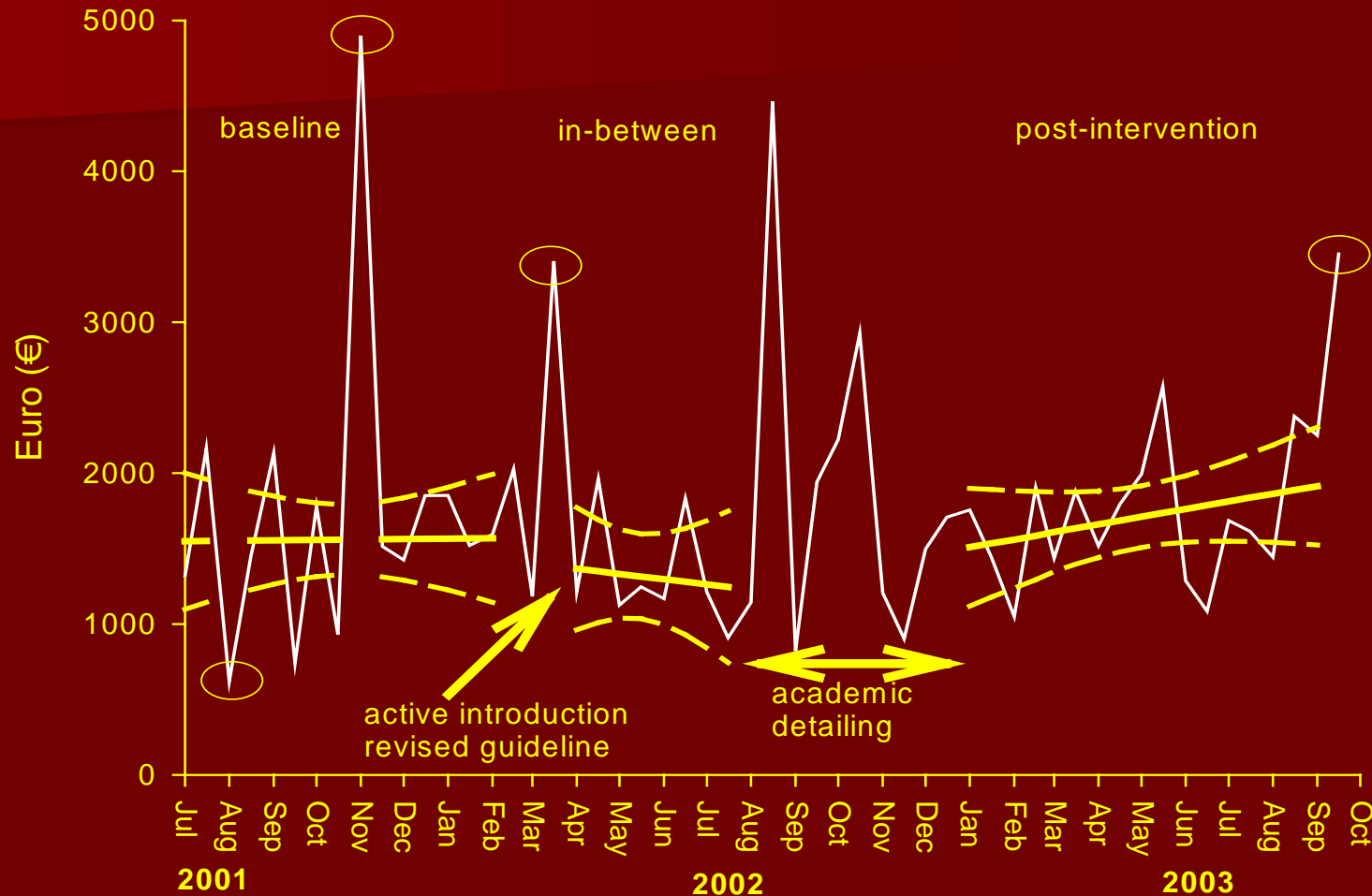


a: Chi-square significant ($p < 0,05$) baseline versus in-between measurement

b: Chi-square significant ($p < 0,05$) in-between measurement versus post-intervention



Antimicrobial Drug costs for antibiotic users per 100 beddays



○ outliers and extreme values

RuG

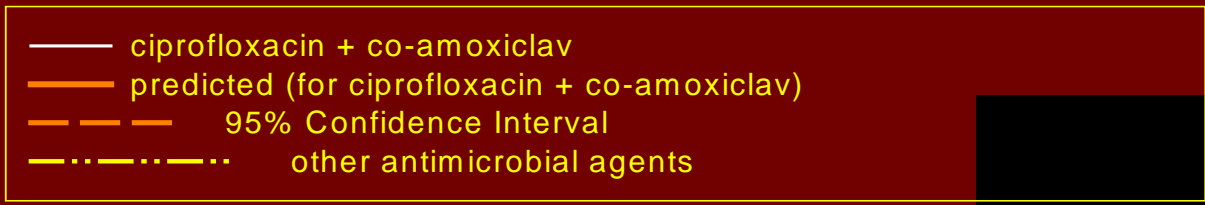
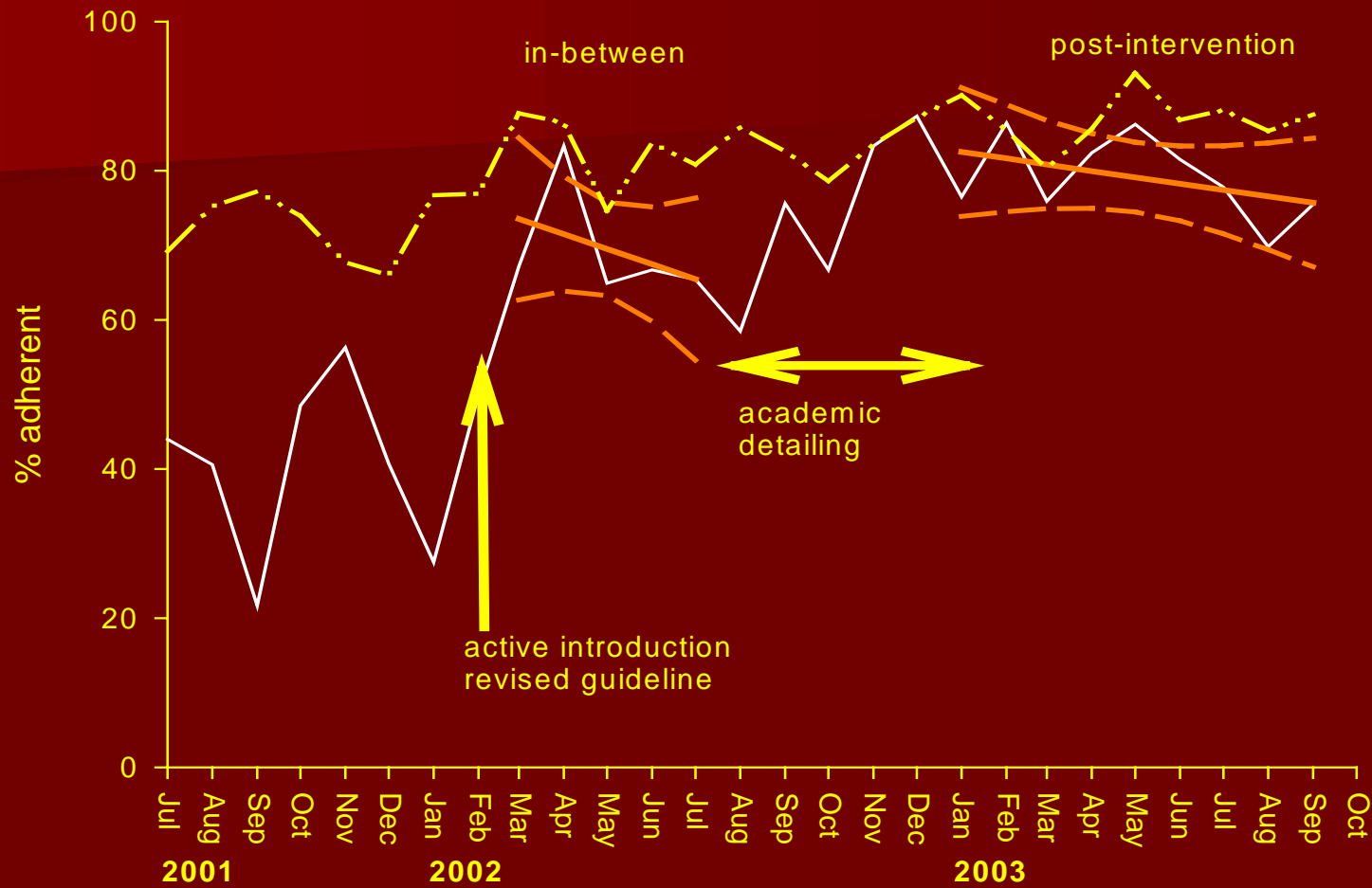


Additional impact AD

- Excluding departments of ICU and pulmonology
- Focusing at ciprofloxacin and co-amoxiclav
- Educational face-to-face approach
 - Individual: supervisors
 - Group-wise: residents
 - Individual: residents when prescribing non-adherent
- Analysis with segmented linear regression with non-equivalent dependent variable / control
- Outcome measure – adherence (1 data point = 1 month)
- No costs



Academic Detailing





Conclusion

- Adherence after guideline introduction improved without compulsory measures
 - strong impact of tuning-in with target group (ownership)
 - Active introduction
 - intranet version highly appreciated
 - Blues in the pocket
- Additional impact Academic Detailing limited
 - Ceiling effect,
 - order of interventions,
 - power
- No impact on costs
- Challenge: continuation of bringing guidelines to notice



Take home message

- Start intervention tomorrow:
 - Involve the relevant people + ownership
 - Evidence based, feasible, attractive intervention
 - Study main difficulties - barriers
 - Select right strategy within your limits
 - Define indicators for measuring impact
 - Monitor progress
 - Finally enjoy