

## Comparing effects and cost effects of two quality strategies to improve test ordering in primary care

Dr. Wim Verstappen, Dr. Trudy van der Weijden, Prof. Jeremy Grimshaw, Prof. Frits van Merode, Prof. Richard Grol.

WOK Centre for Quality of Care Research  
Dept. Of General Practice  
Maastricht University



## Structure presentation

- Introduction
  - Why improving GPs' diagnostic testing?
  - DPR strategy
- Results
  - Design
  - Effects and cost effects
- Conclusions

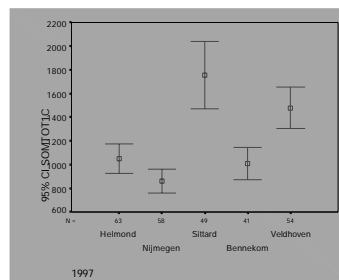


## Test ordering problem?

- Too many tests according to evidence-based, national guidelines.
- Interdoctor variation too large.



## Variation between regions



## Conclusions literature

- Th\_ strategy does not exist....
- Multifaceted and innovative...
  - Feedback important
  - Guidelines essential
  - Peer review promising.



## Diagnostic Peer Review (DPR)

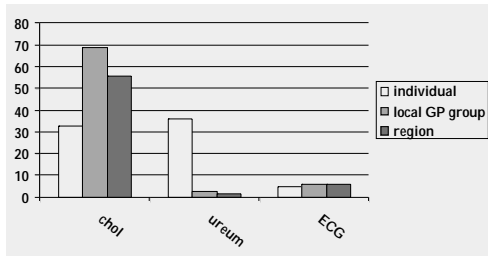
1. Individual comparative feedback.
2. Guidelines dissemination.
3. Peer review in local GP group.



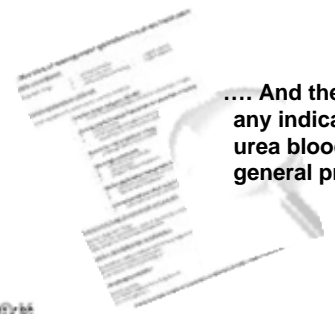
### Cardiovascular topics

Period: 07/1999 t/m 12/1999

GP: W. Verstappen



### Guidelines



.... And there is not any indication for a urea blood test in general practice.



### DPR-meeting



- Discussion DPR feedback reports
- Group education guidelines
- Explicit plans for change
- Continuous character



### Effects of DPR

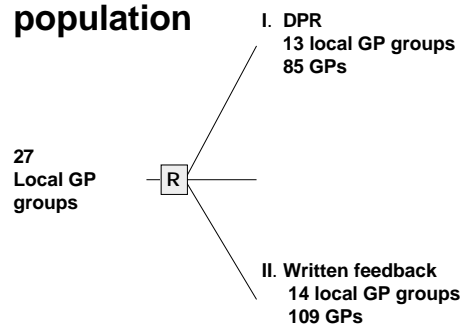
- Verstappen WH, van der Weijden T et al. Effect of a practice-based strategy on test ordering performance of primary care physicians: a randomized trial. *JAMA* 2003;289:2407-12.

### Research questions

- What is the added value of the complete strategy compared to written feedback only?
- What are the costs and cost reductions?



### Study population



## Tests and costs of tests (€)

### Cardiovascular Topics

e.g. Cholesterol - Sodium <sup>1</sup> - Potassium <sup>1</sup>	€ 1.20
Electrocardiogram <sup>3</sup>	€ 11,36
Exercise Electrocardiogram <sup>3</sup>	€ 72,72

### Upper Abdominal Complaints

e.g. Bilirubin <sup>1</sup> - Amylase <sup>1</sup> - SGPT, SGOT	€ 1.20
Ultrasound of the Hepatobiliary Tract <sup>2</sup>	€ 36,36

### Lower Abdominal Complaints

Prostate Specific Antigen <sup>1</sup>	€ 7.12
X-ray Abdomen <sup>2</sup>	€ 31.82
Double Contrast Barium Enema <sup>2</sup>	€ 36,36



## Type of costs

### Running costs

- Feedback reports (3x)
- Quality meetings (3x)
- Opportunity costs

### Development costs

- Continuation activities
- Software development
- Guidelines

### Research costs

- Scientific development/evaluation
- Primary care physician compensation



## Clinical and costs effects

	Effects	p
DPR arm versus feedback arm	-51	0.004
DPR arm versus feedback arm	€ -144	0.048



## Costs (€) per GP per 6 Months.

Type of costs DPR arm (n= 85) Feedback arm (n= 109)



## Costs and Cost Reductions of the Two Strategies per GP per Six Months

Costs	DPR arm	Feedback arm
All costs	€ 702.00	€ 58.00
Only running costs	€ 554.70	€ 17.10
Running costs, no opportunity costs	€ 92.70	€ 17.10
Cost reductions	€ 301.00	€ 161.00



## Methodological considerations

- No clinical outcome data
- Focus on a decrease in the volume of tests
- Limited time-frame

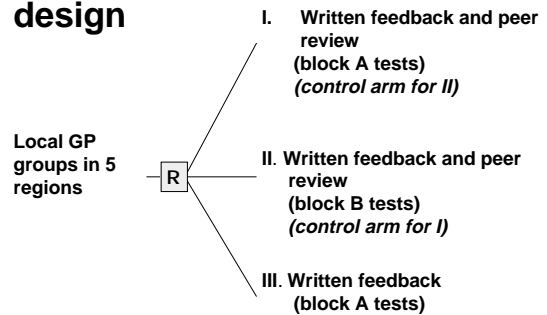


## Conclusions

- ❑ The DPR strategy has an added value compared to the traditional strategy.
- ❑ Costs analyses of quality strategy are necessary. New frameworks for cost studies of quality strategies are needed.
- ❑ Further long-term effect and cost effect studies on the implementation of the DPR strategy are warranted.



## Overall design



## Study Population Characteristics

	DPR arm	Feedback arm
No. of PCPs	85	109
No. of tests at baseline	433	509
Costs at baseline	€ 1541	€ 1763
Age, year	46.2	46.2
Female, (%)	16	10
No. of patients	2587	2444
Patients > 65y (%)	6.8	6.5
Working time factor	91	92
Solo practice, (%)	51	40



## Comparing effects at local GP group level

