Appropriate prescribing and cost-containment

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Thoughts to achieve both

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Structure

- Appropriate prescribing
- Inappropriate prescribing increases costs
- Optimising prescribing while minimising costs: a challenge
- The new prospective budgeting in acute hospitals
  - How to cope with it without decreasing quality

1. Appropriate prescribing

- What is it?
- How can it be detected?
- How frequent is it?

What is (in)appropriate prescribing?

- An appropriate prescription is a prescription that :
  - maximises effectiveness,
  - minimises risks,
  - minimises costs, and
  - respects patient choice

- Categories of inappropriate prescribing:
  - « Over » use
  - « Mis » use
  - « Under » use

How to detect inappropriate prescribing?

- Several instruments can detect over-, mis-, under-use
- Examples:

1. Medication Appropriateness Index (MAI)

1. Valid indication?
2. Appropriate choice?
3. Correct dose?
4. Modalities of treatment correct?
5. Modalities of treatment practical?
6. Clin. significant drug-drug interactions?
7. Clin. significant drug-disease interactions?
8. Duplication?
9. Appropriate duration?
10. Cost?

2. Drug-to-avoid criteria (Beers)

e.g. long-acting BZD, amitriptyline, dipyridamole

3. Underuse ACOVE criteria

e.g. patient with myocardial infarction and not on aspirin
e.g. patient with osteoporosis and not treated

Spinewine et al., Lancet 2007 (in press)

How frequent is inappropriate prescribing?

- No valid indication (« over » use) 54%

- Wrong choice 84%
  Dose suboptimal 84%
  Too long duration of treatment 72%
  Modalities of administration not correct 73%
  Modalities of administration not practical 68%
  Adverse drug interaction 70%
  Cost (less expensive alternative) 80%

- Underprescribing 55%

% of patients with inappr prescr

Spinewine et al., JAGS 2007 (in press)

2. Inappropriate prescribing increases costs

- Impact on DIRECT costs
- Impact on INDIRECT costs

Impact on DIRECT costs

↓

= Cost of treatment

- Example 1: invalid indication

Eg prescription of an antipsychotic for confusion

- risperidone 0.5mg solution, 1 month: ~ 15 euros

- Example 2: duration of treatment too long

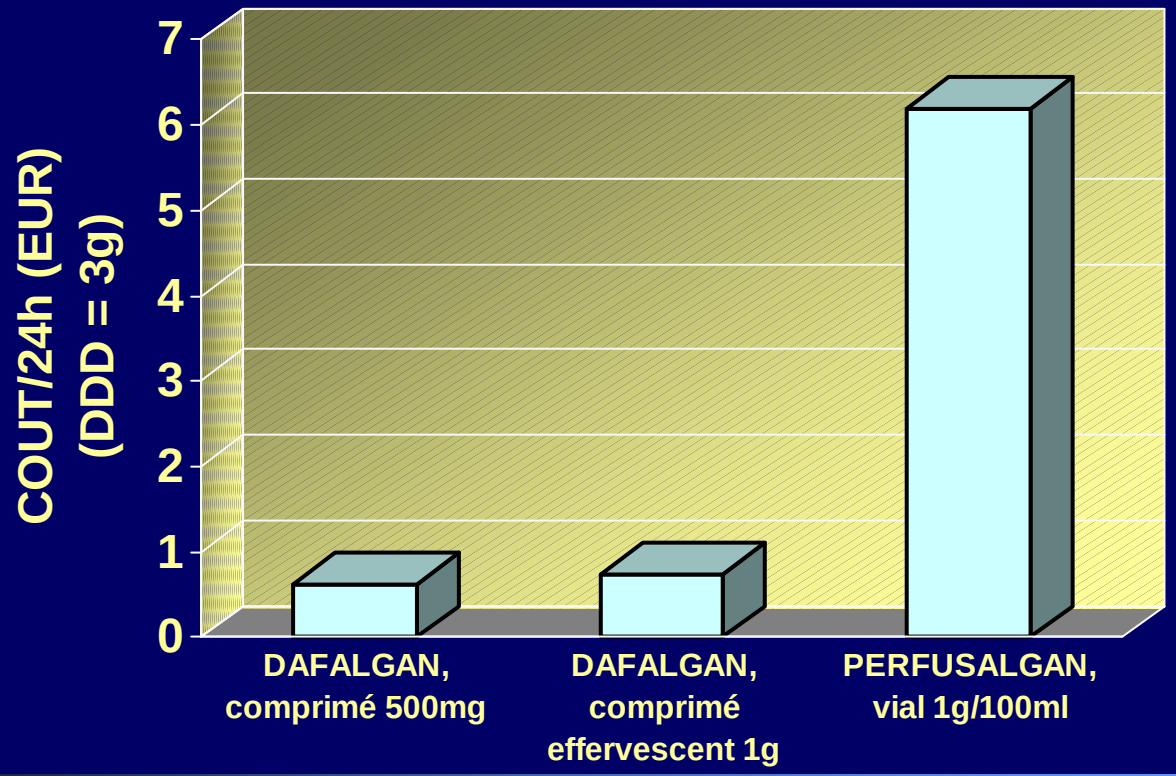
Eg benzodiazepine started during admission for insomnia, and not discontinued upon discharge

- Lorazepam 2mg/d, 3 months: ~ 8.5 euros
- eg Zolpidem 10mg/d, 3 months: ~ 39 euros

Impact on DIRECT costs

- Example 3: inappropriate route of administration

Eg paracetamol iv while the patient can swallow and tolerate food



Impact on INDIRECT costs

= Costs of measures taken to address the adverse consequences of inappropriate prescribing (admission to hospital, adverse drug event,...)

Often superior to the direct costs of treatment !!!

- A few examples…
  - Gabapentin started for diabetic neuropathy, dose not adapted to renal function → patient confused → patient falls → admitted to hospital with hip fracture
  - No prescription of aspirin/anticoag for a patient with AF (underuse), and patient admitted to hospital with stroke → short- and long-term consequences

Impact on INDIRECT costs

- Landmark study on adverse drug events (ADEs) (Bates, JAMA 1995 and 1997)
  - 6.5 ADEs / 100 hospital admissions
  - 12% life threatening, 30% serious
  - 28-42% are **preventable**
    - Annual cost for a 700-bed teaching hospital: $2.8 million
- Study on the impact of increasing cost-sharing for elderly persons (Tamblyn et al, JAMA 2001)
  - ↑ Cost-sharing → ↓ Use of essential drugs (= underuse) → ↑ rate of serious adverse events, and emergency visits

Impact on INDIRECT costs

- Fleetwood project (Bootman, 1997)
  - « Cost-of-illness » model
  - Objective: to estimate the cost of drug-related adverse consequences
  - Main finding: for 1 € spent on drugs → 1.33 € spent to treat drug-related problems

3. Optimising prescribing while minimising costs

When doing drug regimen review…

- Tx changes that ↑quality of prescribing and ↓ costs
  - Stop medicines without valid indication
  - Make sure that duration of treatment is not too long
- Tx changes that ↓ costs without ↓ quality
  - Switch iv → po whenever possible
  - Prefer drugs that are on the hospital formulary
- Tx changes that ↑quality, ↑direct costs but ↓indirect costs
  - Prescribe a new medication to resolve underuse

Strategies to improve prescribing

- Regulation
  - *impact: +/- cost to implement: +*
- Education and feedback
  - *impact: +/- cost to implement : ++*
- Computerised prescribing, decision support
  - *impact: + cost to implement : ++*
- Geriatric medicine services
  - *impact: ++ cost to implement : ++*
- Pharmaceutical care / clinical pharmacy
  - *impact: ++ cost to implement : ++*

Spinewine et al., Lancet 2007 (in press)

Strategies to improve prescribing

Good evidence of positive impact on quality

But is it « cost-effective »?

- Geriatric medicine services
  - *impact: ++ cost to implement : ++*
- Pharmaceutical care / clinical pharmacy
  - *impact: ++ cost to implement : ++*

Spinewine et al., Lancet 2007 (in press)

Strategies to improve prescribing

- Economic impact on direct costs well demonstrated

eg studies of pharmaceutical care in outpatient and nursing home setting: economic benefit from discontinuing unnecessary drugs (Zermansky et al., BMJ 2001, Blakey et al., 2000)

- Lack of studies addressing the impact on indirect costs

Spinewine et al., Lancet 2007 (in press)

4. The new prospective budgeting system in acute hospitals in Belgium

- What is it?
- Opportunities to optimise prescribing
- Risks

« Forfait »: What is it?

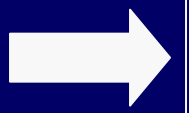
- Prospective enveloppe to cover the cost of medications
  - Pre-defined amount of money per admission, and calculated based on diagnosis of admission, and severity (APR-DRG)
- For whom?
  - All patients admitted in Belgian acute hospitals
- For which medications?
  - All reimbursed medicines (= class A, B, C)
  - Except: medicines on the « exception list » (new and costly medicines)

« Forfait »: An opportunity to improve prescribing

- Forfait = an incentive to better address the following questions:
  - Is there a valid indication for prescribing this drug?
  - Is duration of treatment not too long?
  - For patients on i.v. medications, could it be switched to oral medications?
  - Is there a less costly alternative?
    - If the drug is not on the formulary, can we safely switch it for a drug on the formulary?

« Forfait »: Beware of risks of deterioration in the quality of prescribing

- Examples:
  - Patient discharged without any supply for medications before the patient/caregiver can go and buy medicines from the community pharmacy
  - « Chronic » drugs discontinued during admission to save money (eg statins)
  - Use of medications brought from home during admission, to avoid using meds from the hospital



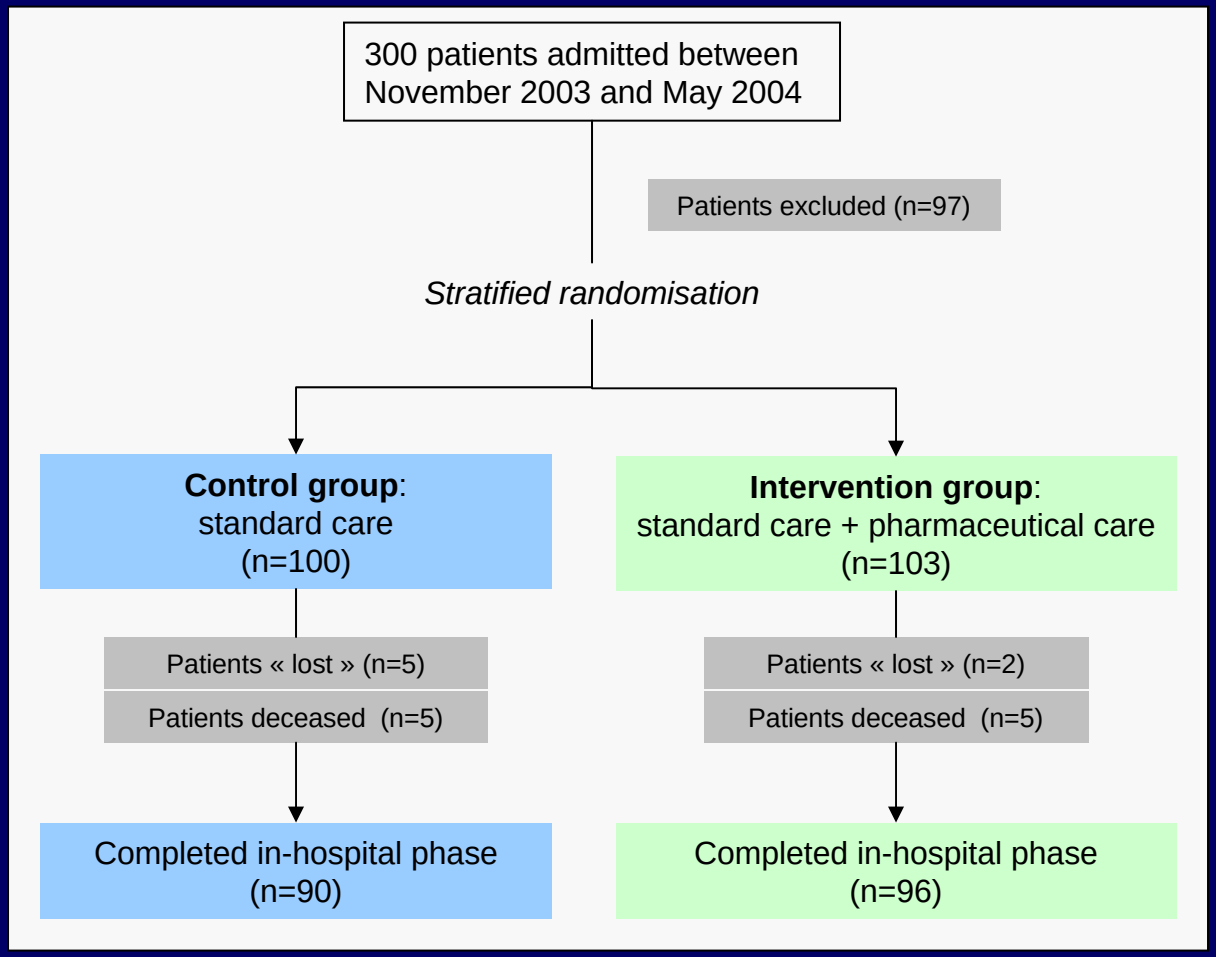
Unacceptable risks of adverse consequences, secondary to discrepancies during transition from acute/chronic care

It is unacceptable to compromise quality for economic reasons!

5. Example

... to show that it is possible to improve the quality of prescribing, without exceeding the « forfait »

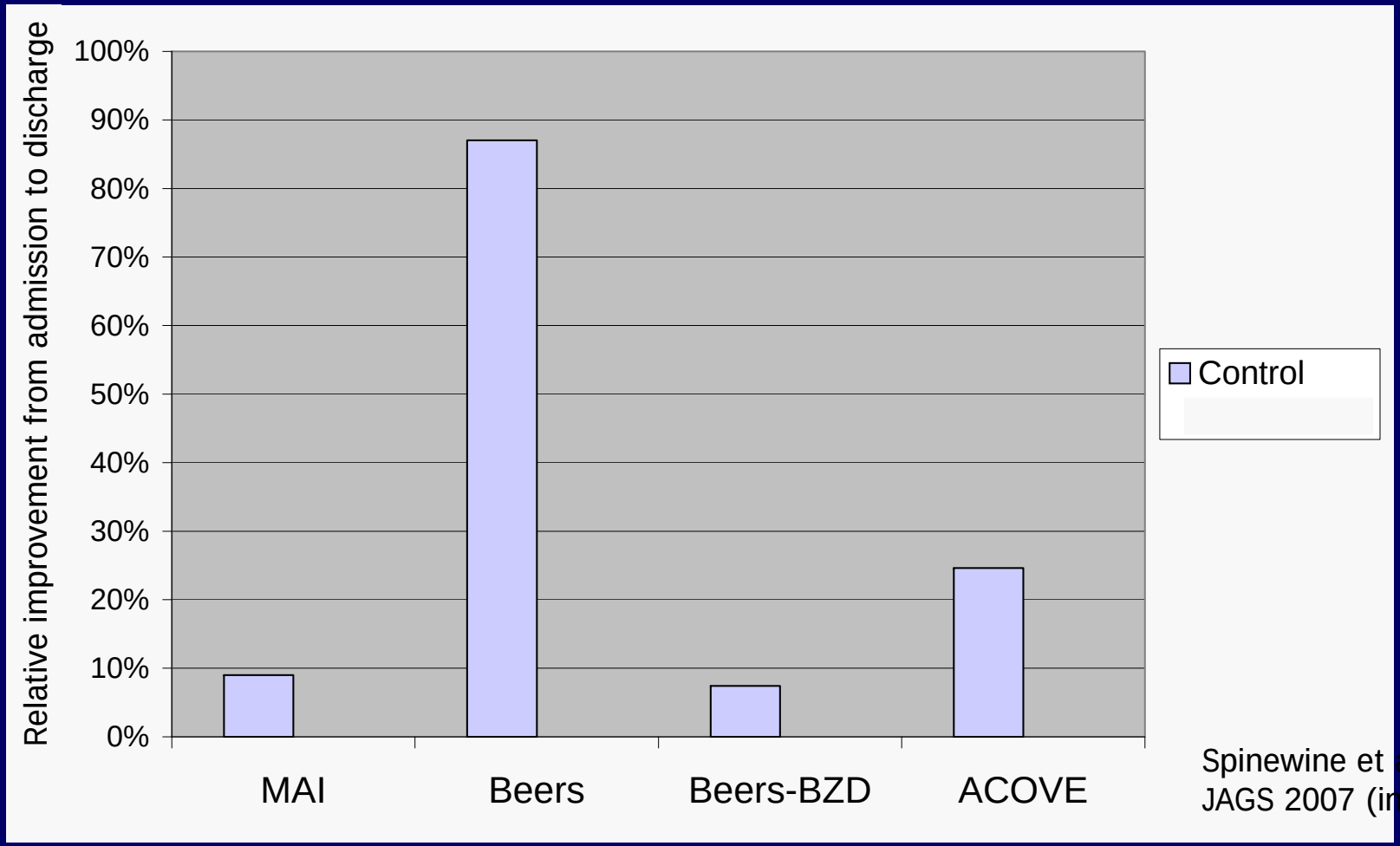
RCT – impact of geriatric and pharmaceutical care



Spinewine et al., JAGS 2007 (in press)

Impact on the quality of prescribing

IMPROVEMENTS FROM ADMISSION TO DISCHARGE



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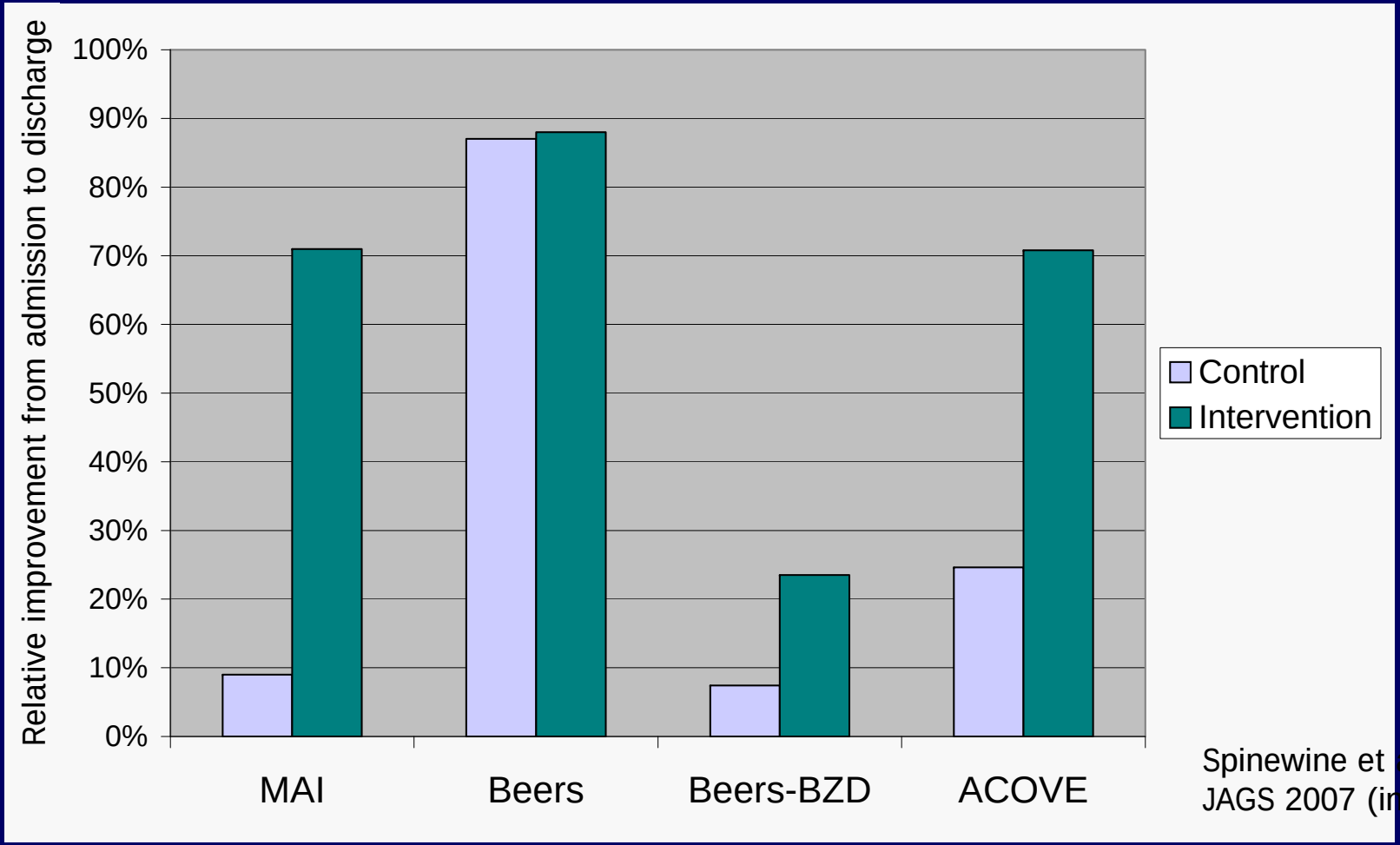

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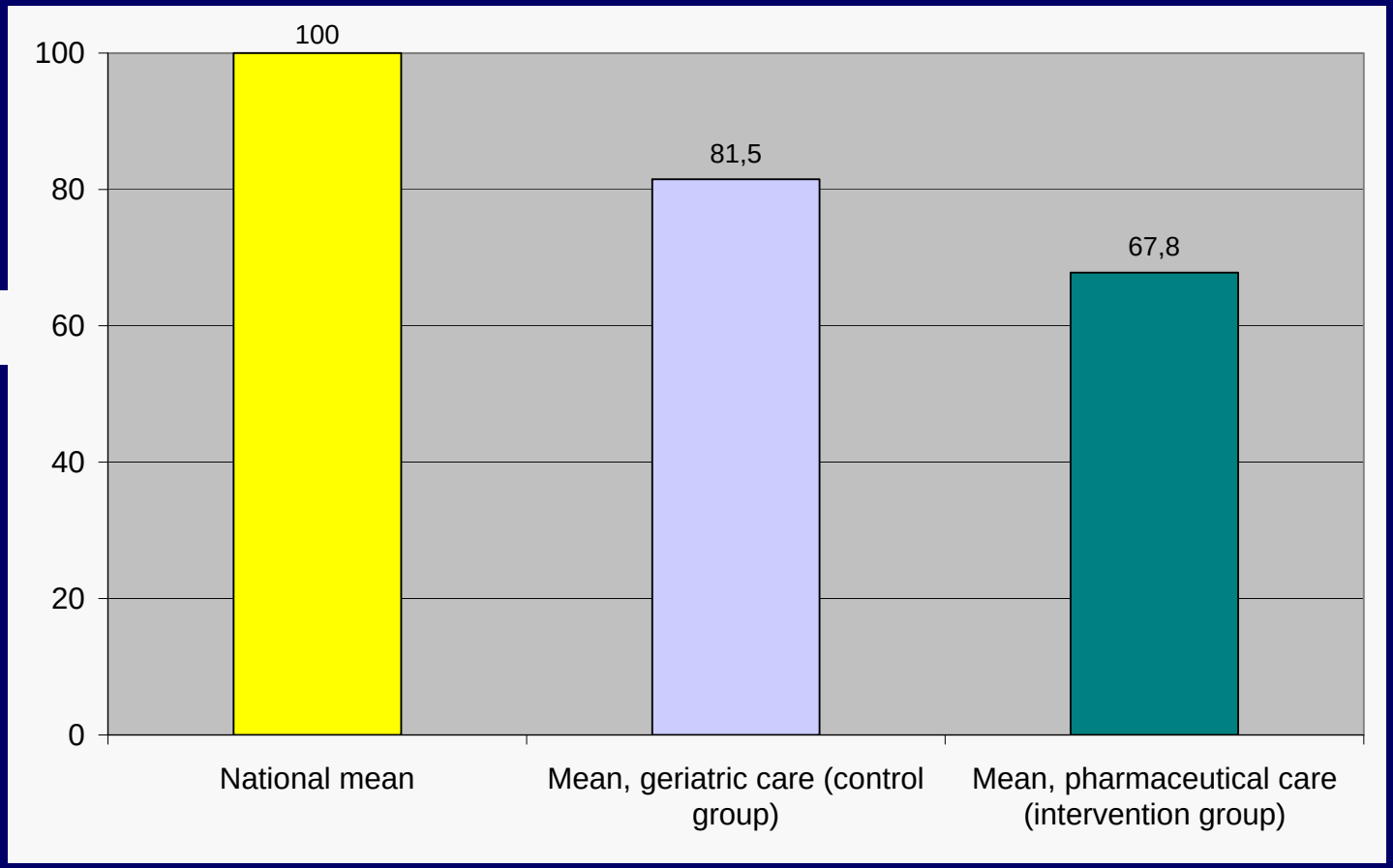
Impact on the « forfait »

Costs of drug treatment per admission, corrected for diagnosis of admission and severity



B Sneyers, unpublished data