Presentation of a specific research project

Appropriate use of medicines in care of the elderly:
Factors underlying inappropriateness, and impact of the clinical pharmacist

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Introduction

Starting point: Pilot project combining

- clinical activities — Target high-risk patients (1)
- research activities — Rigorously evaluate impact on quality (2)

Main research hypothesis:

Pharmaceutical care provided to patients at high risk of drug-related problems improves the quality of use of medicines

(1) Target: frail elderly patients

High risk of drug-related problems

<u>Risk factors</u>

- Comorbidities +++
- PK/PD changes
- Physical/cognitive impairment
- …

→

<u>Problems with drugs</u>

- Polymedication
- Inappropriate prescribing
- Poor compliance
- …

→

<u>Consequences</u>

- *Clinical*

↑ ADEs, morbidity, mortality

- *Economic*

↑ costs

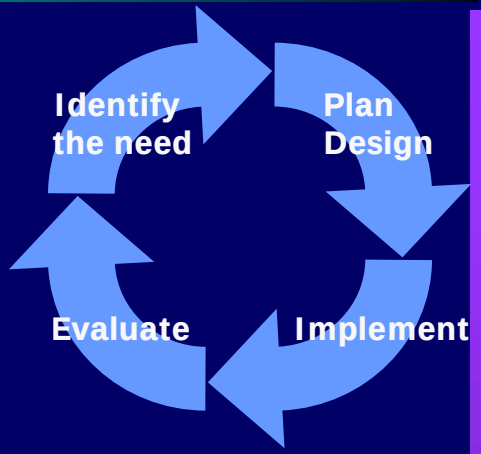
- *Humanistic*

↓ quality-of-life

Examples:

- 50% of admissions to hospital that are secondary to an ADE are preventable
- 50% of elderly patients do not take their drugs as intended
- 1 € spent on drugs → 1.33 € spent to treat drug-related problems (Bootman, 1997)

(2) Rigorous evaluation of impact



- Structured and logical approach

1. Assess the baseline level of appropriateness of use of medicines → needs identification
2. Design the intervention (must address the needs)
3. Implement the intervention / service
4. Evaluate impact on quality
    1. Robust study design
    2. Validated process and outcome measures

(2) Rigorous evaluation of impact

- Structured and logical approach

1. Assess the baseline level of appropriateness of use of medicines → needs identification

I. Qualitative study - objective

1a. To explore the perceptions of HCPs on the appropriateness of use of medicines for elderly inpatients

1b. To identify the processes leading to (in)appropriate use of medicines

with regard to prescribing, counselling, and transfer of information to the general practitioner

Appropriateness of use of medicines in elderly inpatients: qualitative study

Spinewine A, Swine C, Dhillon S, Dean Franklin B, Tulkens PM, Wilmotte L, Lorant V.

British Medical Journal 2005;331:935-9.

Qualitative research in health care

QUALITATIVE *↔ quantitative*

Approach

- often exploratory work: "how" and "why" ↔ how many?
- hypothesis generating ↔ testing

Why does inappropriate use of medicines occur?

What is the % of inappropriate prescriptions?

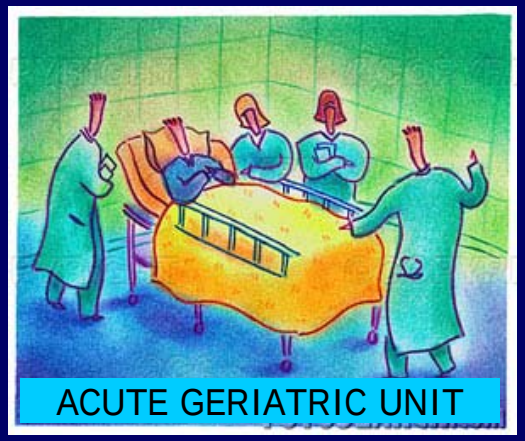
What is the impact of clinical pharmacists on this %?

Qualitative research in health care

QUALITATIVE	*↔ quantitative*
Approach	
often exploratory work: “how” and “why”	↔ how many?
hypothesis generating	↔ testing
Methods	
interviews, observation, documents	↔ survey, RCT
Sample	
small and purposive	↔ large, random

I. Qualitative study - design

1. DATA COLLECTION



5 doctors
4 nurses
3 pharmacists
} Individual interviews

17 patients
} Group interviews (focus groups)

2 acute geriatric units
} 1-month observation by clinical pharmacists

2. DATA ANALYSIS

Read transcripts → themes → coding → ...

Inductive, multidisciplinary approach

Software support: QSR N-Vivo

I. Qualitative study - results

- Perceived appropriateness
  - Inappropriate prescribing does occur
  - Patient counselling is insufficient
  - Information given to the general practitioner upon discharge, and relating to medicines, is insufficient

→ Why does this occur?

Categories underlying inappropriate use of medicines

Reliance on general acute care and short term treatment

- Review of treatment driven by acute considerations; other considerations overlooked
- Limited transfer of information on medicines from primary to secondary care

1. • "One size fits all": prescribing behaviour not tailored to the older patient

Passive attitude towards learning

2. • Anticipated inefficiency in searching for medicines information
- Reliance on being taught (teacher centred) rather than self directed learning

Paternalistic decision making

3. • Patients thought to be conservative
- Patients declared as unable to comprehend
- Ageism
- Difficulty in sharing decisions about treatment with other prescribers

I. Qualitative study - results

Why does inappropriate prescribing occur?

1. Prescribing is not tailored to ELDERLY patients

> *« Doctors haven't necessarily been trained in geriatrics. They will start with 10mg of morphine every 4 hours. That's too much. »*

2. Searching for medicines information: takes too long

> *« I don't really know drug interactions very well. And to always go and look in the compendium is a bit difficult in terms of time. »*

3. Paternalism – patients are thought to be conservative

> *« Patients are attached to their medicines. It is difficult to go against that. »*

I. Qualitative study - discussion

- Underlying factors → approaches for improvement
- Multi-faceted approaches are needed

- Support by a clinical pharmacist could tackle several of the underlying factors

Pharmaceutical care process used in the study

Pharmaceutical care process used in the study

Plan
Design

Step 1: Gathering relevant information on the patient on admission

Medication history ⟷

- Patient / caregiver
- General practitioner
- Community pharmacist

Admission

Pharmaceutical care process used in the study

Plan
Design

Step 2 – 2a: Systematic analysis of medicines prescribed

Are DRPs identified?

Are HCPs asking questions?

2b: Interventions to optimise prescribing

1. Discuss the DRP
2. Propose a solution
3. Seek acceptance
4. Ensure the follow-up

1. Answer the question
2. If relevant:
- Propose a solution
- Ensure the follow-up

Hospital stay

Pharmaceutical care process used in the study

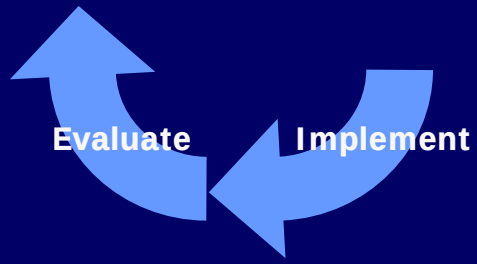
Plan
Design

Step 3: Information at discharge

Counselling → - Patient / caregiver
- General practitioner

Discharge

III. Implementation and evaluation



Objectives

3a. To evaluate the feasibility to provide pharmaceutical care

3b. To evaluate the impact on the quality of use of medicines

Acute geriatric unit, Mont-Godinne teaching hospital, 7 months

Implementation of ward-based clinical pharmacy services in Belgium – Description of the impact on a geriatric unit

Spinewine A, Dhillon S, Mallet L, Tulkens PM, Wilmotte L, Swine C.

Annals of Pharmacotherapy 2005;331:935-9.

Medication Appropriateness Index: reliability and recommendations for future use

Spinewine A, Dumont C, Mallet L, Swine C.

Journal of the American Geriatrics Society 2006;54:720-2.

How to evaluate the impact of pharmaceutical care?

- Descriptive approach
  - Description of interventions made by the clinical pharmacist to optimise the use of medicines

- Comparative approach
  - Comparison with a control group
  - Measures of impact

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  - Comparison with a control group
  - Measures of impact
    - « Process » measures : quality measures
      - Appropriateness of prescribing
    - « Outcome » measures
      - Clinical: ADE, length of stay, mortality, readmission
      - Economic: cost of drugs, cost of hospital stay,…
      - Humanistic: quality-of-life, satisfaction

III. Evaluation – RCT – design

- Descriptive approach
  - Description of interventions made by the clinical pharmacist to optimise the use of medicines

- Comparative approach
  - Comparison with a control group
  - Measures of impact
    - « Process » measures : quality measures
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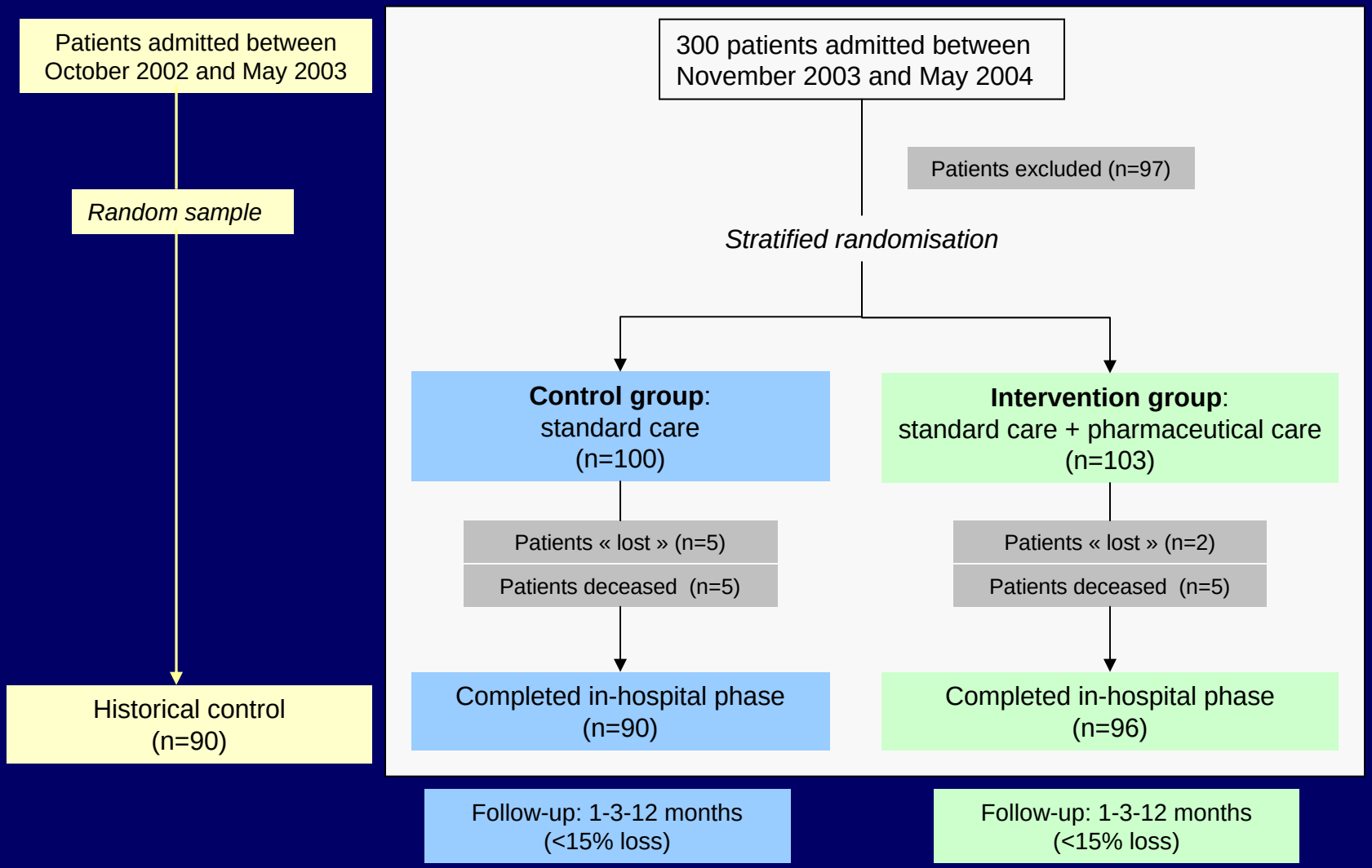
III. Evaluation – RCT – design



III. Evaluation – RCT – design

- Descriptive approach
  - Description of interventions made by the clinical pharmacist to optimise the use of medicines

- Comparative approach
  - Comparison with a control group
  - Measures of impact
    - « Process » measures : quality measures
      - Appropriateness of prescribing (on admission and at discharge)
    - « Outcome » measures
      - Clinical: ADE, length of stay, mortality, readmission
      - Economic: cost of drugs, cost of hospital stay,…
      - Humanistic: quality-of-life, satisfaction

1°

How to measure appropriateness of prescribing in older patients?

1. Medication Appropriateness Index (MAI)

% of patients with ≥1 inappropriate rating?

2. Drug-to-avoid criteria (Beers)

% of patients taking ≥1 Beers' drug?

% of patients with previous fall and taking a BZD?

ON ADMISSION

versus

AT DISCHARGE

3. Underuse ACOVE criteria

% of patients with ≥1 underuse event ?

III. Evaluation – RCT – results

ON ADMISSION

1. Medication Appropriateness Index (MAI)

% of patients with ≥1 inappropriate rating?

20% --- 84%

Dupli ---- Dose

2. Drug-to-avoid criteria (Beers)

% of patients taking ≥1 Beers' drug?

30%

% of patients with previous fall and taking a BZD?

62%

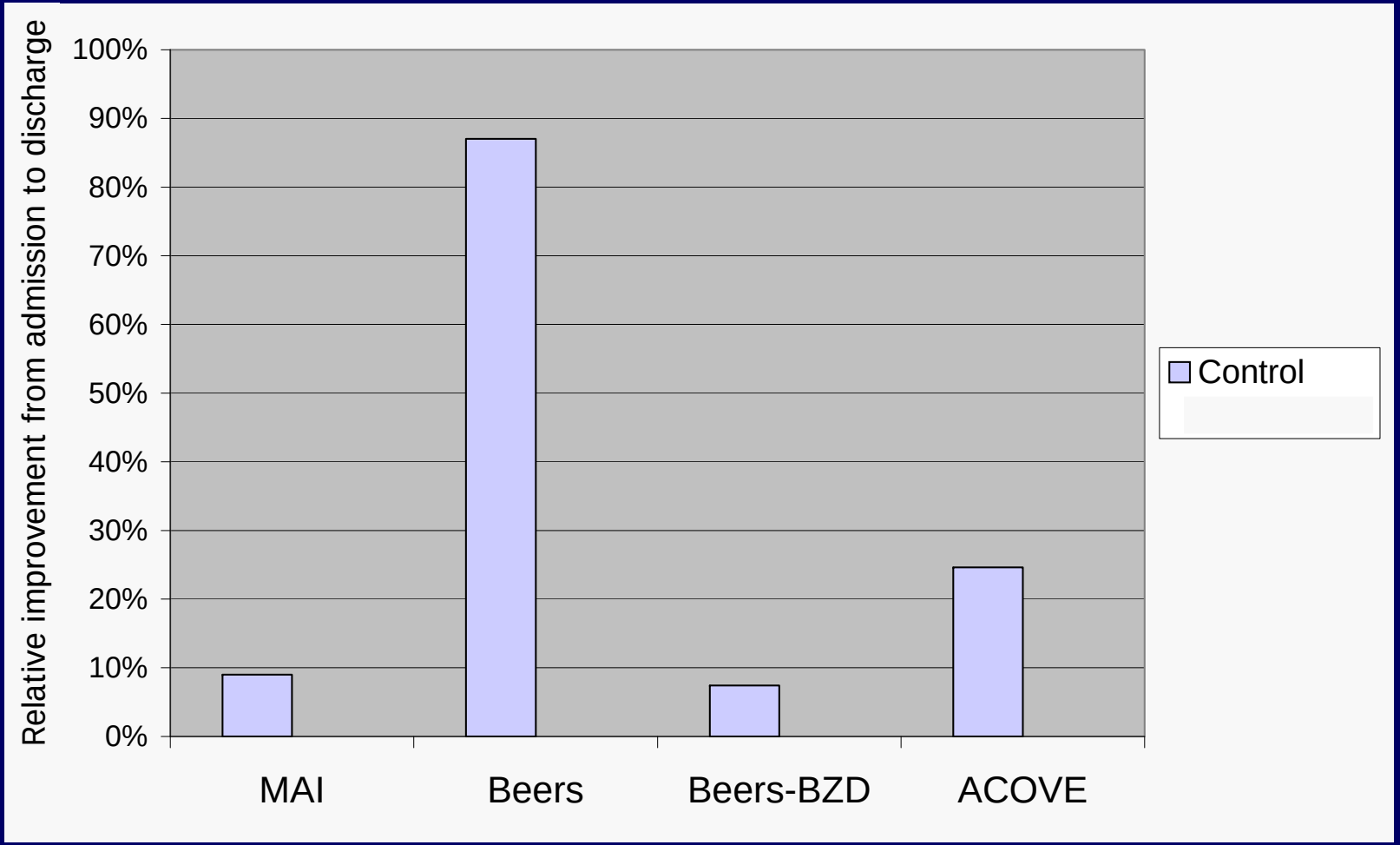
3. Underuse ACOVE criteria

% of patients with ≥1 underuse event ?

55%

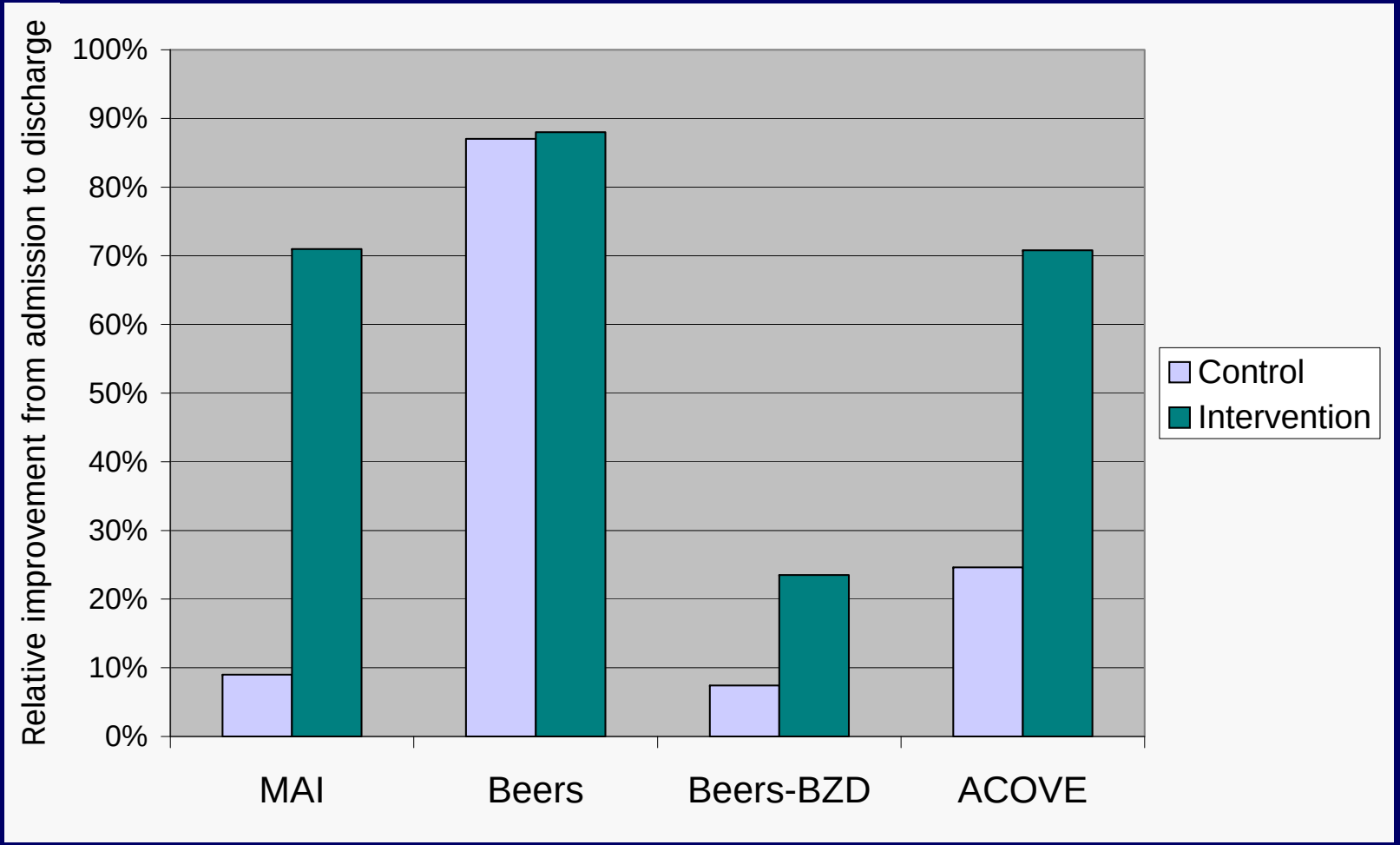
III. Evaluation – RCT – results

IMPROVEMENTS FROM ADMISSION TO DISCHARGE



III. Evaluation – RCT – results

IMPROVEMENTS FROM ADMISSION TO DISCHARGE



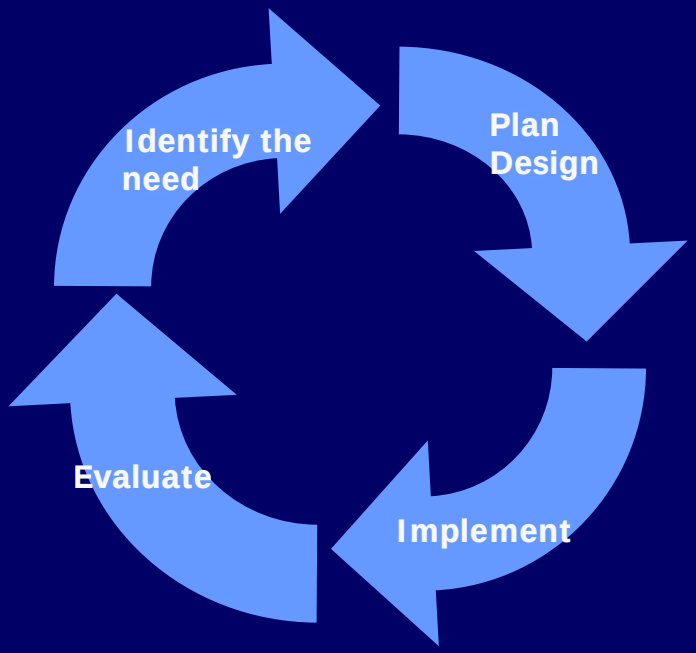
III. Evaluation – RCT – results

- Descriptive study
  - Description of interventions made by the clinical pharmacist to optimise the use of medicines

- Comparative study
  - Comparison with a control group
  - Measures of impact
    - « Process » measures
      - Appropriateness of prescribing – maintenance of improvements after discharge

2°

    - « Outcome » measures
      - Clinical: ADE, length of stay, mortality, ↓ readmission
      - Economic: cost of drugs, cost of hospital stay,…
      - Humanistic: quality-of-life, satisfaction ↑


Identify the need
Plan Design
Implement
Evaluate

Discussion – What have we learned?

- Need to optimise use of medicines in the elderly
- Several categories of causal factors need to be addressed

- Providing pharmaceutical care
  - is feasible and well accepted
  - improves the quality of use of medicines
  - cannot be replaced by a computerised prescr. system

- New European data on inappropriate prescribing
- 1st time qualitative approach taken

- New and robust data on impact in acute geriatrics
- Of interest for implementation in other European countries