DRUG-RELATED PROBLEMS AMONG ELDERLY WHO RECEIVED COMPREHENSIVE MEDICATION REVIEW

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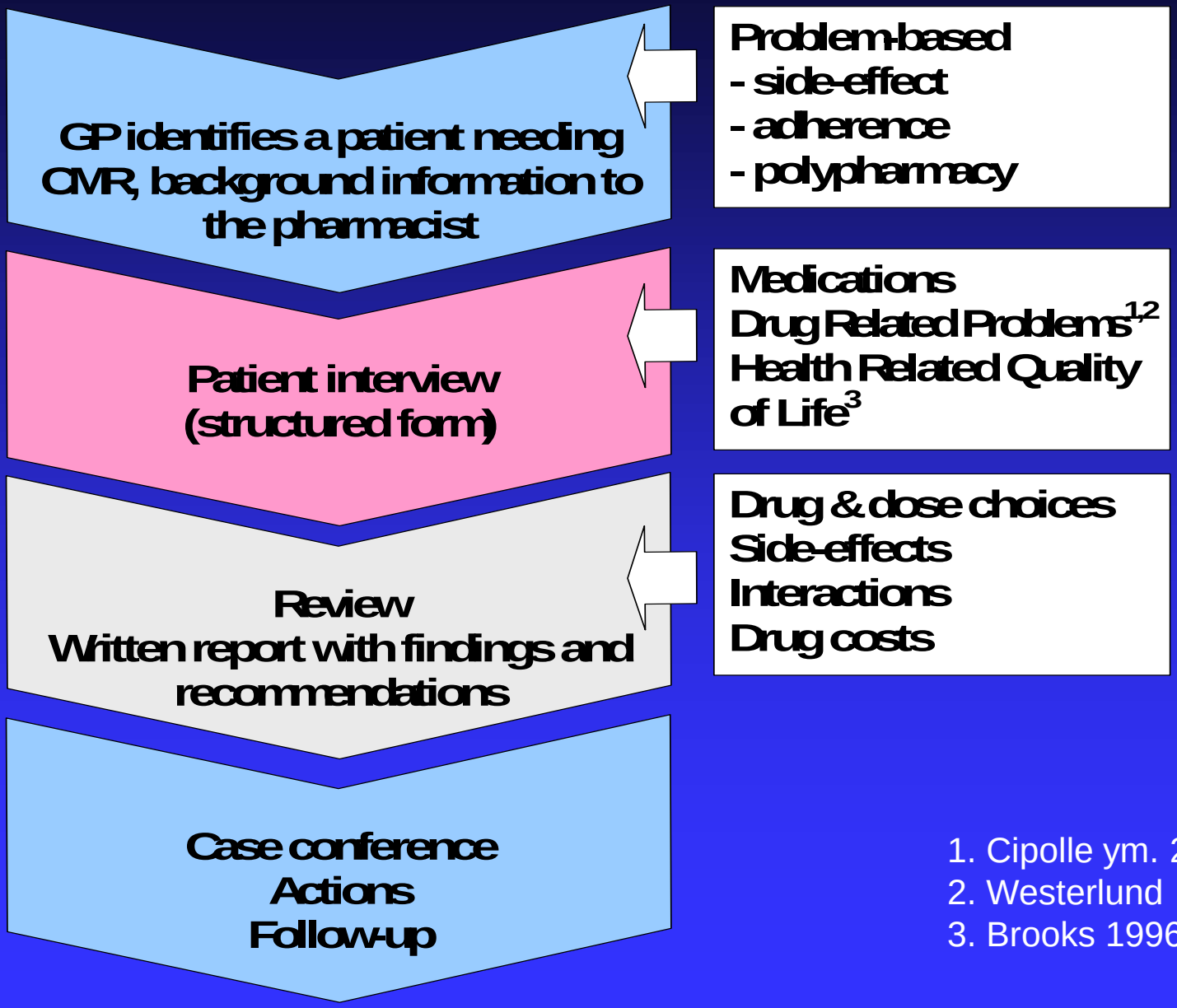
CMR PROCESS



1. Cipolle ym. 2004
2. Westerlund ym. 2001
3. Brooks 1996

METHODS

- Development of CMR integrated to a 1,5 year continuing education training for pharmacy practitioners => accreditation
  - Key components: multiprofessional collaboration, actual patient cases
- CMR training courses initiated in 2006 in Oulu and Helsinki, patient cases aged ≥ 65 years by 26 attending community pharmacists
- DRPs classified from written case reports by the PCNE Classification for DRPs version 5.01

PATIENT CHARACTERISTICS (n=121)

- Patients from 22 municipalities across Finland
- 58% home-dwelling (n=70), 42% assisted living setting (n=51)
- Mean age 80 years (range 65-95)
- Average number of regular prescription medications 12.3 (4-23), as needed (2.8) and OTC 2.2

DRPs

- 785 DRPs
- Average 6.5/patient (range 1-20)

MOST COMMON DRPS

Inappropriate drug for indication (17%, n=136)	Hypnotics and sedatives, anxiolytics, mebrobamate
No drug, but clear indication (16%, n=125)	Calcium, statins, ACE-inhibitors
Drug dose too high (12%, n=95)	PPI, furosemide, hypnotics and sedatives
ADR (11%, n=84)	Opioid analgesics, antihypertensive drugs

ADR=adverse drug reaction
PPI= proton pump inhibitor

CAUSES

- Most often related to prescribing
  - C1.1. Inappropriate drug selection (23%)
  - C1.2. Inappropriate dose selection (14%)
  - C1.4. Pharmacokinetic problems (14%)

- Patient-related causes rare (<3%)

ACCEPTANCE AND INTERVENTIONS

- 649 recommendations, 55 % (n=360) accepted as made

- Drug-level interventions in 51% of DRPs
  - I3.5. Drug stopped (32%, n=128)
  - I3.2. Dosage changed (23%, n=93)

LIMITATIONS

- Pharmacists still in training: issues for discussion
- Patients selected problem-based: results not generalizable to all elderly population
- All interventions not possibly implemented
- Problems solved at patients home not coded, unless reported to the physician

DIFFICULTIES FACED WHEN USING PCNE CLASSIFICATION FOR DPRS VERSION V5.01 FOR CODING

DRPS DIFFICULT TO CODE

- PRACTICAL DIFFICULTIES
  - e.g. The patient uses an asthma inhaler incorrectly, difficulties with swallowing big tablets/capsules

E.G. PATIENT USES AN ASTHMA INHALER INCORRECTLY

- Is this a problem ”per se”? => New problem code ”Practical problem”
    - OR?
- Is the problem ”Drug dose too low”?
    - OR?
- ”Risk for an adverse effect”? (cortisone=> oral fungus infection)

DRPS DIFFICULT TO CODE

- WRONG DOSING TIME
  - e.g. Statins taken in the morning => less effective
- WRONG DOSING INTERVAL
  - e.g. Nitrates without proper washout period (at 8 am, 14 and 20 pm)
  - => We added to P3. Dosing problems: P3.5. Inappropriate dosing time or interval

DRPS DIFFICULT TO CODE

- INEFFECTIVE DRUG THERAPY
  - e.g. BB medication, hypnotics
  - What is the problem?
    - Dose low?
    - Inappropriate drug for indication?
    - Duration of treatment too long?

E.g.: Sleeping pills are not helping. Treatment has continued for years. What's the problem?

- Problem: Duration of treatment too long
- Cause: Inappropriate repeat prescribing

- OR?

- Problem: Ineffective treatment
- Cause: Duration of treatment too long

DRPS DIFFICULT TO CODE

- ECONOMICAL CONSIDERATIONS
  - Common
  - Drug unneccesarily expensive
  - We didn't code these, as the PCNE classification version 5.01 does not consider high costs as DRPs

VERSION 6 HELPFUL (adds ineffective therapy), BUT:

- Don't remove ”Drug dose too high”
  - Beers criteria for inappropriate drug use among the aged lists some drugs to be inappropriate only by dose
    - eg. Digoxin > 0,125 mg, Lorazepam > 3 mg, Temazepam > 15 mg

E.g. Recommendations say that dose of paracetamol shouldn't exceed 3 g. Dose used is 4 g.

- What is the problem?
- Drug dose too high? (an easy alternative)
- If no such code =>
- Risk for an adverse effect?

CAUSES

- DIFFICULT TO CODE
  - Cases, where the problem was ”Duration of treatment too long” and cause inappropriate repeat prescribing:
    - e.g., alendronate etc. > 5 years
    - Hypnotics > 2 weeks (for years)
- WE ADDED: To C1. Drug/dose selection
  - C1.9. Treatment not discontinued/intervalled appropriately

CAUSES

- DIFFICULT TO CODE
  - Several various patient-related causes

- WE ADDED: To C4. Patient/Psychological
  - C4.11. Other patient-related cause

INTERVENTIONS

- Due to the time between the review and case conference:
  - I1.6. Intervention proposed, carried out before case conference
- Intervention not actually rejected/accepted
  - I1.7. Intervention proposed, prescriber carried out other intervention

CONCLUSIONS

- DRPs common among aged CMR patients
- Despite of polypharmacy, undertreatment also problematic

- PCNE classification OK for research purposes with slight modifications
- Needs to be simple and ”easy-to-use” for pharmacists reporting findings and interventions during CMR

THANK YOU!

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