Medication reviews at the general practitioners' office – a multidisciplinary approach in ambulatory care?

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Background

- **Admission to hospitals often implies alteration of medical treatment.**

- **Many medication changes needs monitoring to observe effects and adjust dosing i.e. increase or reduction, blood tests etc.**

- **Imperfect communication may impair optimal patient treatment after discharge**

Background

- **The follow-up of medication changes after discharge from hospital is a challenge for the GPs**

- **Some GPs finds it difficult to change drugs and dosages initiated by specialists**

- **Few studies have looked into how GPs handles changes in medications performed during the hospital stay**

Aim

Investigate whether outreach visits to GPs by hospital pharmacists can improve patient drug use in primary care

Methods

- Patients with were recruited from 6 hospitals in southern Norway, February 2008 – September 2009 (3 x 2 weeks periode)

- Inclusion criteria

  - Patients ≥ 18 years and

  - At least one change in their medicine regimens during hospitalization

  - Written informed consent

- Clinical pharmacists made appointments with the patients' GPs four to five months after discharge

- The participating pharmacists were trained in methods for medication reviews

Methods – medication review

The pharmacist had background information from the hospital stay (discharge note, information from the hospital stay noted in the medical journal and clinical chemical data)

In the review, follow-up and monitoring of drug use

was discussed:

- All medications, incl. dose

- clinical chemical data and other relevant tests for drug use, e.g. s-creatinine, electrolytes, blood pressure

Results

- 184 patients agreed to be included in the study

- Medication reviews at the GPs could be performed for 105 patients

- The reasons for not performing medication reviews after 4-5 months:

  - the GPs did not want or did not have time to schedule a meeting

  - the patients had died.

- Eight pharmacists and 88 GPs took part in the study

Results

No. of patients	184	105
	percent (SD)	*percent (SD)*
Gender: % female	55.4 (3.6)	54.3 (4.9)
Patients with heart failure	23.4 (3.1)	16.2 (3.6)
Patients with GFR<50 ml/min	33.2 (3.5)	34.3 (4.6)
Patients with metabolic disease	26.6 (3.3)	27.6 (4.4)
	Mean (SD) [range]	*Mean (SD) [range]*
Age	76.2 (13.4) [22-98]	76.1 (12.3) [41-95]
Length of stay at hospital (days)	11.2 (11.8) [1-101]	12 (13.3) [1-101]

Results

No. of patients	105
	Mean (SD) [range]
Drugs at discharge (all)	7.6 (3.5) [1-17]
Drug changes at hospital	4.4 (2.7) [1-16]
Drug changes after discharge	3.4 (2.9) [0-14]
Drug changes at hospital changed again after discharge	1.5 (1.8) [0-13]

Results – changes by GP after discharge

N=105 patients			Drug groups (ATC) involved in changes (no. of times)
Changes by GP after hospital stay	**Number**	**Mean (SD)**	
Start	134	1.3 (1.4)	Opioid analgesics N02A (17), weak analgesics N02B (12). Drugs most often involved: paracetamol and combination of codeine/paracetamol.
Dose adjustment	73	0.7 (1.1)	Adrenergics for inhalation R03A (9), diuretics C03C (6), oral glucocorticoids H02A (6). Drugs most often involved: metoprolol and prednisolon.
Stop	150	1.4 (1.8)	Antithrombotic agents B01A (14), hypnotics N05C (13), oral glucocorticoids H02A (11). Drugs most often involved: zopiclone and prednisolon.

Number = no. of drugs. Mean= mean no.of changes per patient. Some patients had more than one changes

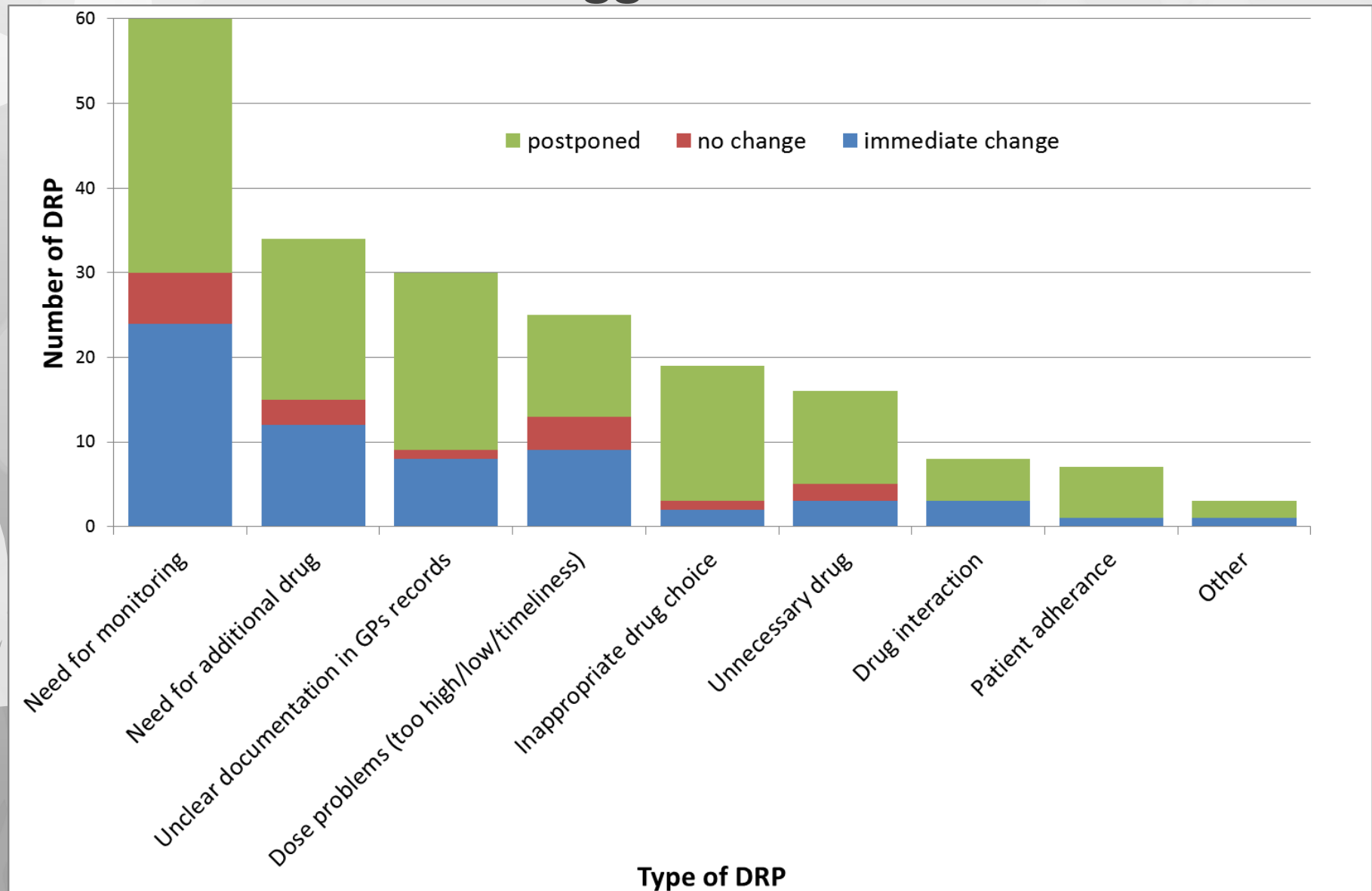# Results - medication review

- Altogether 202 DRPs were identified in 74 patients

- Patient identified with DRP had on average 2.8 DRPs (range 1-15)

- 31 patients had no DRPs

- The most frequent DRPs were need for medication monitoring (60 DRPs), need for additional drug (34) and unclear documentation in the GPs records (30)

Results - medication review

- The GPs agreed to undertake immediate changes related to 63 (31%) of the DRPs discussed

- For 17 DRPs (8%) no changes were performed

- For 122 (61%) DRPs a decision was postponed and could not be taken before the GP had seen the patient or medication monitoring had been performed

- Five drugs accounted for 25% of the 202 DRPs, these being digitoxin, warfarin, metoprolol, calcium and bumetanid

Type of DRPs and respons to pharmacist suggestion

Results - medication review

- Three drugs accounted for 27% (17 times) of the DRPs immediately solved; digitoxin, warfarin and bumetanid

- Two drugs accounted for 24% (4 times) of DRPs declined; calcium and metoprolol

- Four drugs accounted for 17% (20 times) of DRPs – decision postponed; pantoprazol, warfarin, digitoxin and the combination of codeine/paracetamol

Discussion –
Is drug use improved by the medication review?

- **We do not know for sure!**
  - We did not register whether the medication changes were clinically beneficial for the patient
  - And we did not follow the patients after medication review at GPs
  - But – we know that there were changes

Discussion - Limitations

- It was hard work and difficult to get an appointment with the GPs

- Of the included 184 patients, medication reviews were performed for only 105 patients due to different reasons

- We do not know enough about why the GPs disagreed

  - Reason for declining

    - no refund

    - no time

    - have not seen patient for a long time

    - patient died/moved/changed GP

Conclusion

- Many changes in medication regimen during hospitalization and many changes in the first months after discharge (by GP)

- There is a special need for follow-up and surveillance of drug regimens for patients discharged from hospital

- Medication reviews performed in a multidisciplinary setting in primary care might improve drug use among patients discharged from hospital

- However, pharmacists are still not a natural part of the health care team

- Increased focus on communication between level of care is needed

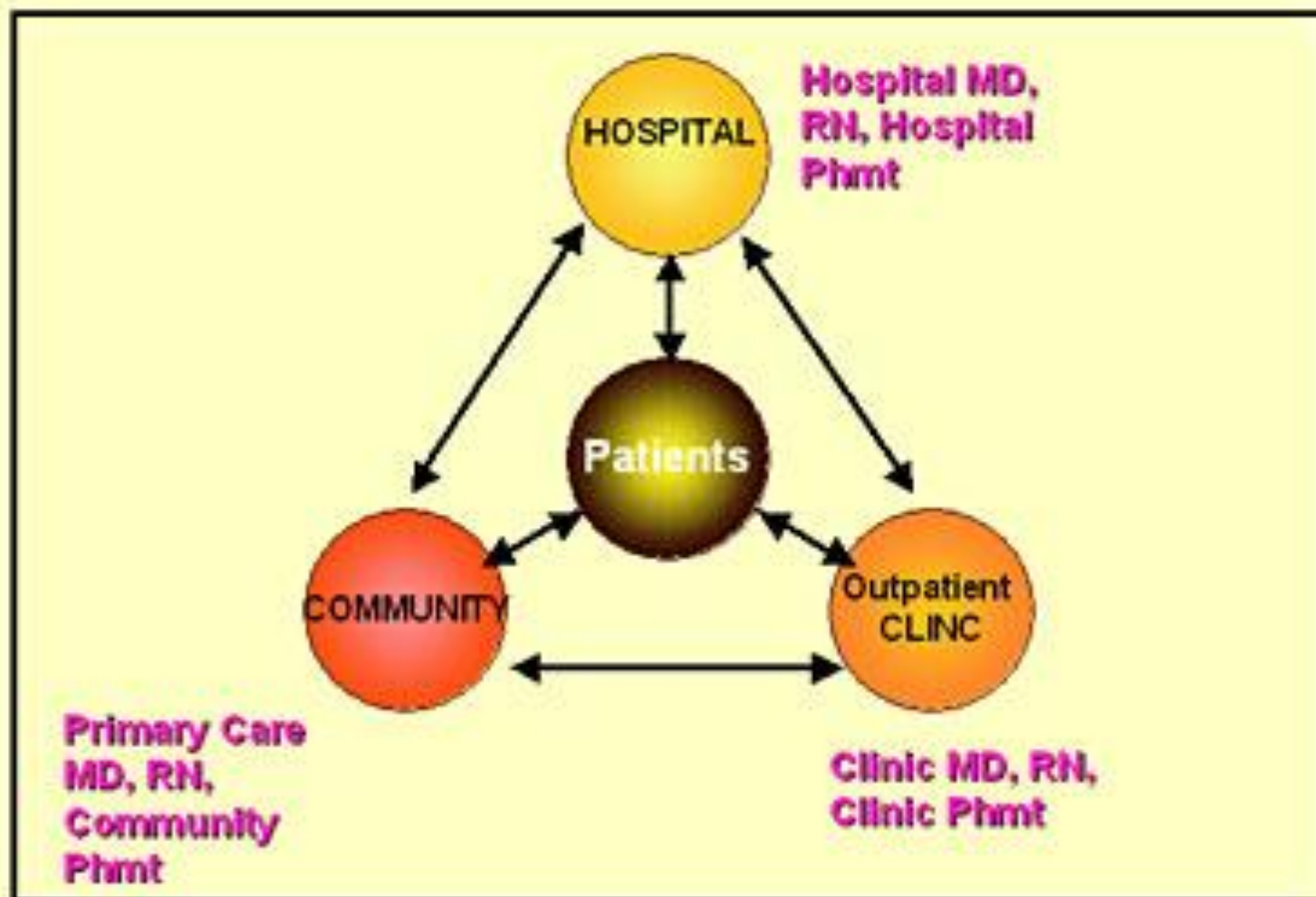# Thank you for the attention - Questions?

Results:
Type of change during hospital stay and how they are handled 4-5 months after discharge (already changed by the GP)

Type of change at hospital	Result after 4-5 months	No. patients (No. drugs)
Start 95 patients, 304 drugs	Stop	44 (86)
	Change dose	15 (18)
	No change	86 (200)
Change dose 45 patients, 66 drugs	Stop	11 (13)
	Change dose	14 (15)
	No change	26 (38)
Stop 58 patients, 95 drugs	Start	14 (21)
	No change	47 (74)

Patient & Multi-Disciplinary Interfaces in the Medication Information Transfer Process

S. Ong et al *Ann Pharmacother* 2006;40:408-13

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Results:
Type of change during hospital stay and how they are handled
4-5 months after discharge (already changed by the GP)

Type of change at hospital	Result after 4-5 months	No. patients
Start 95 patients (90 %), 304 drugs	Stop	44
	Change dose	15
	No change	86
Change dose 45 patients (43 %), 66 drugs	Stop	11
	Change dose	14
	No change	26
Stop 58 patients (55 %), 95 drugs	Start	14
	No change	47