

NSQH, Copenhagen 2012



Development and evaluation of a clinical pharmacy screening service of risk medications: a national collaboration study

**Lene Juel Kjeldsen, SAFE, Amgros
(On behalf of the study group)**



Background; national study

- ▶ Wish among clinical pharmacists (CP) in Denmark to conduct a national clinical pharmacy project
 - Strengthen clinical pharmacy in Denmark
 - "Do something together" (=common understanding of a specific intervention)
 - Participating in a project without the evaluation burden
 - Improvement in competences
- ▶ Spring 2010: Survey of potential subjects and interventions



Background; intervention study

- ▶ 9 June 2010: Kick off meeting
 - + intervention
 - Strength of the study
 - Develop a clinical pharmacy service
 - Risk medications
 - Generic project – all CP should be able to participate
 - Evaluation (paper) – preferably including economic evaluation





The project group

▶ Members:

- Capital Region of Denmark
- Region Zealand
- Region of Southern Denmark
- Central Denmark Region
- North Denmark Region
- **SAFE**



- ▶ Assist in developing the intervention
- ▶ Ensure that the project could be conducted in practice locally
- ▶ Support implementation of the study locally



Aims

- ▶ **Aim of the project:** To develop and evaluate a national clinical pharmacy study
- ▶ **Aim of the intervention study:** To ensure optimal treatment with risk medications among hospitalised patients in Denmark



Methods I

▶ Risk medications selected:
(Literature: frequent and severe adverse events):

- Anticoagulation treatment
- Digoxin
- Methotrexate
- NSAIDs
- Opioids



▶ Inclusion criteria:

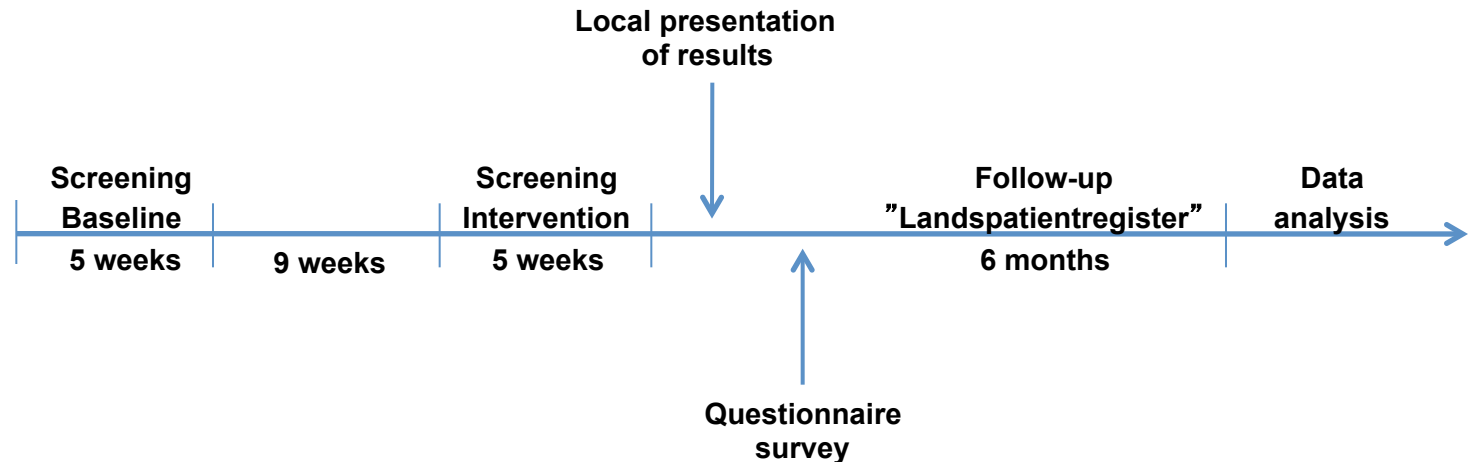
- All clinical pharmacists may participate
- All wards may be included
- All patients may be screened



Methods II

▶ Intervention

- Screening service with recommendations to physicians
- Communication of recommendations directly to the physician (eventually in addition to existing practice)
- Possibility of including pharmaconomists (“medicinservice”)





Methods III

▶ Design & evaluation

- Before-after study (controlled)
- Process data: number of patients screened, number of suggested recommendations, number of accepted recommendations
- Outcome data: re-admissions, mortality
- Cost data (health economist involved)
- Questionnaire survey of clinical pharmacists, pharmacoeconomists and physicians



Results: Demographics

- ▶ Regions=4, Locations=21
(÷ North Denmark Region)

- ▶ Clinical pharmacists=49
(Capital Region of Denmark=18, Region Zealand=3,
Central Denmark Region=14 & Region of Southern
Denmark=14)

- ▶ Pharmaconomists=22, Students=10

- ▶ Wards="43"
most frequently; orthopaedic surgery, geriatric &
acute visitation wards
 - Number of beds=27 (average) (11-63 range)



Results: Screening

- ▶ Number of screened patients
 - Baseline: **2.909**
 - Intervention: **2.399**

- ▶ Number of patients treated with one or more risk medications
 - Baseline: **1.458** (50%)
 - Intervention: **1.144** (48%)

- ▶ *Effect evaluation including accept rate of recommendations, hospital readmissions and mortality is currently being conducted*



Results: Screening

- ▶ **Example: Methotrexate**
- ▶ 44 records; 21 in the intervention period
- ▶ 1 intervention about treatment outside recommended dosing – accepted
- ▶ 1 intervention about suboptimal frequency – should be prescribed 1/week – accepted
- ▶ 7 interventions about prescription of folic acid – 6 accepted/implemented & 1 rejected (5 during the control period)



Results: Clinical pharmacists

- ▶ *Questionnaires returned by clinical pharmacists= 42 of 45 (93%)*
- ▶ Did you increase your professional knowledge by participating in the trial?

	Capital Region	Central Region	Zealand	Southern
High extent/ Some extent	16	3	2	8
Low extent/ Not at all	1	9		3



Conclusions

- ▶ A national generic clinical pharmacy service on risk medication could be developed and tested in collaboration with other health care professionals in a Danish hospital setting
- ▶ A national clinical pharmacy project can be used to increase competences in the daily work routines
- ▶ The study showed examples of increased patient safety and quality in the medication care of patients treated with methotrexate



Thank you for your attention!