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Evaluation of implementation of clinical pharmacy services in Central Norway

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Objectives

Central Norway Pharmaceutical Trust consists of six hospital pharmacies covering eight hospitals. In partnership with a research group at the University of Lund and the Lund Hospital Pharmacy, Sweden, we implemented a model for clinical pharmacy services named Integrated Medicines Management (IMM). The model is based on the Lund IMM-model (LIMM)[1] and the IMM-model[2] from Northern-Ireland. Two years on we have evaluated the service with regards to:

1. reduction in potential medication errors found by pharmacists
2. benefits for patients and healthcare professionals

Methods

The report consists of results achieved through (Figure 1):

1. **Six projects/studies** focusing on medicines reconciliation (MedRec) and medication review (MR)
2. **Two mini-audits** bench marking daily activities and documenting discrepancies found in drug histories and drug related problems (DRP) discovered through MR
3. **Three questionnaires** (as indicators of quality) investigating patient satisfaction, the clinical pharmacists' experiences with the IMM-model and the attitudes of and usefulness for healthcare professionals.

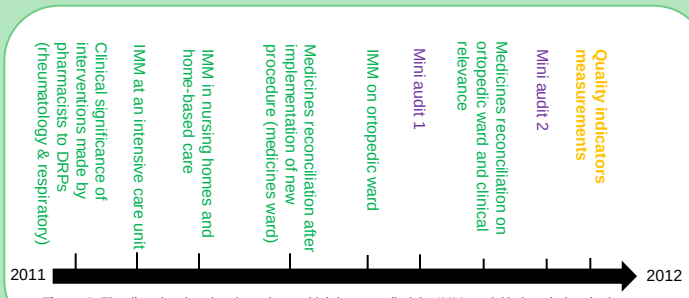

Figure 1: Timeline showing the six projects which have studied the IMM-model in hospital and primary care, the mini-audits and measurements of quality indicators

Results

Medicines reconciliation:
50-80% of patients admitted to hospitals have one or more discrepancies in their drug histories. The main reason for discrepancies was omission of drugs at point of admission.

Clinical significance:
The clinical importance of discrepancies found in drug histories were evaluated according to a short-term and a long-term perspective based on a 3 graded scale[3]. Almost 50% of discrepancies could potentially cause moderate to severe harm if not acted upon within a few days. The number increased to nearly 90% if the discrepancies were not corrected at time of discharge and were believed to be carried on in primary care.

Medication review:
On average 2.9 DRPs per patient were identified and acted upon by the pharmacists. Most frequently DRPs were:

- need for additional therapy, or
- inappropriate use of drug(s)

Clinical significance:
85% of the pharmacists recommendations were graded to be of clinical importance for the patients (grade ≥ 3 as per Hatoums[4] scale).

Nurse, St. Olavs Hospital:
«Better continuity and better follow up of correct drugs to each patient. My experience is that it's easy to ask the pharmacists and they are committed to each patient»

Consultant, Aalesund Hospital:
«More resources to perform thorough quality assurance work related to medicines reconciliation; secondarily increased awareness about DRPs; increased competencies amongst doctors and nurses; change of culture; more correct and appropriate use of drugs both during hospital stay and after discharge.»

Patient, male:
«I feel safer with regards to my drug treatment»

Quality indicators:
Doctors/nurses and pharmacists have rated the clinical pharmacy service to be very good; 5.5 and 5.1 respectively (6 graded scale) with regards to patient benefits and usefulness for healthcare professionals. The patient satisfaction survey also rated the service highly among the patients (3.5 on a 4 graded scale)

Conclusion

The IMM-model has been successfully implemented in hospitals in Central Norway. Further research will be needed to investigate clinical end-points such as reduced length of hospital stay and time to readmission. We plan to provide a more extensive service to a higher number of patients in our region, and to patients in community care.

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References:
1. Scullin C et al. Integrated medicines management - can routine implementation improve quality? J Eval Clin Pract 2011 doi: 101111/j1365-2753201101682.
2. Hellstrom LM et al. Impact of the Lund integrated medicines management (LIMM) model on medication appropriateness and drug-related hospital revisits. Eur J Clin Pharmacol 2011; 67:741-52.
3. Cornish PL et al. Unintended Medication Discrepancies at the Time of Hospital Admission. Arch Intern Med 2005; 165: 424-9
4. Hatoum HT et al. Evaluation of the contribution of clinical pharmacists: inpatient care and cost reduction. Drug Intell Clin Pharm 1988; 22(3):252-9

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