

# SHARING DRUG INFORMATION TO OPTIMISE PRESCRIBING AND ADMINISTRATION OF MEDICINES FOR HOSPITALISED PATIENTS: from theory to daily practice

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## BACKGROUND & OBJECTIVES

Forty-nine percent of adverse drug events are due to ordering and prescribing errors. Pharmacists – as the drug specialists in the hospital - play a key role in providing relevant drug information to other health care providers in order to reduce adverse drug events and improve patient safety. Our objective is to analyze pharmacist's interventions during drug order validation after implementation of standardized drug information in a computerized physician order entry system (CPOE).

## METHODS

- Integration of structured and standardized drug information in a CPOE system and on the hospital's intranet of a 500-beds regional hospital.
- Systematic drug order validation prior to dispensing by trained hospital pharmacists.
- Analysis of pharmacist's interventions (e.g. number, reason intervention, acceptance rate).

## RESULTS

### Guided prescribing in CPOE system

- Predefined drug orders of multiple drugs in relation to specific procedure or diagnosis (eg CABG,...) - Figure 1
- Schemes for intravenous drugs (including correct infusion bag and duration of administration) - Figure 2,3,4
- Drug-specific reminder possibility IV-oral switch - Figure 5

Drug prescribing  
 physician

Cardiale HK: bioprothese/plastie mitralsklep			
ALDACTONE	50 MG	COMPR	F SPIRIX
ASAFLOW	80 MG	COMPR EC	F CARDIPHAR, THERASA-80
BURINEX (LEO PHARMA)	1 MG	COMPR	F BURINEX (PI-PHARMA)
DAFALGAN FORTE	1 G	COMPR	F PARACETAMOL TEVA
EMCONCOR MINOR	2,5 MG	COMPR	F BISOPROLOL SANDOZ, BISOPROLOL
FRAXIPARINE	0,6ML	SPUIT	F FRAXIPARINE (PI-PHARMA)
RANITIDINE EG	150 MG	COMPR	F AZANTAC OLYMPO PHARMA, DOCRAN AKTUAPHARMA, ZANTAC OLYMPO PH
TRADONAL ODIS	50 MG	COMPR	F

Fig. 1

Schema's

Naam: Cardio: cordarone IV spuitpomp Opmerking: oplaaddosis over 1u + spuitpomp over 24u NIET in NaCl 0.9% bij voorkeur via DVC

Dag 0:

300 MG CORDARONE (150 MG) + 50 ML glucose 5%

900 MG CORDARONE (150 MG) oplossen met 30 ML

Continu PERFUSIE

Fig. 2

Medicijn	Dosis	Vorm	F
AB: amukin IV	1000 MG	AMUKIN (1000 MG) + 100 ML NaCl 0.9%	
AB: augmentin IV (amoxiclav)	1 FLACON	AMOXICLAV SANDOZ (1G/200MG) + 50 ML NaCl 0.9%	
AB: avelex IV	400 MG	AVELOX PERF (400 MG)	
AB: cefazoline IV	1 FLACON	PARACETAMOL FRESenius (1 G)	0.9%

Fig. 4

CORDARONE | 200 MG | COMPR

Productnaam: Cordarone

Dosis: 200 MG

Vorm: COMPR

Productinformatie: Niet geschikt voor gebruik bij patiënten met een bekende overgevoeligheid voor amiodaron of een van de hulpstoffen.

Productaanwijzingen: Niet gebruiken bij patiënten met een bekende overgevoeligheid voor amiodaron of een van de hulpstoffen. Niet gebruiken bij patiënten met een bekende overgevoeligheid voor amiodaron of een van de hulpstoffen.

Fig. 6

Drug administration  
 nurse



Drug order validation  
 pharmacist

1 FLACON PARACETAMOL FRESenius (1 G)

Intermittent PERFUSIE

Intermittent om de 8 uur: volledige perfusie 100 ML / 15 minuut

Debiet: 400 mL/u

IV-PO switch mogelijk cfr. criteria

Soortnaam: Gyneco gynaecoma 1 ALS <60kg

Fig. 5

Fig. 3

### Drug information available in CPOE system and hospital's intranet, e.g.

- Drug specific information concerning crushing oral dosage forms - Figure 6
- Schemes for intravenous drugs (including correct infusion bag and duration of administration) - Figure 4

### Patient-tailored advises prior to dispensing: systematic drug order validation, with aid of the integrated drug information, e.g.

- Check of drug dosing and administration modalities
- Evaluation of drug therapy in relation to known drug allergy
- Check of contra-indicated drug interactions (e.g. meropenem-valproate, low-molecular weight heparin (LMWH) on same time prescribed as novel anticoagulant (NOAC))

## CONCLUSIONS

Integration of standardized drug information in existing computerized systems in combination with patient-tailored advises by the hospital pharmacist, improves quality and safety of drug orders and administrations for hospitalised patients. Analysis of pharmacist's interventions provides valuable information to continuously improve our drug information service.

Reason intervention	Frequency
Inappropriate drug dose/frequency	31%
Documented drug allergy for prescribed drug	21%
Inappropriate IV drug administration	16%
Duplicate therapy	16%
Interaction LMWH-NOAC	8%

Over a 4-month period, 119 interventions were registered. Overall acceptance rate was 88%.

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