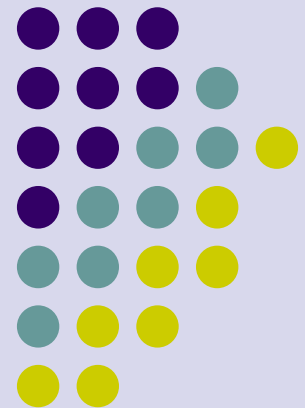




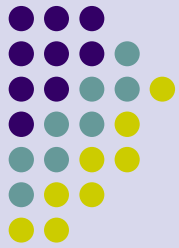
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# Implementation of Clinical Pharmacy

Pharm B. Claus  
Ghent University Hospital



# SYSTEMATIC REGISTRATION OF INTERVENTIONS BY CLINICAL PHARMACISTS



## Implementation 2003:

First ward pharmacist MICU

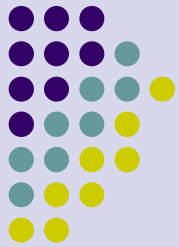
## Situation 2006:

MICU, SICU, PICU, PIMCU, Geriatrics...

(Gastro-oncology, Hematology,  
Abdominal Surgery...)

Nutritionteam, Infectiology, Pain  
Management...

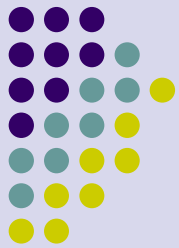
# SYSTEMATIC REGISTRATION OF INTERVENTIONS BY CLINICAL PHARMACISTS



**To create, evaluate and implement a tool for systematic registration of all clinical interventions made by pharmacists working at different clinical wards.**

**To perform a pharmaco-economical analysis**

**(Conort O, Bedouch P et al. Validation d'un outil de codification des interventions de pharmacie clinique. *J Pharm Clin* 2004; 23(3): 141-147.)**



# FINAL STRUCTURE

## GENERAL INFORMATION

Type of ward, pharmacist, type of drug, “clinical question”.

## CLASSIFICATION OF INTERVENTION

For “classification” a hierarchical structure is developed.

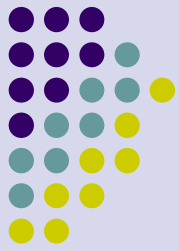
*Clinical implication of an intervention is also taken into account.*

## CONTACT INFORMATION

Type of communication, time spending, person who was contacted by pharmacist.

## INTERVENTION “SCORE”

To make “scoring” possible by expert panels drop-down modules are incorporated where the impact (clinical and economical) can be measured and where the degree of acceptance of the intervention is traced.



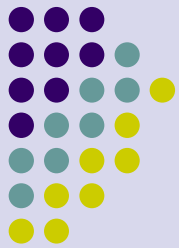
# ECONOMICAL ASPECT

- Frequently performed, less economical impact, learning effect

IV/ORAL SWITCH

- Less frequently performed, high economical importance

INTERACTION OMEPRAZOLE/METHOTREXATE



# EXAMPLE 1

**ICU** is responsible for 17% of drug costs at the Ghent University Hospital. 39,7% of those costs are spent on antiinfective drugs (AIT).

Cost savings (euro's previously spent that are no longer spent) as a result of pharmacist's interventions in AIT are calculated as:

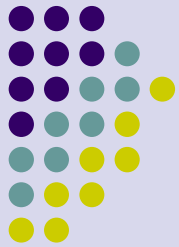
(daily cost of AIT ordered by physician) minus  
(daily cost of AIT as proposed by pharmacist).

The number of days that savings are accounted for is one.

Incremental costs (e.g. a more expensive therapy) proposed by the pharmacist are calculated on the same basis.

Results: cost saving: € 3896 from 26/64 accepted interventions on antiinfectives.

**(BVG 2004)**



## EXAMPLE 2

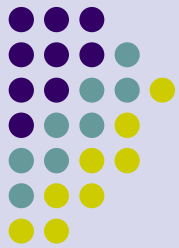
### ICU sequential therapy

IV/oral switch 2004 vs. 2005: decrease with 42% for FQ (Interrupted Time Series Analysis)

- Learning aspect  
(educative visits of infectiologist at stafmeetings through the hospital; posters and reminders by pharmacist at MICU)
- Other switches are proposed by pharmacist (PPI, analgetics...)

Early switching of fluoroquinolones can significantly reduce cost: pro-active switching by pharmacist can reduce intravenous therapy (at the moment the patient is able to have oral treatment) by 3 days with a reduction in drug cost of 143,9 euro per patient.

**(Keuze en gebruik van geneesmiddelen in de Belgische ziekenhuizen. Belgian Federal Science Policy Office. Closon MC, Robays H, Bauters T, Buyle F, Chevalier P, Claus B, Gobert M, Kestens E, Somers A. Academia Press 2005. ISBN 9038208707)**



## EXAMPLE 3

### Malnutrition screening at ICU

Assumption (European literature):

-Prevalence: 20% - 42%

-Difference in LOS: 3.1 - 4.4

Average Cost/Day B 418 euro

Additional Cost/Stay 260 – 772 euro (up to 22,5% of average cost/Stay)

Pharmacist screening for enteral/parenteral need.

(Edington et al. Clinical Nutrition 2000; Pichard et al. 2003)