



# Antibiotic Drug Monitoring Quality Assessed by a Clinical Pharmacist : Qualitative Study

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# Background

- **Our companion study (see abstract PK-102) showed that the performance of TDM in our Institution (400 beds teaching hospital) was very poor (incorrect sampling times; gross deficiencies in communication between the ward and the laboratory)**
- **This significantly affected the quality of TDM, leading to dosage adjustment recommendations that were only infrequently implemented.**

# Objectives

- **Gaining insight in issues causing poor performance of antibiotic therapeutic drug monitoring (TDM) in a University hospital.**
- **Collecting perception of current TDM practice by health care professionals and laboratory personnel.**
- **Exploring approaches for optimizing TDM**

# Qualitative study: Overall design



- Focus group interviews
- Small groups (4-15 persons)
- Independent moderators
- Validated questionnaire to guide discussion
- Post-interview analysis of transcripts with QSR  
Nvivo 1.2 for Windows®
- Grounded theory approach  
(classification of emerging themes)
- Validation

# Setting



**3 groups of individuals directly involved in antibiotic TDM :**

- **prescribing physicians (7),**
- **nurses (10),**
- **laboratory technicians (6)**

## **Wards:**

**Orthopaedic surgery, general surgery, neurosurgery, vascular surgery, haematology and pulmonary wards,**

# Main outcome measures

- **Issues causing poor antibiotic overall TDM performance.**
- **Approaches for optimizing TDM performance supported by group consensus**

# Results (1)

## Key issues identified :

### ■ Insufficient education in pharmacokinetics

*Physician 1: “We learned it “on the job”...there’s clearly a problem of medical education”.*



### ■ Insufficient information communication

*Physician 1: “At least 10% of sampling request is incomplete ...\*”.*

*Physician 3: “If we take the result in consideration...catastrophe”.*



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\* Do not say this to a child...

# Results (2)

## Key issues identified :

### ■ Conflicting guidelines

*Nurse 4: "Different recommendations exist in our hospital...  
and give different sampling times..."*

*Nurse 6: "This leads to confusion".*



### ■ Nursing work overload

*Nurse 1: "If there are patient calls at the time of the sampling, we will  
first answer them, ...the sampling will be  
postponed...because we cannot leave somebody in a  
difficult situation".*





# Results (3)

## Key issues identified :

- **Lack of perception of positive benefit/risk ratio**

*Nurse 7: "For example if a patient develops renal failure, we don't realize that it can be related to high antibiotic blood levels. If somebody would tell us...we would pay more attention".*





# Results (4)



## Approaches for optimization (consensus) :

### ■ Continuous education of all stakeholders

*Nurse 1 : "To sensitize the nursing team during team meetings ... I think that information and making people alert will lead to considerable improvement".*

### ■ Daily multidisciplinary collaboration with infectious disease physicians and clinical pharmacists

*Nurse 5 : "... somebody visiting the ward every day ... who explains ... a pharmacist ... always collaborating with the infectious disease physicians".*

# Results (5)

## Approaches for optimization (consensus) :



### ■ Simple and uniform guidelines and procedures

*Physician 3 : "I would suggest to make one simple document containing a simple list of indications and to state clearly that if sampling conditions are not respected, TDM is useless and can even harm the patient".*

### ■ Implementation of a simpler administration scheme

*Nurse 5 : "For all problems related to the control of the duration of administration, continuous infusion is a good solution".*

*Nurse 8 : "And there's no peak level to be drawn ..."*



# Results (6)

## Approaches for optimization (consensus) :

### ■ Increased staffing

*Nurse 9 : " We don't have the time to go back  
and check for administration problems...  
it would be good to have an increased staff ".*



# Conclusion



**Correct performance of TDM  
and its implementation in routine clinical care  
needs to be critically assessed  
and appears to be mainly dependent  
on non-laboratory-related parameters.**

