

# Comparison of five health care professionals' ratings of the clinical significance of drug related problems

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## Introduction

Patients face different health care professionals in both the primary and secondary sector. Medications are reviewed more and more systematically and each health care professional who identifies a drug related problem (DRP) automatically prioritises it according to potential clinical seriousness.

## Objective

The objective of this study was to compare the agreement of the clinical significance of pharmacist identified DRPs between pharmacist and the medical staff in different settings.

## Method

DRPs were identified in 30 comprehensive medication reviews conducted by a clinical pharmacist at the Multidisciplinary Pain Centre, Rigshospitalet. Pharmacist intervention consisted of medication reconciliation, patient interview, medication review and oral or written communication of identified DRPs to the patient or the treating physician.

An evaluation panel of five members (the Panel); two hospital pharmacists, a general practitioner and two specialists in pain management from hospital care, evaluated each DRP case considering the potential clinical outcome for the patient.

The Panel evaluated each DRP and the potential clinical consequence was categorized to be either one of five categories; nil, low, minor, moderate and highly clinical significant<sup>1</sup>.

Data was analysed using Kappa statistics<sup>2</sup> to assess whether the degree of agreement was due to chance or a defined significant agreement.

The Kappa value ( $\kappa$ ) indicates the degree of agreement between ratings of the Panel members and was assessed using the following scale

< -0.00	Nil agreement
0.01-0.20	Slight agreement
0.21-0.40	Fair agreement
0.41-0.60	Moderate agreement
0.61-0.80	Substantial agreement
0.81-1.00	Nearly perfect agreement

## Results and discussion

The Panel rated the clinical significance of 162 DRPs hence a total of 810 ratings were analysed. Analysis of the interrelationship of the five Panel members described fair agreement between one Specialist in Pain Management and the two pharmacists.

Kappa	P 1	P 2	SPM 1	SPM 2	GP
P 1	-				
P 2	0.30	-			
SPM 1	0.25	0.23	-		
SPM 2	0.00	0.16	0.05	-	
GP	0.02	0.06	0.00	-0.13	-

Table 1  
Degree of agreement between members in the Panel. P-Pharmacist, SPM-Specialist in Pain Management, GP-General Practitioner

The GP did in many cases not agree with the rest of the Panel indicating that the setting and area of specialisation might influence the rating of clinical significance. However the study also identifies disagreement between the Specialists in Pain Management.

Clinical significance of DRP's (n=162)	Pharmacist 1	Pharmacist 2	Specialist in Pain Management 1	Specialist in Pain Management 2	General Practitioner	Subtotal
<b>Categories of low clinical significance</b>						
Nil clinical significant	29	2	23	2	0	56
Low clinical significant	46	49	28	8	10	141
Minor clinical significant	42	43	52	69	32	238
<b>Subtotal</b>	<b>117</b>	<b>94</b>	<b>103</b>	<b>79</b>	<b>42</b>	
<b>Categories of high clinical significance</b>						
Moderate clinical significant	45	68	59	73	120	365
Highly clinical significant	0	0	0	10	0	10
<b>Subtotal</b>	<b>45</b>	<b>68</b>	<b>59</b>	<b>83</b>	<b>120</b>	

Table 2  
The number of DRPs each member of the Panel evaluated into five categories of clinical significance. See description of each category below. DRPs- Drug Related Problems

### Rating the clinical significance of drug related problems by member

The Panel highly disagreed on which DRPs was minor or moderate clinical significant. This is interesting as the intersection between the two covers the area where pharmacists might intervene and not refer the patient to a physician. The GP distorts the results as the GP to a higher extent rate the DRPs to be of moderate clinical significance. The GP mainly evaluate the consequence of discrepancy in drug source to be of moderate clinical significance to the patient, whereas both Pharmacist 1, 2 and Specialist in Pain Management 1 evaluate them to be of nil or low clinical significance.

## Degree of agreement by DRP sorted by the number of DRPs by type

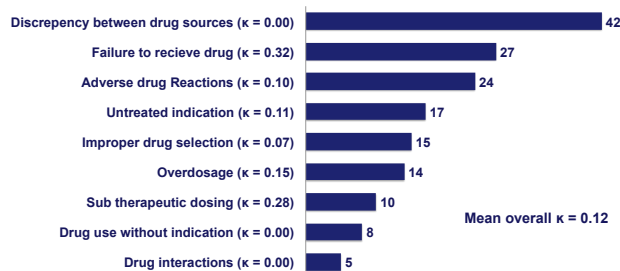


Figure 1  
Mean overall  $\kappa$  value and the variation in  $\kappa$  value calculated by DRP type and the number of identified DRPs. DRP- Drug Related Problem,  $\kappa$ - Kappa value (see Method for description of Kappa value)

## Conclusion

Whether a DRP is considered clinical significant depends on the health care professional rating. In each profession and within each profession clinical significance of DRPs were rated differently, especially the Panel disagree on which DRPs were to be intervened by the pharmacist versus the physician.

## Perspective

The disagreement may indicate that evaluating the clinical significance could in daily clinic serve as a **Learning tool** as to match the expectations of which DRPs are solved by clinically pharmacists and which should be referred to the physician for intervention. **Quality improvement tool** as to document the progress in identifying and solving DRPs of high clinical significance alike pharmacist or physician or level of experience.

## Food for thought

- Which DRPs may the pharmacist intervene on and which should be referred to a physician?
- Do younger pharmacists identify less clinical significant DRPs than more experienced?
- Can we use evaluation of clinical significance as a tool to optimize clinical pharmacy?
- Is the criterion for success only to identify drug related problems of high clinical significance?

## Will we ever agree?



## References

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