

# Check of drug interactions at hospital discharge and evaluation of a new drug interaction program

Keller T, Ullmann M, Müller B, Lutters M, Wiedemeier P  
Kantonsspital Baden, Switzerland



## Background and Objective:

Hospital discharge is a crucial point at which to detect potential adverse drug events such as drug-drug interactions.

The aims of the project were to prevent drug-drug interactions at hospital discharge and to evaluate the interaction program ID Diacos®.

## Design:

Over a period of five months all discharge prescriptions of patients leaving the hospital were screened by two drug interaction programs: Pharmavista® and ID Diacos®. Interactions which are classified as major or moderate and judged to be clinically relevant were sent to the attending physician by email with recommendations for further action. Physicians were asked to give feedback filling out a form on the clinical information system (see figure 1).

## Setting:

Department of Internal Medicine with 118 beds of a central hospital.

## Main outcome measures:

- Number of clinically relevant drug interactions
- Acceptance and implementation of the recommendations by the responsible physician
- Coherence between the results of the two drug interaction programs

## Results:

The prescriptions of 664 patients at hospital discharge were examined for drug-drug interactions. 236 prescriptions could not be screened, because the patient had already left the hospital (see figure 2).

Comparison of Pharmavista® and ID Diacos® showed that most interactions were classified similarly by the two systems. ID Diacos® has the advantage that an unlimited number of drugs could be checked simultaneously (with Pharmavista only 8 drugs at a time).

A total of 520 major and moderate drug-drug interactions were detected (36% of all identified drug interactions, figure 3). 229 (44.0%) were judged to be clinically relevant by the pharmacist and written information was sent to the attending physician. Of those, 23 recommendations had no feedback, 11 were read too late to allow an intervention (see figure 2).

87% (170 of 195) of the recommendations were accepted as clinically relevant by the attending physician, 34.9% (68 of 195) were implemented. The main reasons for non-implementation were, that the medication had been given previously, e.g. prescribed by the general practitioner, or that the medication was needed (see figure 4).

## Discussion:

Although the physician considered most of the reported potential interactions as clinically relevant, only 35% of the pharmacist's recommendations were implemented. Apparently, many physicians hesitate to change pre-existing prescriptions. Recommendations were more likely to be implemented, if the pharmacist proposed a clear alternative, for example changing the intake of Calcium from the morning to the evening.

It was difficult to get information early enough for all patients leaving the hospital, because many hospital discharges are planned at short notice.

## Conclusion:

The occurrence of potential drug-drug interactions in patients at the time of hospital discharge is common.

In the future the drug interaction program ID Diacos® should be implemented in the electronic prescribing system to detect interactions at the point of prescribing.

Figure 1. Form for physician's feedback

Figure 2.

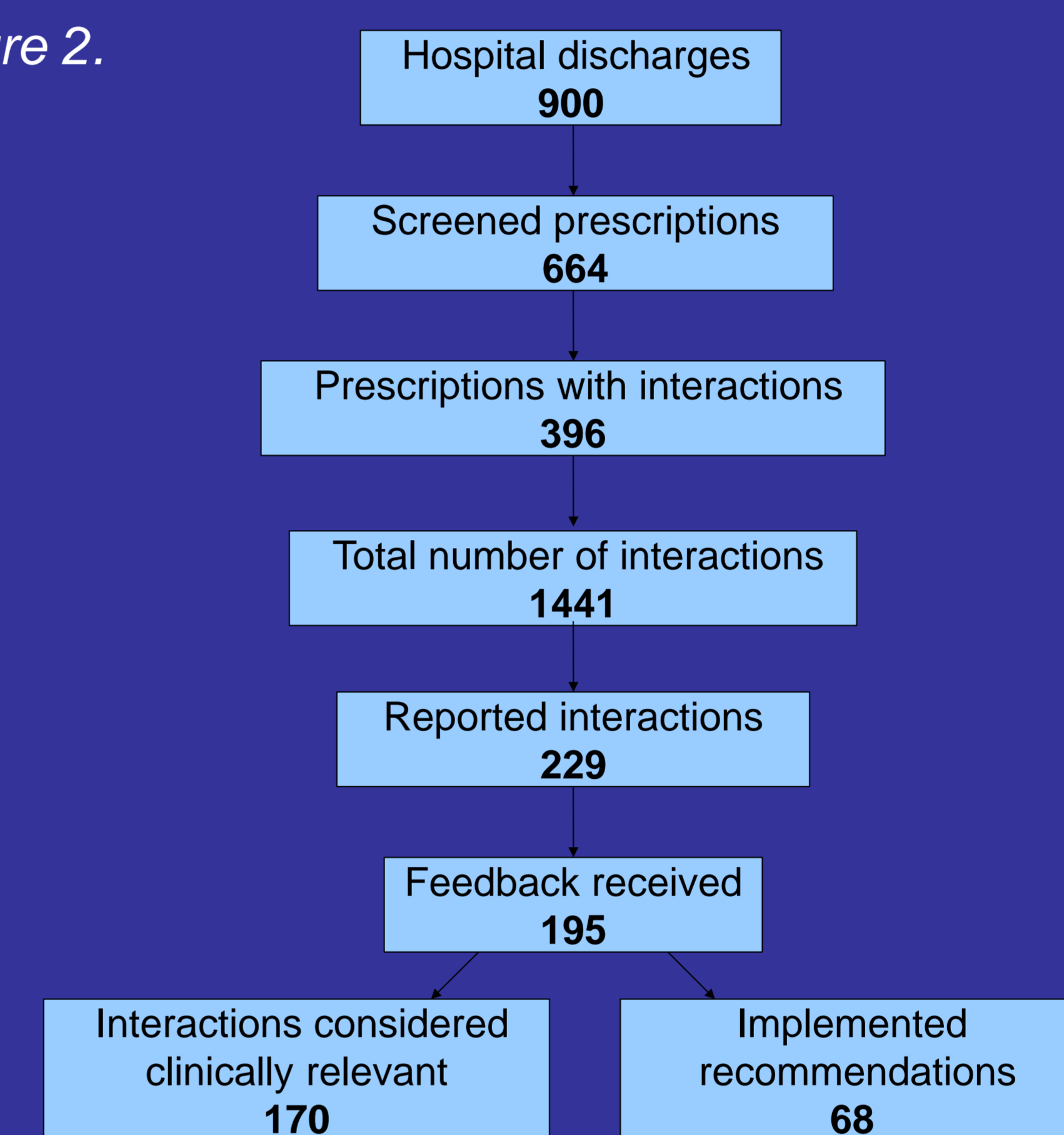


Figure 3. Severity of the identified drug interactions

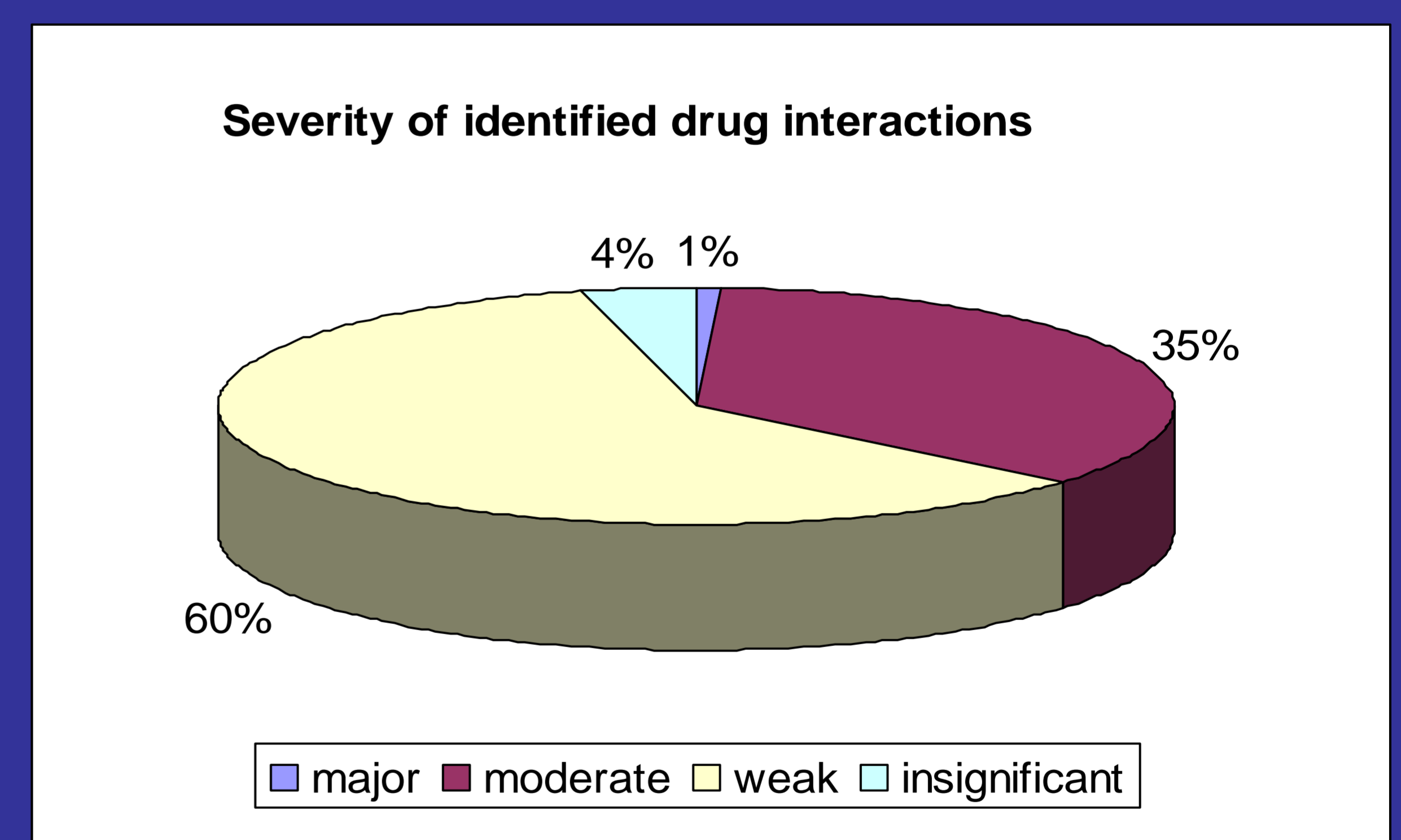


Figure 4. Reasons for non implementation of the pharmacist's recommendations.

