

## Chapter 10

# Clinical Pharmacists' Intervention Documentation in Germany with DokuPIK

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### ABSTRACT

*The addition of clinical pharmacist services in the care of inpatients generally results in improved care, with no evidence of harm. However, in German hospitals, pharmaceutical care is far from being established nationwide. The documentation and classification of drug-related problems is a fundamental and valuable tool to demonstrate the activities of clinical pharmacists.*

*As there does not exist a nationwide accepted classification system for drug related problems and clinical pharmacists' interventions, the database ADKA-DokuPIK (Dokumentation Pharmazeutischer Interventionen im Krankenhaus—Documentation of Pharmacists' Interventions in Hospital), was developed based on existing classification systems. The major aims of ADKA-DokuPIK are (1) to demonstrate the activities of clinical pharmacists in Germany in order to show their impact on improvement of drug therapy, and (2) to create a basis for the development of strategies to reduce medication errors.*

*The next challenge will be the creation of a tool to determine the economic effects of pharmacists' interventions. Up to now, there is the possibility to enter direct cost savings that can be generated through the rational use of medicines. The calculation of indirect cost savings (for example reduction of the length of stay, reduction of costs arising from inappropriate dosage, adverse effects or interactions, decrease of morbidity and/or mortality) is much more difficult, and therefore has not yet been included into DokuPIK.*

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## CLINICAL PHARMACISTS IN GERMANY

In Europe, there is an average of 0.93 hospital pharmacists/100 beds. With only 0.31 pharmacists/100 beds Germany ranks last (Surugue & Vulto, 2006). About ten times more hospital pharmacists are working in American hospitals, with about one quarter being ward based. The addition of *clinical pharmacist* services in the care of inpatients generally results in improved care, with no evidence of harm. Interacting with the health care team on ward rounds, interviewing patients, reconciling medications, and providing patient discharge counselling and follow-up all result in improved outcomes (Kaboli, Hoth, McClimon, & Schnipper, 2006; Viktil & Blix, 2008). The rate of preventable adverse drug events, the length of stay and even mortality rates can significantly be reduced by a pharmacist's participation with the medical rounding team (Bond & Raehl, 2006, 2007; Kucukarslan, Peters, Mlynarek, & Nafziger, 2003; Leape, et al., 1999) and/or chart review (Phansalkar, Hoffman, Nebeker, & Hurdle, 2007). Furthermore, hospital pharmacists have been shown to be a key member as part of the antimicrobial multidisciplinary team, e.g. in terms of guideline development, formulary management, intravenous-to-oral conversions, monitoring of drug usage, reviewing complex patients or attending ward rounds and streamlining of initial empirical antimicrobial treatment (Tonna, Stewart, West, Gould, & McCaig, 2008).

Pharmaceutical care in German hospitals is far from being established nationwide. However, in recent years German reports about clinical pharmacist services and their influence on the quality of pharmacotherapy are increasing.

Taking patients drug history at the time of hospital admission has been established in some hospitals by clinical pharmacists (Berger, 2007; Heyde, Rutsch, & Eschke, 2009): The medication presented by patients is verified (e.g. dosage,

drug name, time, and frequency of administration) and therapeutic substitutions per hospital formulary are initiated. Pharmacists prepare a list of medication and add written information due to potential interaction, side effects, administration times (e.g. once weekly), substitute drugs as per hospital formulary or order medication as needed. Berger et al. (Berger, 2007) extended their work beyond admission clinics and also attended ward rounds, initiated chart reviews after in-house transfers and wrote medication-cards for discharge. Their *pharmacists' interventions* were recorded and classified by using a hospital internal categorisation scheme. The authors listed 19 different categories/interventions (e.g. dosing errors, inappropriate potassium prescription, wrong storage of medication) only for two they formed subgroups for a more detailed prescription. The most frequent pharmacists' intervention was therapeutic substitution of drugs—which was required 6207 times in 6210 patients—followed by others (25%). Others were described as: incorrect dosing or handling (30%); incorrect prescription (27%); addition of missing drug-documentation (16%); addition of missing medication (6%); and avoidance of serious interaction (1%). This work by Berger et al. also analysed the impact of delivered *pharmaceutical care* on costs and realised over 20% cost savings on a surgical ward. Berger and Colleagues were the first using defined categories for classifying interventions made by clinical pharmacists. More reports about clinical pharmacy services in Germany followed. In the majority of these publications, projects with a particular focus have been described, e.g. dosing in patients with renal insufficiency, conversion of drugs at the inpatient-outpatient interface, administration of drugs via enteral feeding tubes or education of patients (Frey, 2009; Hartmann, Eberhardt, & Bruggmann, 2009; Heyde, et al., 2009; Krämer, 2009; Neubauer, Hug, Bertz, Strehl, & Engelhardt, 2009; Probst, 2009; Sattler, 2009; Walk, et al., 2009).

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