

# Pharmaceutical interventions by collaboration between staff pharmacists and clinical pharmacists and implementation of Joint Commission International Accreditation Standards on medication use may optimize pharmacotherapy in geriatric patients

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## Dear editor

We read with great interest the prospective study by Cortejoso et al,<sup>1</sup> which describes the characteristics of pharmaceutical interventions in two geriatric wards (orthogeriatric ward and geriatric day unit) of a general teaching hospital. We strongly agree with their finding that shows the importance of clinical pharmacist involvement in the optimization of pharmacotherapy in elderly patients. Furthermore, we especially appreciate their new and interesting findings that the clinical pharmacist was more frequently requested by physicians and nurses for information about the pharmacotherapy of the patients on the geriatric day unit, compared with the orthogeriatric ward at admission and discharge (5.7% vs 1.2% and 1.7%, respectively,  $P < 0.05$ ), and that the pharmacist asked for more confirmation of the physician orders on the geriatric day unit rather than the orthogeriatric ward (19.8% vs 1.8% and 15.7% at admission and discharge, respectively,  $P < 0.05$ ). We are from a Joint Commission International (JCI)-accredited academic medical center hospital with 3200 beds in China. Safe medication management and use are pivotal to patient safety and quality of care on which the state-of-the-art standards of the Joint Commission focus. We would like to share our perspectives in the following paragraphs.

First, the characteristics of the bed turnover of the geriatric day unit and the permanent presence of a clinical pharmacist on the geriatric day unit may be two reasons for explaining the difference in the frequency of pharmaceutical interventions between the two geriatric wards. The study of Cortejoso et al will drive administrators of other hospitals to increase the investment in human resources of clinical pharmacists in geriatric day units. However, the study of Cortejoso et al did not specify the relations between clinical pharmacists in geriatric wards and staff pharmacists in an inpatient pharmacy. Generally, staff pharmacists are responsible for an appropriateness review of physician orders. Is it necessary for the staff pharmacist to re-audit the rationality of orders after the clinical pharmacist in the geriatric day unit completes pharmaceutical care (eg, medication reconciliation, participation in drafting personalized therapeutic

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regimen, medication review, and a planning intervention at admission and discharge)? Is there any difference in the way of checking physician orders by staff pharmacists when they handle orders from the geriatric day unit with the presence of the clinical pharmacist and orders from the orthogeriatric ward without the clinical pharmacist? According to *Joint Commission International Accreditation Standards for Hospitals* (5th edition), the process to conduct an appropriateness review for an order or prescription prior to dispensing includes evaluation of the following aspects by a trained professional: 1) the appropriateness of the drug, dose, frequency, and route of administration; 2) therapeutic duplication; 3) real or potential allergies or sensitivities; 4) real or potential interactions between the medication and other coadministered medications or food; 5) variation from hospital criteria for use; 6) patient's key information (eg, pregnancy, allergy history, body weight, body surface area, and clinical laboratory test results such as hepatic and renal function, international normalized ratio, blood routine examination, and serum drug concentrations); and 7) other contraindications.<sup>2</sup> For a large hospital with several thousand beds, it seems impractical for several clinical pharmacists to question the appropriateness of physician orders for all inpatients. Therefore, the collaboration among staff pharmacists and clinical pharmacists, as well as their respective role-play, are pivotal to effective, safe, and efficient drug therapy in hospitalized patients and rational allocation of human resources in the medication management and use system.

Second, geriatric patients may suffer from multiple chronic diseases and receive more medications compared to younger patients so that they would be more susceptible to drug–drug or drug–disease interactions.<sup>3</sup> Cortejoso et al observed that clinically significant interactions account for the most frequent interventions on the geriatric day unit (21.1%) as well as the orthogeriatric ward at patients' discharge (30.4%). Additionally, omission of a medication in

the physician order accounted for 20% of the interventions performed on the orthogeriatric ward at admission and discharge. From these aspects, the study of Cortejoso et al provides good reference for international peers to implement prospective targeted pharmaceutical interventions in elderly inpatients.

Besides the abovementioned requirements on appropriateness review of physician orders, *Joint Commission International Accreditation Standards for Hospitals* (5th Edition) also requires that the hospital should establish a process to compare the patient's list of medications taken prior to admission against the initial orders.<sup>2</sup> We successfully improved the appropriateness of physician orders for oral medications in geriatric VIP patients during the journey to JCI accreditation by a pharmacist-led multidisciplinary intervention program, with the proportion of drug-related problems decreasing significantly from 13.0% (before JCI accreditation) to 3.5% (after JCI accreditation) ( $P < 0.01$ ).<sup>3</sup> Combining the valuable findings of Cortejoso et al and JCI accreditation standards on medication use, we believe that the pharmacist-led multidisciplinary team can do a lot for geriatric patients, toward the effective, safe, and sustained use of medicines.

## Disclosure

The authors report no conflicts of interest in this communication.

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## Authors' reply

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## Dear editor

We would like to thank Chen et al for their thoughtful comments on our study. We offer a few points for consideration.

The main aim of our paper was to describe the characteristics of pharmaceutical interventions in two geriatric wards (orthogeriatric ward and geriatric day unit) and to evaluate the clinical significance of the detected medication errors.

We agree with the two reasons to explain the fact that the degree of integration of the clinical pharmacist in the multi-disciplinary team was higher in the geriatric day unit in comparison with the orthogeriatric ward: a lower bed turnover and the continuous presence of the pharmacist on this unit during her complete working day. Furthermore, we presume that the different focus of interest of the physicians on surgery wards, who are more aware of postoperative issues than of optimization of pharmacotherapy, may contribute to this fact.

We developed a triple approach to optimize pharmacotherapy in older patients, which included validation of medical orders, medication reconciliation at admission, and a pre-discharge planning appointment with the patient.

Generally, clinical pharmacists on the ward in Europe work together with staff pharmacists in the inpatient

pharmacy, and their cooperation is crucial to ensure that the right drug at the right dose reaches the right patient. In this sense, clinical pharmacists are normally involved in other areas of the pharmacy department such as drug production and dispensing. This close and valuable cooperation between pharmacists and the lack of unbounded resources in our health care system explain why we do not believe in the necessity to re-audit the appropriateness of medical orders by staff pharmacists after clinical pharmacists have validated them. In this context, we totally agree with Chen et al that the collaboration between clinical and staff pharmacists is an essential element to ensure effectiveness, safety, and efficiency of pharmacotherapy in hospitalized patients.

As discussed in our study, one of our key interventions was the medication reconciliation at patient's admission, since incomplete medication histories account for a great part of prescribing errors in hospital settings, especially omission of drugs. We appreciate the results shown in the study carried out by Zhu and Zhou,<sup>1</sup> in which the authors also managed to improve the appropriateness of physician orders in geriatric patients, thanks to the implementation of Joint Commission International Accreditation Standards.

Finally, we would like to emphasize once more the need to include clinical pharmacists in health care teams to optimize the pharmacotherapy in older patients.

## Disclosure

The authors report no conflicts of interest in this communication.

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1. Zhu LL, Zhou Q. Intervention for improving the appropriateness of physician orders for oral medications in geriatric VIP patients during the journey to JCI accreditation. *Ther Clin Risk Manag*. 2013;9:273–275.

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