

# The Risk of Wrong Transfer of Medication Information is High in Elderly Patients upon Admission to Hospital

Adriana Cecchi<sup>1</sup>, Elio Carchietti<sup>1\*</sup> and Cristiana Catena<sup>2</sup>

<sup>1</sup>Department of Hospital Services Organization, Academic Hospital, Udine, Italy

<sup>2</sup>Department of Experimental Medical, Clinical Sciences Academic Hospital, Udine, Italy

\*Corresponding author: Carchietti Elio, Department of Hospital Services Organization, Academic Hospital, Udine, Italy, Tel: 329.7506356; E-mail: [carchietti.elio@aoud.sanita.fvg.it](mailto:carchietti.elio@aoud.sanita.fvg.it)

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## Abstract

In Italy, the number of elderly people, aged over 65, has continued to increase during the last few years. The use of drugs by people over 65, has reached 65% of the total countrywide consumption, indicating an increase in the last few years. The risk of medication errors is higher in patients who receive multiple pharmacological therapy. A frequent cause of medication errors is due to incomplete or imprecise communication regarding drugs information in all the cases in which elderly patients move from their homes for hospital admission.

At time of hospital admission drug histories are often incomplete and 10–67% of medication histories contain at least one error.

**Keywords:** Drug histories; Drugs reconciliation; Medication errors

## Introduction

In Italy, the number of elderly people, aged over 65, has continued to increase during the last few years. In 2013 the percentage rose from 18.7% to 20.5%. In our region, Friuli Venezia Giulia, the elderly represent approximately 25% of the population. In the city of Udine the inhabitants are approximately 100,000 with an average age of 46. The percentage of people older than 65 is about 25% of the entire population [1].

In 2013, according to the Medicines Utilization Monitoring Centre (Osmed) report by the Italian Medicines Agency (Aifa), the use of drugs by people over 65; has reached 65% of the total countrywide consumption, indicating an increase in the last few years [2]. It is well known that elderly patients suffer mostly from age-related multipathologies and require frequent hospital admittance and polypharmacological treatment.

The term “polipharmacy” indicates treatment with 5 or more drugs in the same patient. The risk of medication errors is higher in patients who receive multiple pharmacological therapy [3,4]. A frequent cause of medication errors is due to incomplete or imprecise communication regarding drugs information in all the cases in which elderly patients move from their homes for hospital admission [5]. In fact, there is a high frequency of medication errors when elderly patients are admitted to hospital. The consequences of this can be serious and cause preventable adverse reactions and errors [6,7].

Several studies have shown that the majority of medication prescription errors occur when elderly patients are admitted to hospital and current evidence indicates that more than 50% of medication errors occur during transitions of care [8]. It is a common belief that proper medication reconciliation upon hospital admission can prevent this. However, medication reconciliation requires a complete list of patients’ medicines when care is transferred from home to hospital, a process that must be carried out carefully.

In recent years, the hospital ward pharmacist has been establishing him/herself as a part of a multidisciplinary team to guarantee, in collaboration

with physicians and nurses, the safety of patients’ therapy [9]. In order to have correct medicines reconciliation it is necessary to have complete medication histories. In many cases the age and psychophysical conditions of patients and their relatives, in particular mnemonic ability, can cause amnesia. The person who brings the elderly patient to the source of care may be elderly as well and have the same problems or the caregiver is foreign, without any knowledge of the medical history of the patient or even of the local language. In the present study, we sought to examine the potential frequency of erroneous transfer of medication information between caregivers upon admission of elderly patients to hospital.

## Methods

All ethical issue observed

In Udine there is an ambulance service coordinated by the 118 Emergency Medical Service (EMS) center, where there are expert emergency nurses. Upon receiving the call, the nurses of the 118 service carry out a triage, following the protocol of the Advanced Medical Priority Dispatch System (AMPDS) and organize transportation of patients to hospital by ambulance. In order to find the index of potential errors caused by the incorrect transfer of medication information for the elderly upon admission, the hospital pharmacist, in collaboration with the 118 EMS Director, has set up a procedure for the “Assessment of risk of wrong transfer of medication information”, developed in two phases. The procedure is explained to and shared among the EMS nurses: the first phase is carried out in the 118 center by the triage nurses who identify the patient, his/her age, the pathology suspected and the level of clinical seriousness; the second phase takes place at patients’ homes and is carried out by the ambulance staff. Detailed information on the purpose of the study is provided to elderly patients in fit conditions, or their relatives or caregivers, and they consent for participation by briefly describing the list and the therapeutic indications of the drugs brought to hospital. In the second phase, when the ambulance crew arrives at the patient’s home the nurse places all drugs in a bag and takes the bag to the hospital with the patient. The patient’s medication list is compared with the list

reported during the telephone triage. An anonymous form is used for this purpose. Any medication information errors are then reported. Potential Medication Information Errors are considered:

- Patient or caregiver not prepared to collaborate
- Transfer of a medication that was not cited at telephone triage
- Transfer of an incorrect or not well-defined dose
- Transfer of a prescribed medication different from drugs, associated with the pathology, reported previously to the triage nurses (e.g.: Benzodiazepines for “Hypertension”)
- No documentation of medication lists.

The study included patients, who were 65 or older, were living on their own and were admitted to hospital in July and August 2014. The summer period was chosen because relatives are often away and substituted by foreign caregivers or people unable to provide a proper anamnesis. The errors were not assessed according to their level of seriousness.

### Data collection

From 1 July to 30 August 2014, the Udine 118 ambulance service took 2,248 patients to the hospital. One thousand four hundred of them (62.3%) were over 65: 959 of these patients (68.5%) were in fair conditions [10], that is with a patient conscious, with vital signs within normal limits and stable; 428 of them were in a serious condition with unstable vital signs; 14 of them were in a critical condition [10] with the patient unconscious. Medication lists made prior to hospitalization were requested by the 118 nurse performing the medication recognition. The consent was obtained from patients or, if that was not possible, from a close relative or a caregiver.

### Results

Only 126 out of 959 eligible patients, between 65 and 98 years old, 68 of whom were male and 58 of whom were female, took part in the study. In the other 833 cases (86.8%) the caregiver was foreign or, if Italian, was unable to give the information requested or not prepared to collaborate (86.8%).

We have highlighted the following data:

- Unable to collaborate (86.8%)
- Transfer of a medication that was not cited at telephone triage 30% (38 cases)
- Transfer of not well-defined dose 30% (38 cases)
- Transfer of a prescribed medication different from drugs, associated with the pathology, reported previously by the triage nurses (e.g.: Benzodiazepines for “Hypertension”) 7% (9 cases)
- No documentation of medication lists. 35% (44 cases)

### Discussion

At time of hospital admission, the drug history of patients is very important for therapeutic decisions and to identify potential drug adverse events. Unfortunately, drug histories are often incomplete and 10–67% of medication histories contain at least one error [11].

Incomplete medication histories may have caused at least 27% of prescribing errors [12]. The most common error is the omission of a regularly used medicine [13–15]. The prevalence of medication errors is higher among older patients who receive multiple treatments and have complicated clinical problems [16]. There is a high frequency of medication errors when the elderly patient is admitted to hospital because patients are often unable to report their drug history accurately and neither are the family members nor the caregivers who accompany them to hospital [16]. Furthermore, it is possible that they don't bring the drugs or a recent list of drugs.

Drug treatment in elderly people has increased in recent years [2]. A complete medication history should encompass all currently prescribed drugs, previous adverse drug reactions including hypersensitivity reactions, and adherence to therapy. Medication history errors, such as omitting drugs erroneously, are common [17]. The consequences may cause preventable adverse reactions and less effective treatment due to therapeutic duplication, overdose, adverse interaction, cardiovascular drugs, sedatives, antibiotics, antithrombotic drugs, and analgesics, which were the most frequently involved in medication history errors [18,19].

In our study, poor documentation of prescribed medications and lack of information about patients' medication histories, have turned out to be the main factors. Upon admission to hospital, in a large number of cases, it would have been possible to have a wrong reconciliation due to lack of documentation or erroneous therapy information. There are many reasons for taking an accurate medication history. Knowledge of the drugs that a patient is currently taking and of the responses to those drugs will help to prevent errors in medication reconciliation, to avoid duplication of drugs, drug interactions, discontinuation of long-term medications.

In these cases the advantage of the pharmacist's collaboration in the medication reconciliation can be in vain. The medication history should not only be a list of a drugs and dosages but also adherence to therapy and previous adverse effects. It's necessary to develop other strategies to reduce the risk. We particularly consider that a very useful aspect would be to make patients and their relatives more aware of the importance of medical documentation and in particular of therapy prescription.

Involvement of the pharmacist in the ward can prevent risks of wrong or insufficient communication relative to therapy information because, when patients are discharged from hospital, he/she could provide detailed therapy information to them and their relatives in order to make them more aware of its importance. In fact, the pharmacist is a suitable professional figure to deal with drug-related issues.

For this reason he/she can explain to patients and their relatives or caregivers the necessity to keep all the latest therapy documentation ready to be shown upon request.

### Conclusion

Medication errors are common when elderly patients who suffer from several diseases and use many different drugs, move from home to hospital care. Causes of medication errors may be multi-factorial; however, the poor documentation seems to be the main cause of errors. There are various strategies that can reduce medication history errors. In acute hospital admissions they can reduce errors and the risks of adverse drug reactions [9, 20–23]. However, a method that minimizes the risk of medication errors when patients are transferred from home to hospital care should be developed [24]. Education of patients and medication reconciliation conducted by a clinical pharmacist may reduce medication errors.

### Competing Interests

Authors have declared that no competing interests exist.

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