

**Prevalence, nature, severity and risk factors for prescribing errors in hospital inpatients:
Prospective study in 20 UK hospitals**

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Potential Severity Error Classification Scheme

<p>Potentially lethal error¹</p>	<p>An error is defined as potentially lethal if it could have one or more of the following consequences:</p> <ul style="list-style-type: none"> ▪ The serum level resulting from such a dose is likely to be in the severe toxicity range based on common dosage guidelines, e.g. serum theophylline concentrations greater than 30 micrograms per ml. More than 10 times the dose of chemotherapy agent ▪ The drug being administered has a high potential to cause cardiopulmonary arrest in the dose ordered. ▪ The drug being administered has a high potential to cause a life threatening adverse reaction, such as anaphylaxis, in light of the patient's medical history. ▪ The dose of a potentially life saving drug is too low for a patient having the disease being treated ▪ The dose of a drug with a very low therapeutic index is too high (ten times the normal dose)
<p>Serious error¹</p>	<p>An error is defined as serious if it could have one or more of the following results:</p> <ul style="list-style-type: none"> ▪ The route of drug administration ordered is inappropriate, with the potential of causing the patient to suffer a severe toxic reaction. ▪ The dose of the drug prescribed is too low for a patient with serious disease who is in acute distress ▪ The dose of a drug with a low therapeutic index is too high (four to ten times the normal dose) ▪ The dose of the drug would result in serum drug levels in the toxic range, e.g. theophylline levels 20-30 micrograms per mL. ▪ The drug orders could exacerbate the patient's condition, e.g. drug-drug interaction or drug-disease interaction. ▪ The name of the drug is misspelled or illegible creating a risk that the wrong drug might be dispensed including errors in decimal points or units if the error could lead to the dose being given ▪ High dosage (ten times) normal of a drug without a low therapeutic index
<p>Significant error¹</p>	<p>An error is defined as significant if it could have one or more of the following results:</p> <ul style="list-style-type: none"> ▪ The dose of the drug with low therapeutic index is too high (half – four times the normal dose) ▪ The dose of the drug is too low for a patient with the condition being treated

Minor errors adapted from Tully et al⁵, Lesar²⁻⁴. Potentially lethal errors, serious errors and significant errors adapted from Folli et al.¹

	<ul style="list-style-type: none"> ▪ The wrong laboratory studies to monitor a specific side effect of a drug are ordered e.g. CBC and reticulocyte counts are ordered to monitor gentamicin toxicity ▪ The wrong route of administration for the condition being treated is ordered e.g. the inadvertent change from IV to oral therapy for the treatment of bacterial meningitis. ▪ Errors ordering fluids are made e.g. specific additives needed for complete therapy are omitted or incompatible fluids are ordered ▪ Errors of omission whereby patient's regular medication is not prescribed either on admission, during a rewrite and on discharge
Minor error ²⁻⁵	<p>An error is defined as minor if it could have one or more of the following results:</p> <ul style="list-style-type: none"> ▪ Duplicate therapy was prescribed without potential for increased adverse effects ▪ The wrong route was ordered without potential for toxic reactions or therapeutic failure ▪ The order lacked specific drug, dose, dosage strength, frequency, route or frequency information ▪ Illegible, ambiguous or non-standard abbreviations ▪ An errant order was written that was unlikely to be carried out given the nature of the drug, dosage forms, route ordered, missing information etc <p>Examples include, simvastatin prescribed in the morning rather than at night. Bisoprolol – two puffs four times a day..</p>

Reference List

- (1) Folli HL, Poole RL, Benitz WE, Russo JC. Medication error prevention by clinical pharmacists in two children's hospitals. *Pediatrics* 1987; 79(5):718-722.
- (2) Lesar TS, Briceland LL, Delcours K, Parmalee JC, Masta-Gornic V, Pohl H. Medication prescribing errors in a teaching hospital. *JAMA* 1990; 263(17):2329-2334.
- (3) Lesar TS, Lomaestro BM, Pohl H. Medication-prescribing errors in a teaching hospital. A 9-year experience. *Archives of Internal Medicine* 1997; 157(14):1569-1576.
- (4) Lesar TS, Briceland L, Stein DS. Factors related to errors in medication prescribing. *JAMA* 1997; 277(4):312-317.
- (5) Tully MP, Parker D, Buchan I, McElduff P, Heathfield H, et al. Patient safety research programme: medication errors 2: pilot study. Report prepared for the Department of Health 2006.

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