

MEDICATION ERRORS

REPORTED TO THE POISONS INFORMATION CENTRE ERFURT

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Objective

Medication errors are often a cause of adverse or toxic effects of drugs. Effective prevention requires information about the type of common medication errors. The aim of this study was to detect typical medication errors among enquiries to the Poisons Information Centre Erfurt.

Medication Errors

Patients

1491 cases of medication errors were registered (2,6 % of all enquiries). Something more than the half of the patients are children (53 %). Infants and toddlers are the largest group (79 % of all children) (Fig. 1).

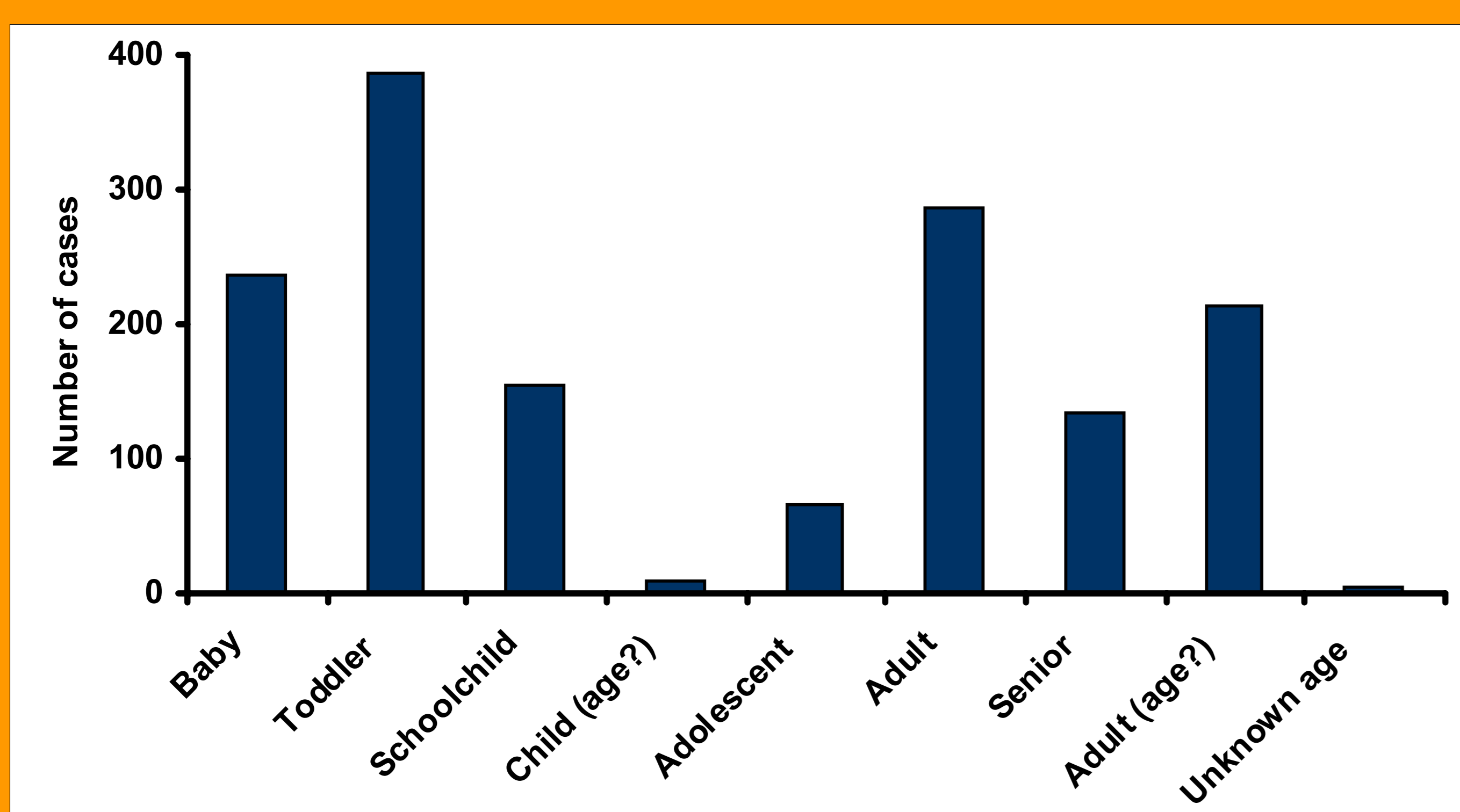


Figure 1: Age of patients affected by medication error

Persons causing medication error

Medication errors were predominantly caused by laymen (i.e. parents or an other nursing person (43 %) and patients themselves (37 %). Iatrogenic errors caused 14 % of cases (Fig. 2).

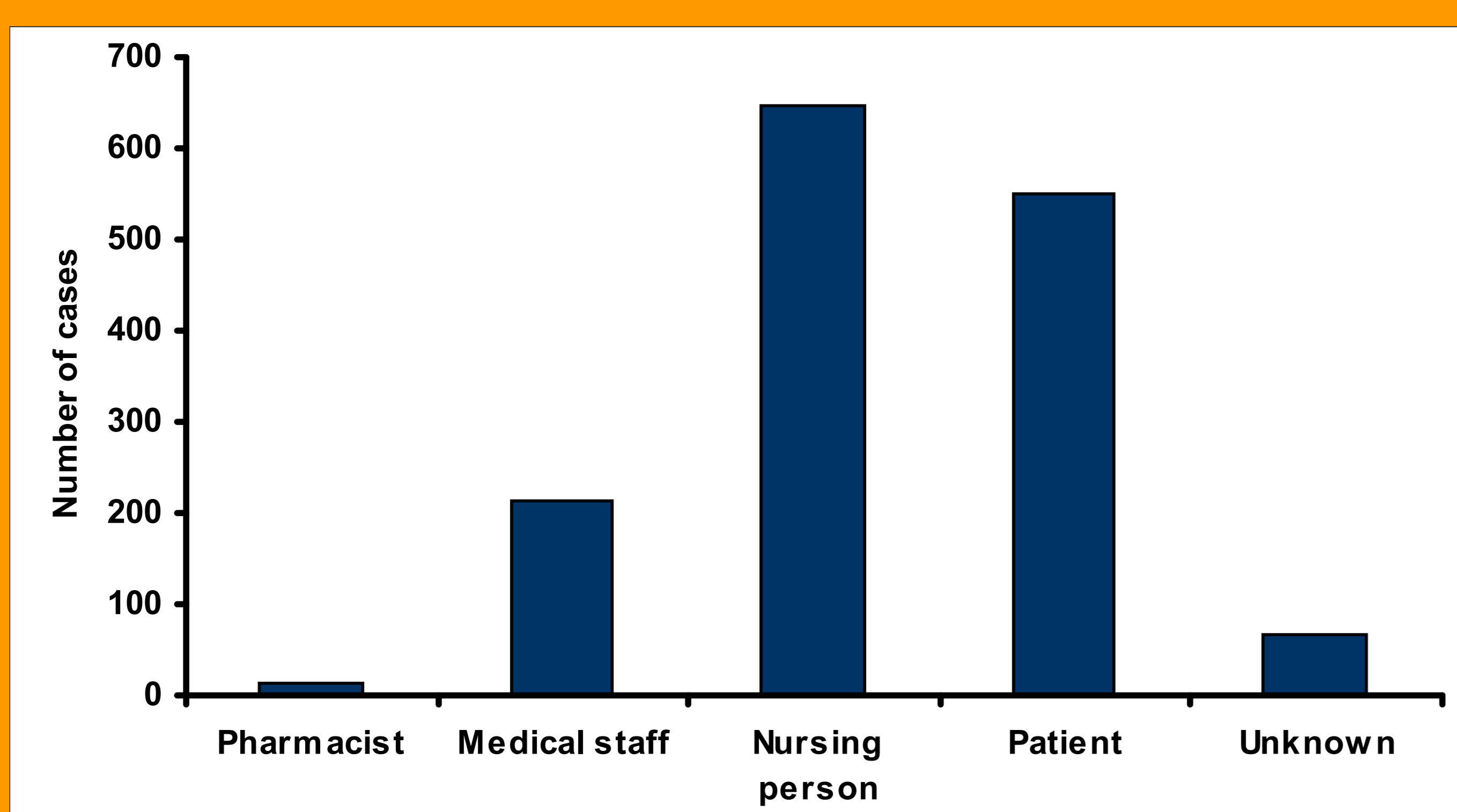


Figure 2: Persons causing medication error

Drugs involved in medication errors

Most frequent drug classes involved were cough and cold preparations (21%), analgesics (13 %), tranquilizers (10%) and antiepileptics (6 %). Essential oils (15 %) were often ingested instead of cough drops or other oral cold preparations. Paracetamol (7,5 %) was overdosed due to ignorance of dose limits or a mix up of preparations with different potency.

ATC Code	Drug class	Number of medication errors		
		total	overdose	mix-up
R05X	other cold combination preparations	250	0	240
N02B	other analgesics and antipyretics	169	93	68
N03A	antiepileptics	97	50	21
N05A	antipsychotics	91	50	19
R06A	antihistamines for systemic use	62	26	23
R05C	expectorants	53	6	40
M01A	antiinflammatory and antirheumatic products, non-steroids	43	24	15
N05C	hypnotics and sedatives	42	25	8
R05D	cough suppressants	39	17	13
N02A	opioids	36	20	12

Method

Cases regarding medication errors reported to the poison centre from 2000 to 2004 were analysed retrospectively. Data were categorised into error types, age groups, persons causing medication error, drugs involved, and estimated risk of toxicity.

Type of medication error

Mistakes of drugs due to similar packing and inattention represent the main type of medication errors (54 %). 33 % of all cases were caused by dosing inaccuracies. Other medication errors were attributed to wrong route of application, mixing up the medication of patients or disregarding of contraindications and drug interactions (Fig. 3).

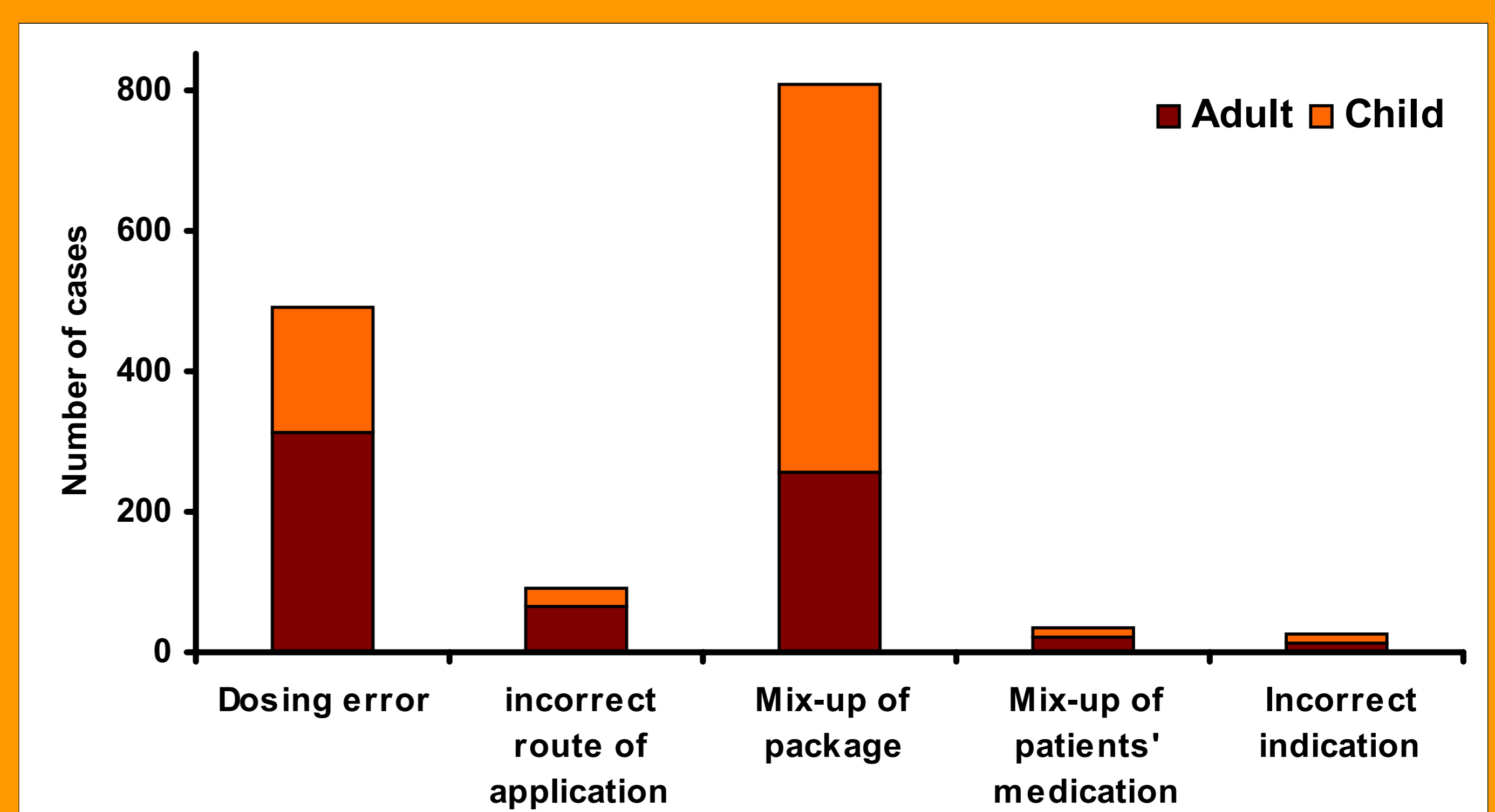


Figure 3: Most frequent types of medication error

Estimated risk of toxicity

52 % of all patients were assessed as not to be at risk, 34 % to be at risk of toxicity, whereas in 13 % the risk was unpredictable. In 27 cases (1,8 %) poisoning was estimated to be severe, 21 of them were cases of overdose. Consequently, medical treatment was recommended in 45 % of all cases (outpatient 17 %, hospital 28 %) (Fig. 4).

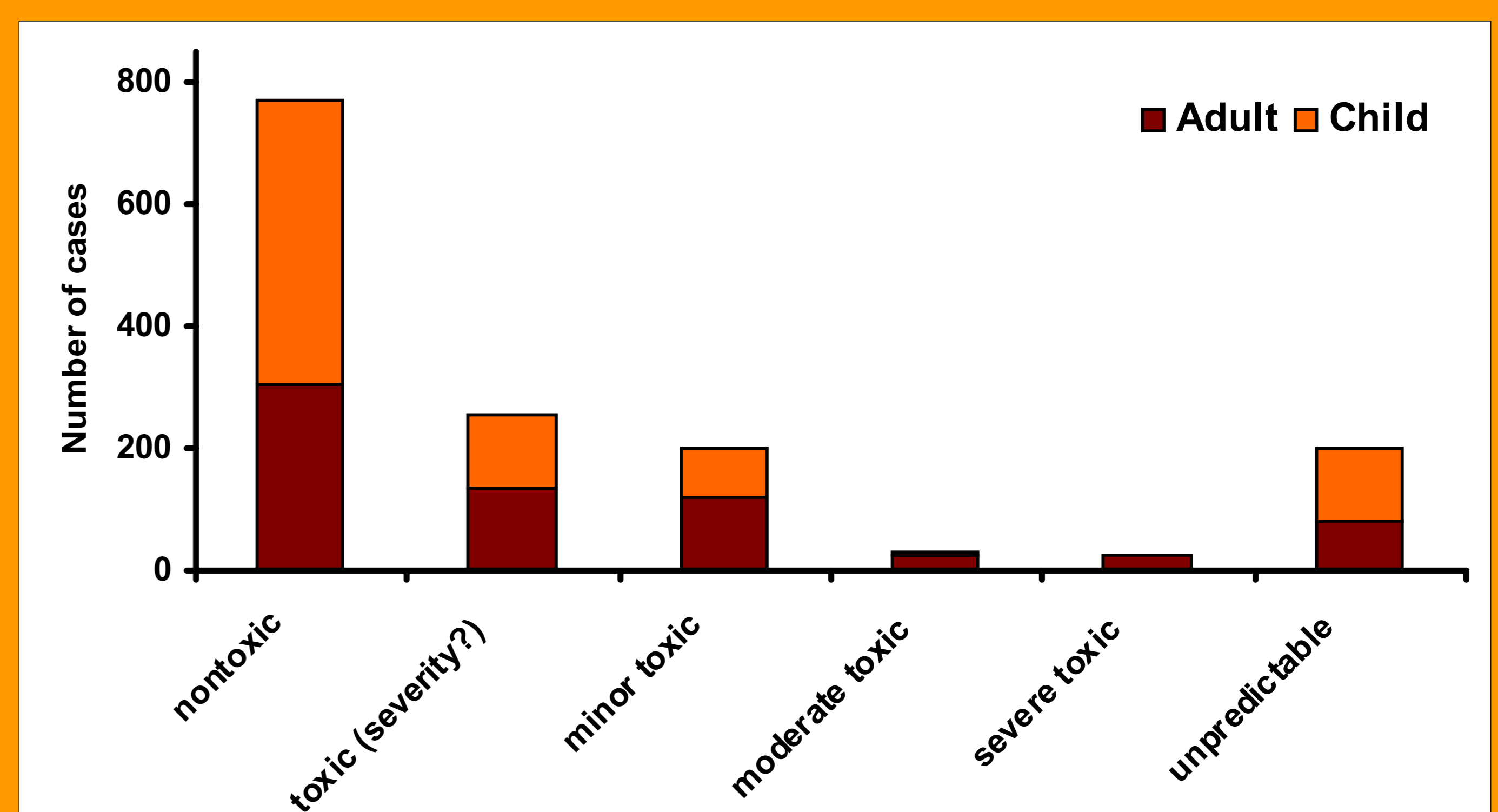


Figure 4: Estimated risk of toxicity caused by medication error

Conclusion

Analysis of medication errors demonstrates a careless handling of drugs by some patients or their nursing persons. People have to be advised strictly to use drugs (dosage and application) correctly to avoid risks of incorrect medication. However, also other measures, i.e. clear distinguishable packing of preparations with different potency or of different application forms, can contribute to prevention of medication errors.