

# Iatrogenic Medication Errors in Residential and Care Homes

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## Objective

The Poisons Information Centre Erfurt frequently receives calls from home care personnel who have accidentally mixed up the medication of the patients. The aim of this study was to show how often medication errors happened in residential and care homes for elderly people, handicapped, and children. Additionally, the potential risk of toxicity in patients should be demonstrated.

## Method

In a retrospective study, cases considering medication errors in residential and care homes were analysed by the Poisons Information Centre Erfurt from 2011 to 2015. Data were categorized into age groups, drugs involved, need for treatment, and estimated risk of toxicity.

## Medication Errors

### Case Series

In total, 324 cases of medication errors in residential and care homes were reported (0.4 % of all exposures). Over five years, enquiries from residential and care homes have increased by 65.3 % from 49 per year (2011) to 81 (2015), corresponding with an increase from 0.34 % to 0.48 % of all exposures reported to the Poisons Information Centre Erfurt.

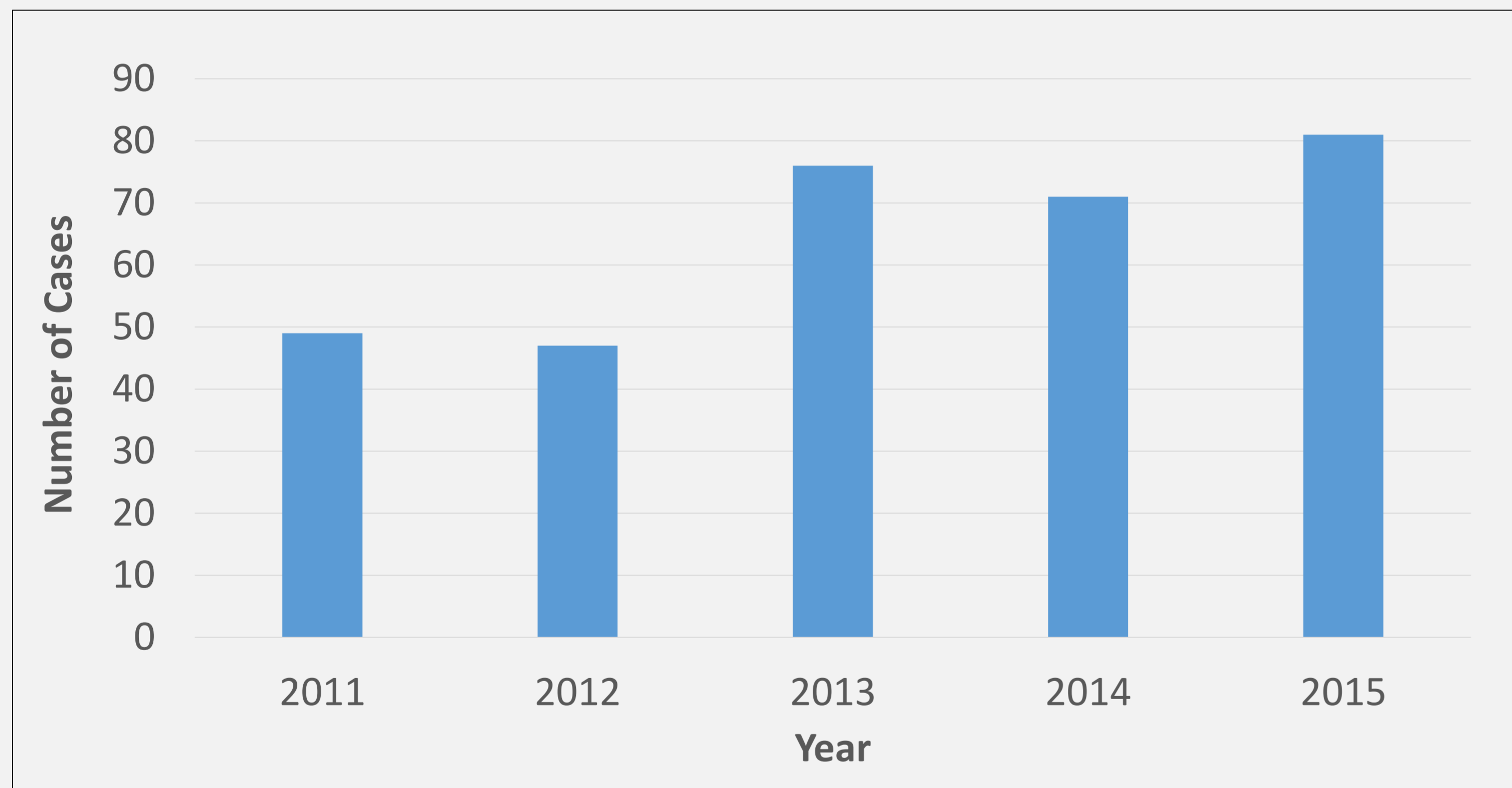


Figure 1: Number of cases of medication errors 2011 - 2015

### Estimated Risk of Toxicity

A little more than half of the patients were assessed to be at minor risk of toxicity (56.2 %), 4.6 % to be at moderate to severe risk of toxicity, and in 22.8 % the risk was unpredictable, whereas in just 14.2 % of the cases no adverse effects were expected. Consequently, medical treatment was recommended in 82.1 % of all cases (outpatient 58,5 %, hospital 23,2 %).

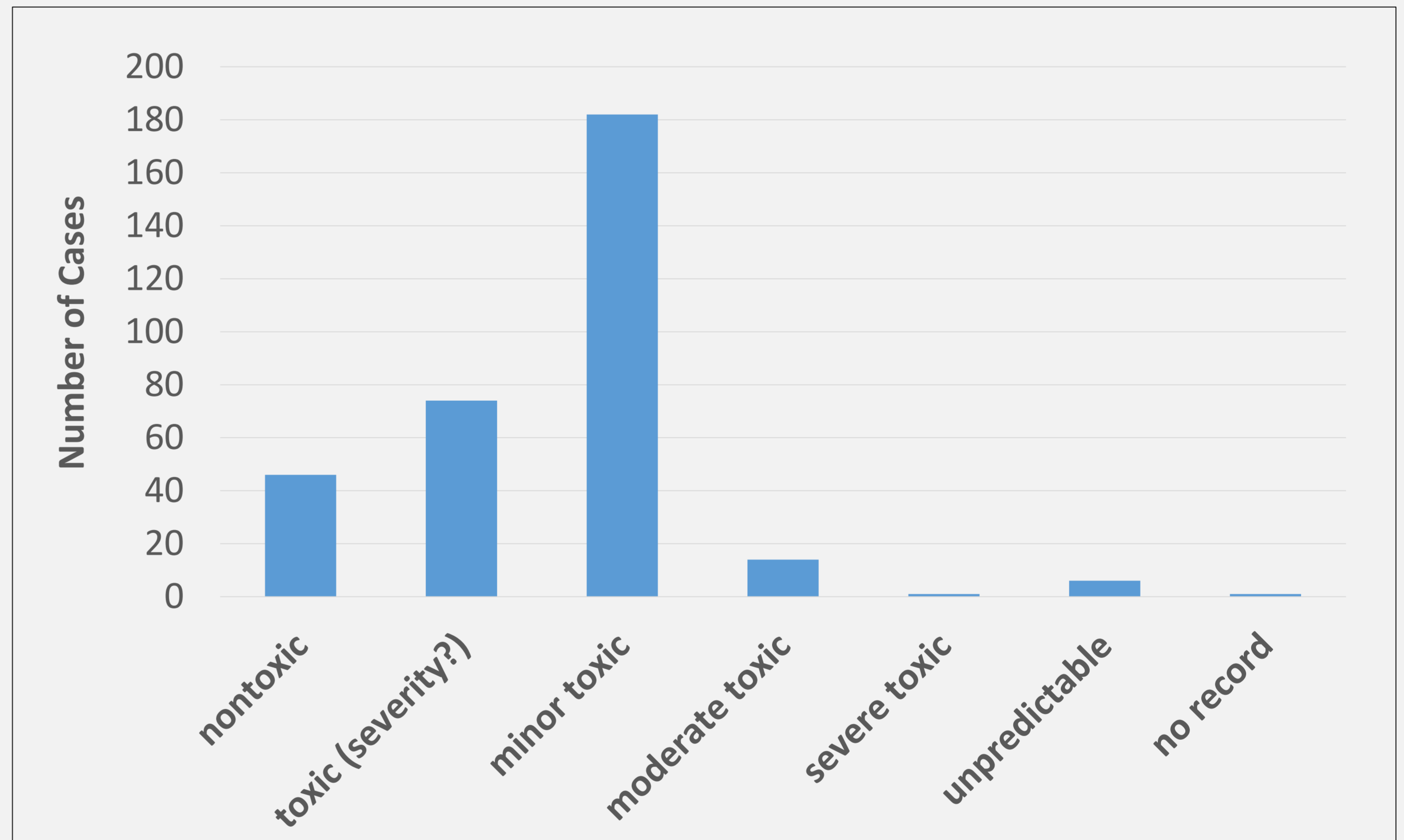


Figure 2: Estimated risk of toxicity caused by medication error

### Drugs Involved in the Medication Errors

In all cases, 1061 noxae were registered. Most frequent drug classes involved were antipsychotics (26 %), antiepileptics (23.8 %), and antidepressants (5.1 %). The most common substances are shown in Table 1.

Table 1: Most common substances involved in medication errors 2011 - 2015

Drugs	Frequency
Valproic Acid	62 (5,8 %)
Carbamazepine	49 (4,6 %)
Risperidone	49 (4,6 %)
Pipamperone	39 (3,6 %)
Lamotrigine	31 (2,9 %)
Levomepromazine	31 (2,9 %)
Levetiracetam	28 (2,6 %)
Quetiapine	26 (2,5 %)
Pantoprazole	24 (2,3 %)
Levothyroxine	23 (2,2 %)

### Conclusion

This analysis shows a constant increase of calls from residential and care homes for elderly people, handicapped, and children. Patients may develop symptoms due to high therapeutic doses of drugs whose dose normally has to be increased gradually, such as most psychotropic drugs. The study demonstrates a need for effective measures to avoid medication errors, and consequently hospitalisation. Therefore, nursing personnel and especially the non-medical personnel in these institutions should be strictly instructed in the handling and effect of drugs.