Dosing errors can cause significant harm in paediatric healthcare settings.

Our objective was to investigate the effects of paediatric dose range checking (DRC) clinical decision support (CDS) software on overdosing-related outcomes.

A before-after study and a semi-structured survey of prescribers was conducted across inpatient wards (excluding intensive care) in a regional children’s hospital. DRC CDS software linked to a paediatric drug formulary was integrated into an existing electronic prescribing system.

The main outcome measures were: the proportion of prescriptions with overdosing errors; overdosing-related clinical incidents; severity of clinical incidents; and acceptability of the intervention.

The prescription overdosing error rate did not change significantly following the introduction of DRC CDS software: in the pre-intervention period 12/847 (1.4%) prescriptions resulted in prescription errors and in the post-intervention period there were 9/684 (1.3%) prescription overdosing errors (n=21, Pearson $\chi^2$ value=0.028, p=0.868).

However, there was a significant trend towards a reduction in the severity of harm associated with reported overdosing incidents (n=60, Mann-Whitney U value=301.0, $p=0.012$).

Prescribers reported that the intervention was beneficial and they were also able to identify factors that may have contributed to the persistence of overdosing errors.

DRC CDS software did not reduce the incidence of prescription overdosing errors in a paediatric hospital setting but the level of harm associated with the overdosing errors may have been reduced. Use of the software seemed to be safe and it was perceived to be beneficial by prescribers.

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### Results

751 prescriptions of 296 patients in 2009 and 1438 prescriptions of 786 patients in 2019 were examined and classified according to their licensing status. Relative frequency of off-label prescriptions were calculated, reasons for off-label prescribing analysed and logistic regression performed to determine influencing factors.

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Off-label use is still inevitable for paediatric drug treatment. The aim of this study was to analyse the licensing status of drug prescriptions in German paediatric (specialised) outpatient clinics and to determine changes over a 10-year time course.

Methods

Cross-sectional, retrospective, monocentric studies were conducted in 2009 and 2019 to assess drug prescriptions regarding their licensing status in 10 (one general and nine specialised) outpatient clinics in Germany. Prevalence and relative frequency of off-label prescriptions were calculated, reasons for off-label prescribing analysed and logistic regression performed to determine influencing factors.

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