

Exploring the impact of a pharmacist-led feedback intervention on insulin prescribing error frequency

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Background

Insulin is a high risk drug and a common source of serious medication errors.¹

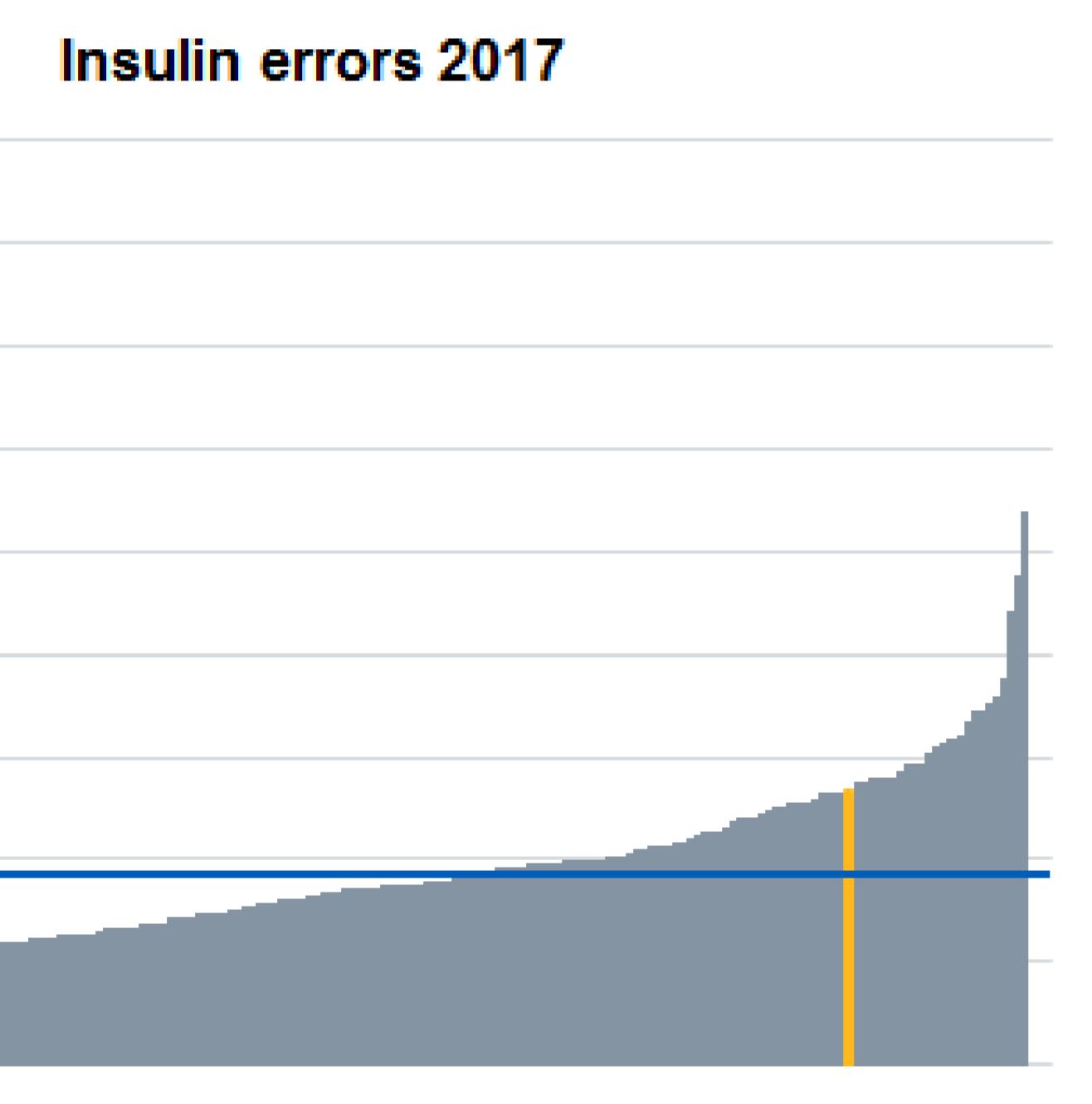
Insulin prescribing errors are prevalent locally (figure 1) with interventions to improve insulin prescribing outcomes needed.

Doctors have reported a lack of feedback previously³ with recent national guidance advocating the need for more feedback for doctors.⁴

Feedback has been reported to improve prescribing outcomes elsewhere^{5,6} with potential for similar effects on insulin prescribing.

However, little is known of the impact of feedback on insulin prescribing and exploration of this subject will contribute to the limited research in this area.

Figure 1: National Diabetes Inpatient Audit (NaDIA) 2017 Insulin errors (prescription and glucose management) at STHK



Aims

The aim of this research was to explore the impact of pharmacist-led feedback on insulin prescribing.

Errors were defined using the NaDIA definition of insulin prescription and insulin management errors plus device.

Design & Methodology

Methods:

Pharmacists were trained in data collection and facilitation of constructive feedback.

Pharmacists audited insulin prescribing continuously for a four-month period on two wards (control and intervention).

On the intervention ward only; data were analysed at the end of each month and feedback provided both individually (figure 2) (verbally and in writing) and via a group feedback session (figure 3).

Data analysis:

Data were analysed using descriptive statistic. Once data collection had been completed, statistical analyses were performed using statistical software package SPSS.

*NHS research approval was obtained (IRAS248203).

Figure 2: Image of individual feedback session



Figure 3: Image of group feedback session



Results

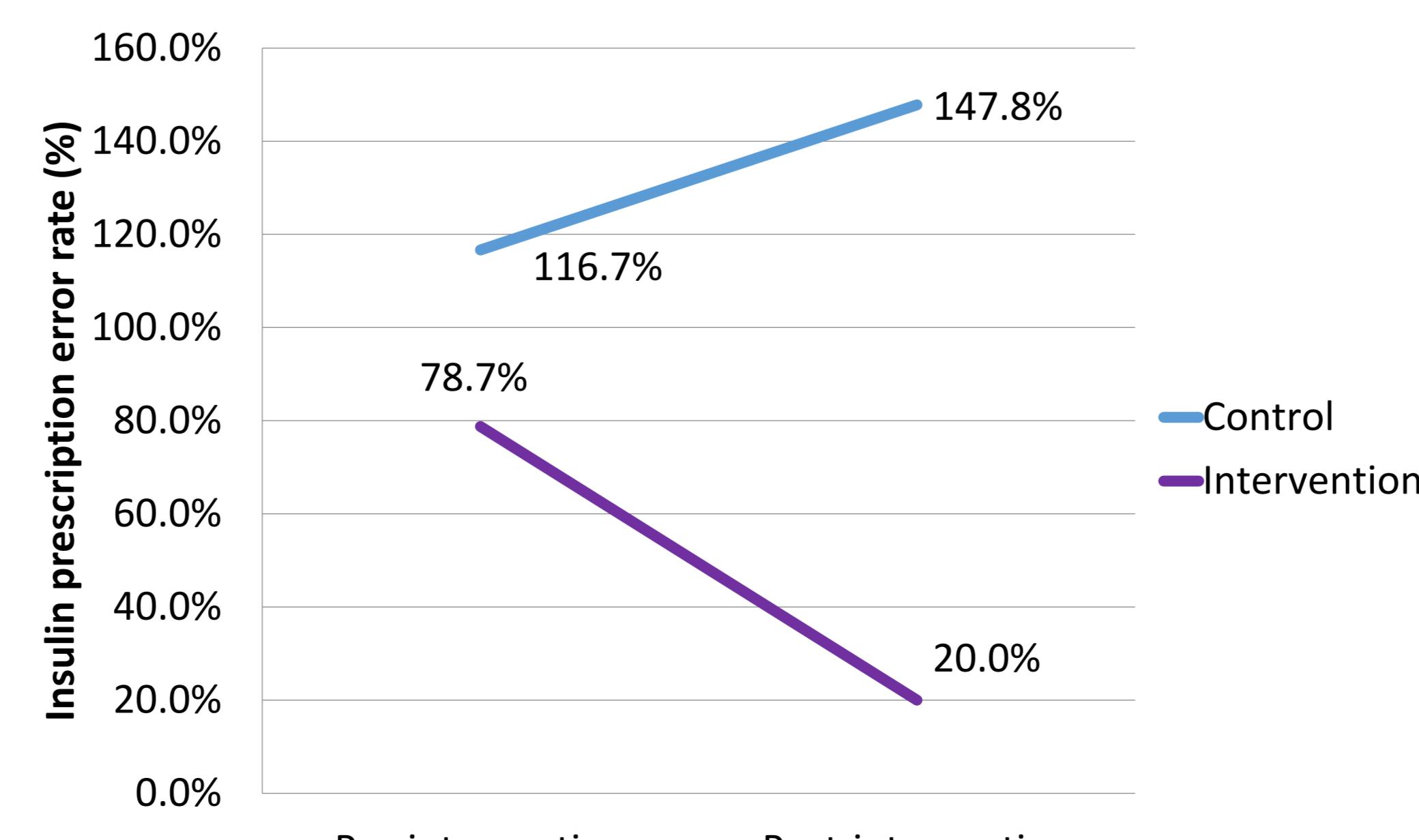
Prescribing data was collected on a total of 156 insulin prescriptions. Error frequencies were similar at baseline ($p=0.213$) between control (42 errors / 36 prescriptions) and intervention groups (37 errors / 47 prescriptions).

Post-intervention, there was a significant reduction ($p<0.05$) in error frequency (10 errors / 50 prescriptions) in the intervention group with no significant difference in the control group (34 errors / 23 prescriptions), an overall improvement in change in insulin prescription errors of 89.7% between groups.

Table 1: Pre- and post-intervention error rates in the intervention and control groups

Group	Pre-items/errors	Post-items/errors	Pre-error rate (%)	Post-error rate (%)	Difference (%)	χ^2 and p-value
Control	36 / 42	23 / 34	116.7 %	147.8 %	89.7%	$\chi^2(1) =$, p<0.05
Intervention	47 / 37	50 / 10	78.7 %	20.0 %		

Figure 4: Graph showing insulin prescription error rate pre and post feedback intervention on control ward vs intervention ward

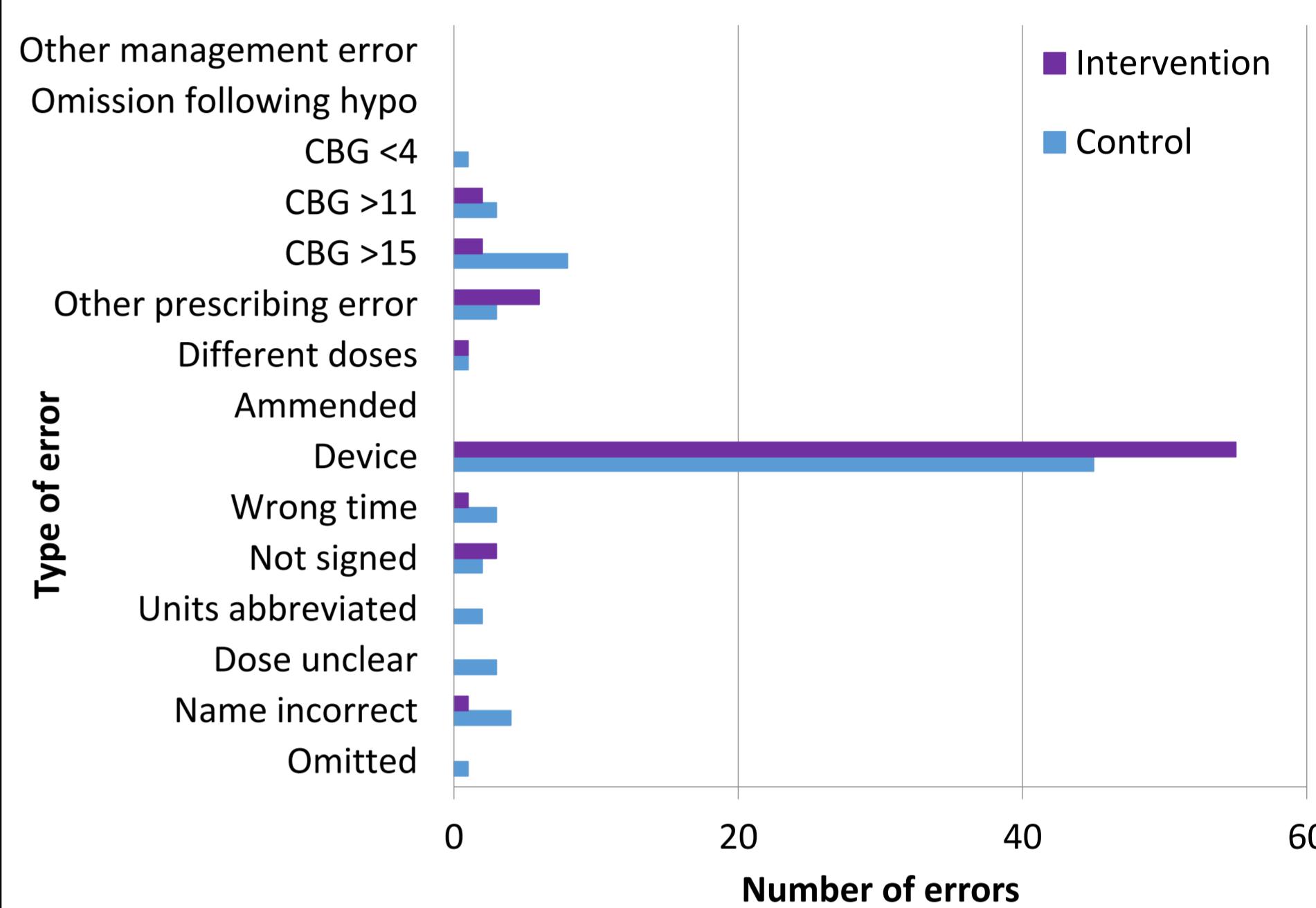


Results

A total of 147 errors were recorded. Most errors were technical in nature (89.12%, n=131) rather than management related (10.88%, n=16).

The majority of errors were regarding the device (68.03%, n=100); either this was not specified or was incorrect (figure 5)

Figure 5: Bar chart illustrating error type for control and intervention groups



Discussion

Pharmacist-led feedback has the potential to improve insulin prescribing outcomes, consistent with work done elsewhere^{5,6}. Whilst the majority of errors reported were technical, there are still implications for optimising patient safety and inefficient work systems.

It could be anticipated that electronic prescribing systems could eliminate most of these technical errors, with further work necessary to explore this intervention.

Whilst provision of structured feedback has demonstrated potential for optimisation of insulin prescribing in this study, little is known of the impact on prescriber behaviour and further qualitative work is needed to explore this theme.

Conclusion

Pharmacist-led feedback has the potential to positively influence insulin prescribing in hospital settings. Whilst this intervention shows promise for wider application, further research is required to determine feasibility and transferability and what impact feedback has on insulin prescribing behaviour.

References

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