



INCIDENT REPORTS VERSUS DIRECT OBSERVATION TO IDENTIFY MEDICATION ERRORS AND RISK FACTORS IN HOSPITALISED NEWBORNS

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Background

Medication errors (MEs) are frequent in hospitals, and newborns are particularly exposed. Identification and understanding the causes and risk factors associated with MEs will help to improve the effectiveness of medication.

Objectives

1. To compare the rate of MEs highlighted through voluntary incident reports and direct observation
2. To identify risk factors that contributed to the occurrence of MEs, in order to implement interventions to reduce their occurrence and improve effectiveness of medication

Methods

- Setting: 12-bed neonatal intensive care unit (NICU)
- All MEs reported by caregivers from June to September 2010 and August to November 2012 in our incident reporting system were analysed and compared with MEs detected by direct observation by a clinical pharmacist (CP).
- Statistics: Poisson regressions were performed to identify risk factors for MEs.

Results

- 164 patients were included in the study
- 383 MEs were identified by direct observation by the CP and 2 MEs were declared by caregivers

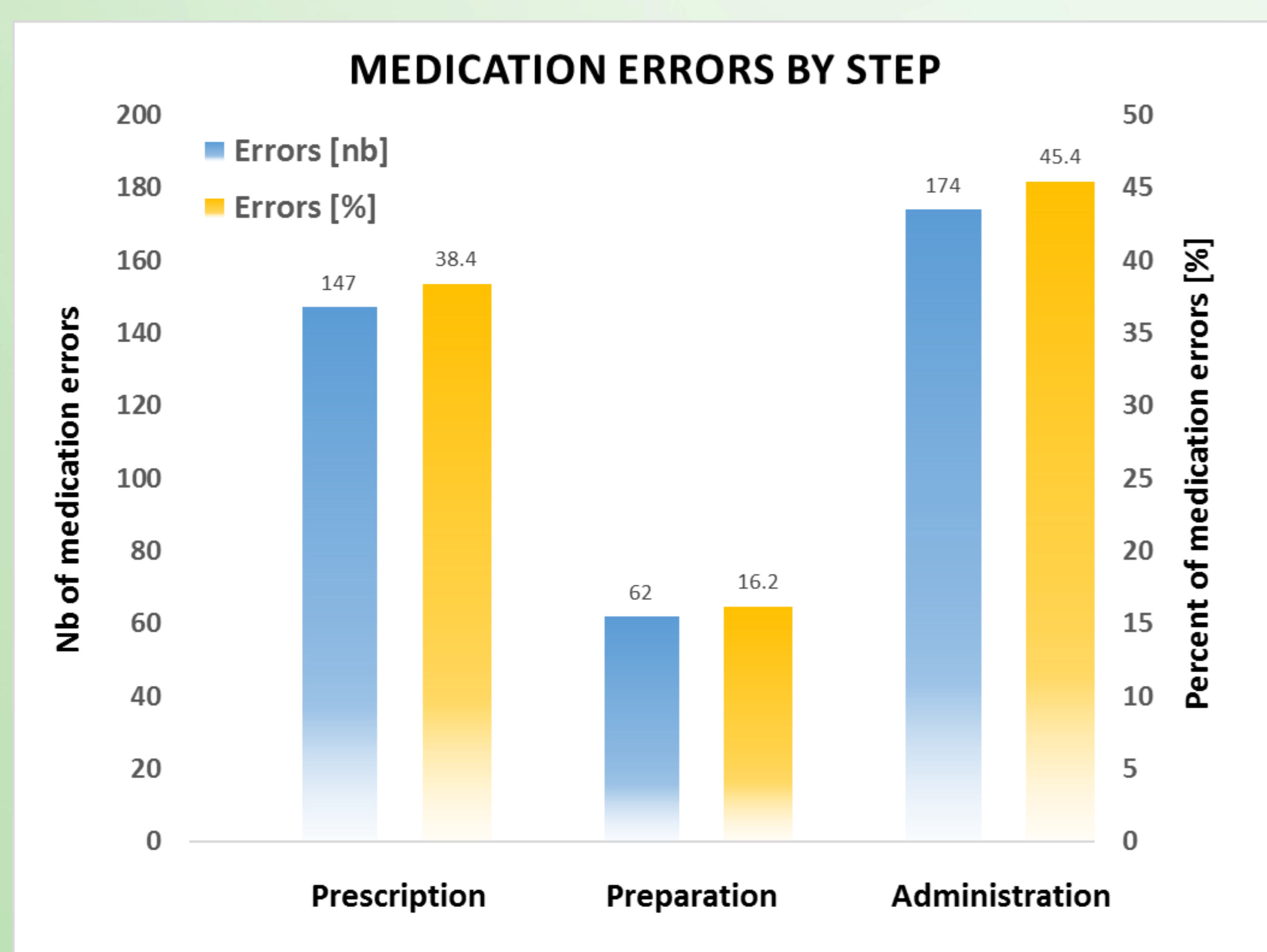


Figure 1: Incidence of MEs at prescription, preparation and administration steps

Conclusions

Caregivers underreported the true rate of MEs in our NICU.

The risk of MEs is increased in newborns <32 weeks and increases with the number of drugs prescribed to each patient.

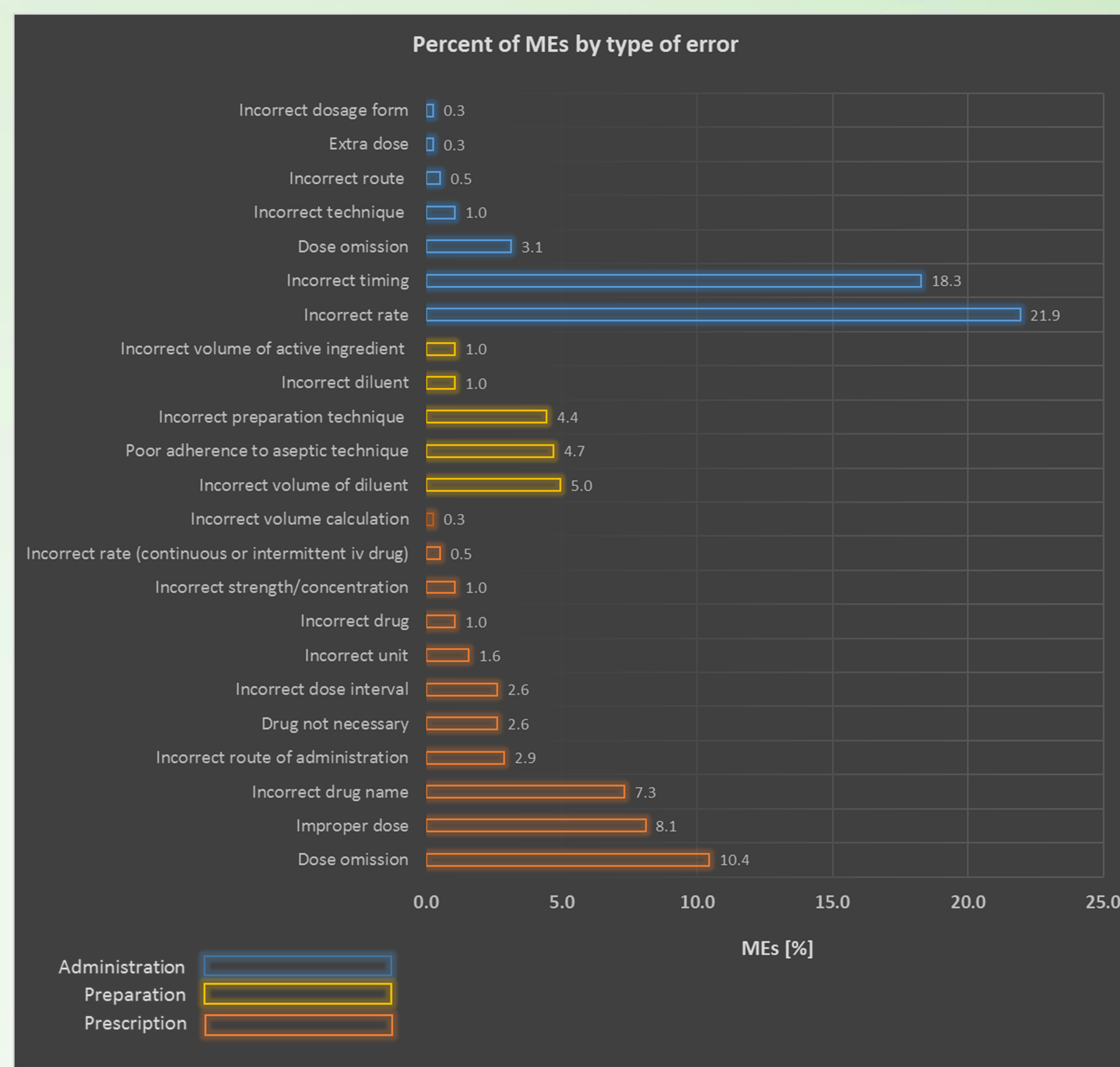


Figure 2: Type of MEs observed at prescription, preparation and administration steps

Response variable	Explicative variable	Values	Incidence rate ratio	P-value
Total medication errors	Birth weight	< 1000 g	0.65	0.11
		1000-1499 g	0.67	0.12
		1500-2499 g	0.98	0.90
	Gestational age	< 32 wk	1.61	0.04
		32-37 wk	1.06	0.76
	Severity of the disease	1B (nurse resources: 1 nurse/2 patients)	1.21	0.30
		2 (nurse resources: 1 nurse/2-3 patients)	1.45	0.13
	Mode of ventilation	Continuous positive airway pressure	1.32	0.07
		Mechanical	1.34	0.24
	Number of prescription		1.19	<0.01
	Year	2012	0.96	0.71

Table 1: Impact of different explicative variables in the occurrence of MEs