

Medication Administration Safety in Medical and Surgical Units of the Gauteng Province

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Background

Medication administration errors represent one of the major concerns in patient safety (Speroni *et al.*, 2013:1538; Kim & Bates, 2013:590).

Research on medication administration error and safety have mostly been done in developed countries which reveal an average adverse event rate of about 10% (Bates, 2010:174; Institute of Medicine, 2007:110).

In the UK, medication errors account for approximately 20% of deaths due to adverse events in hospitals (Leufer & Cleary-Holdforth, 2013:1874).

The Australian Council for Safety and Quality in Healthcare (2002:1) reports 22% of medication errors to have moderate or significant consequences, whilst a further 37% had minor consequences.

The design of many previous studies are flawed because it depended on individuals reporting on their own mistakes, which they are often unaware of (Kim & Bates, 2013:591).

Less data is available from nations with developing economies, though incidence of error in these settings tends to be higher (Bates, 2010:174).

In South Africa no current statistics are available regarding incidence of medication administration errors, though 105 of 629 professional nurse misconduct cases between 2003 and 2008 were related to medication administration (South African Nursing Council [SANC], 2013:1).

Aim

To determine the **incidence** and **types** of **medication administration errors** and medication-administration-error-related **deviations from safe practice** in medical and surgical units of public hospitals in the Gauteng Province





Method

- Sample
 - Public hospitals
 - Medical and surgical care



16 Units

8 Medical
8 Surgical



315 Observations

156 Parenteral
159 Enteral



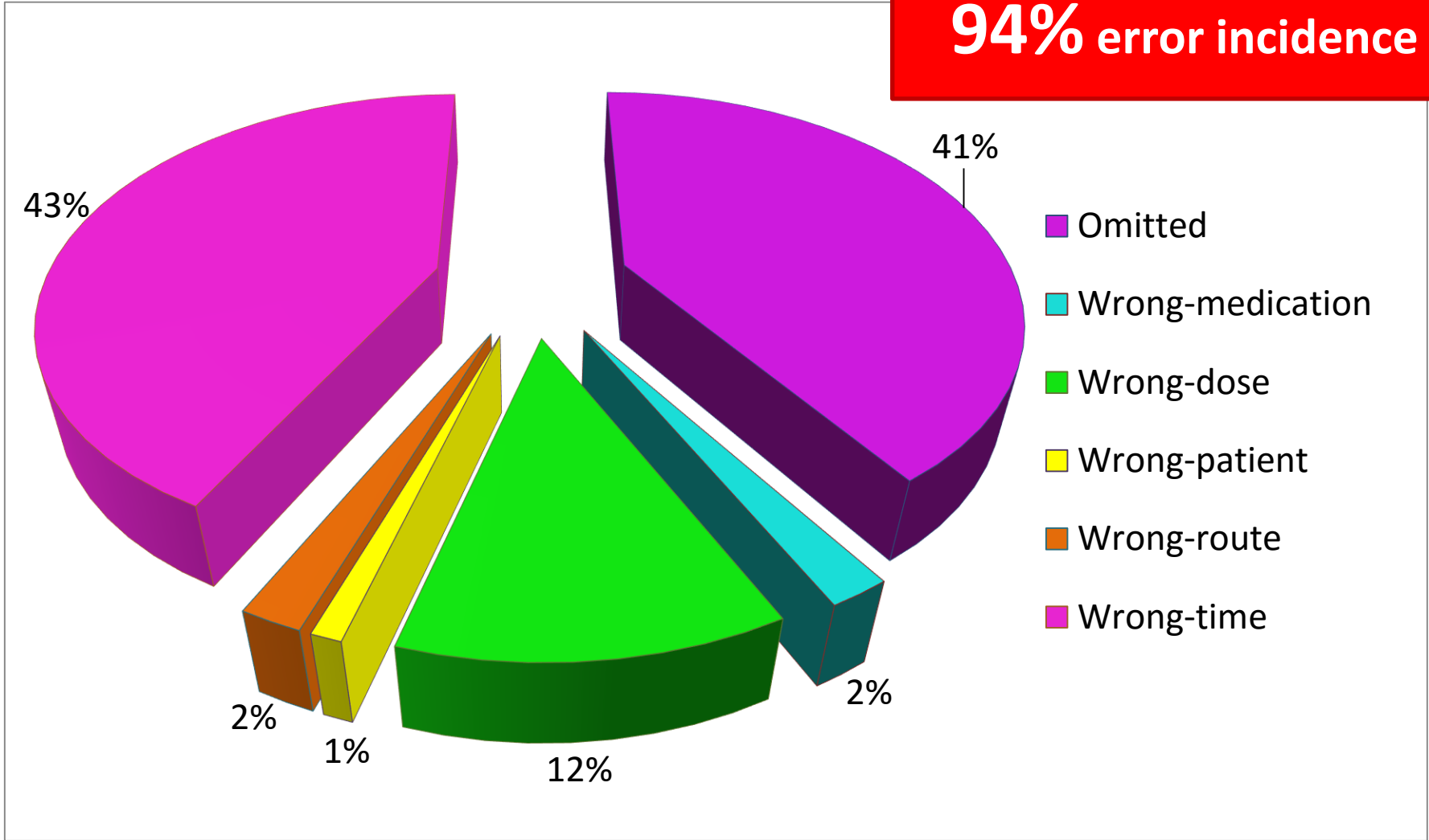
Method continued...

- Data collection
 - Direct observation
- Data analysis
 - Frequencies
 - P values (t-tests)
 - Effect sizes (Cramer's V and correlations)
 - Odds ratios

Did an error or deviation from safe practice occur?		YES	NC
Prescription	Omission		
	Label not read: Name of medication		
	Prescription not read: Name of medication		
	Wrong-medication error		
Medication	Medications prepared and administered by different administrators		
	Medication not labelled immediately		
	Label not read: Dose		
	Prescription not read: Dose		
Patient	Prescriptions of syringe not read at eye level		
	Markings of syringe not read at eye level		
	Wrong-dose error		
	Wristband not read		
Patient	Patient's name not asked		
	Patient name not read on prescription		
	Wrong-patient error		
	Prescription not read: Route		
Route	Route is not applicable		
	Wrong-route error		
	Wrong-time error		
	Medication not prepared directly before administration		
Light Time	Hands not disinfected		
	Hands disinfected for less than 15 seconds		
	All areas of hands were not washed		
	IV bottles, bags and IV-sets were not disinfected		
Sterility	Sterility of needles and IV-sets were not maintained		
	Did not disinfect the injection site		
	Sterility of needles and IV-sets were not maintained		
	Administering nurse did not record		
Recording	Actual time not recorded		
	Recorded before administration was completed		
	Number of medications prescribed:		
	Blank:		
Interruptions:			
Notes:			

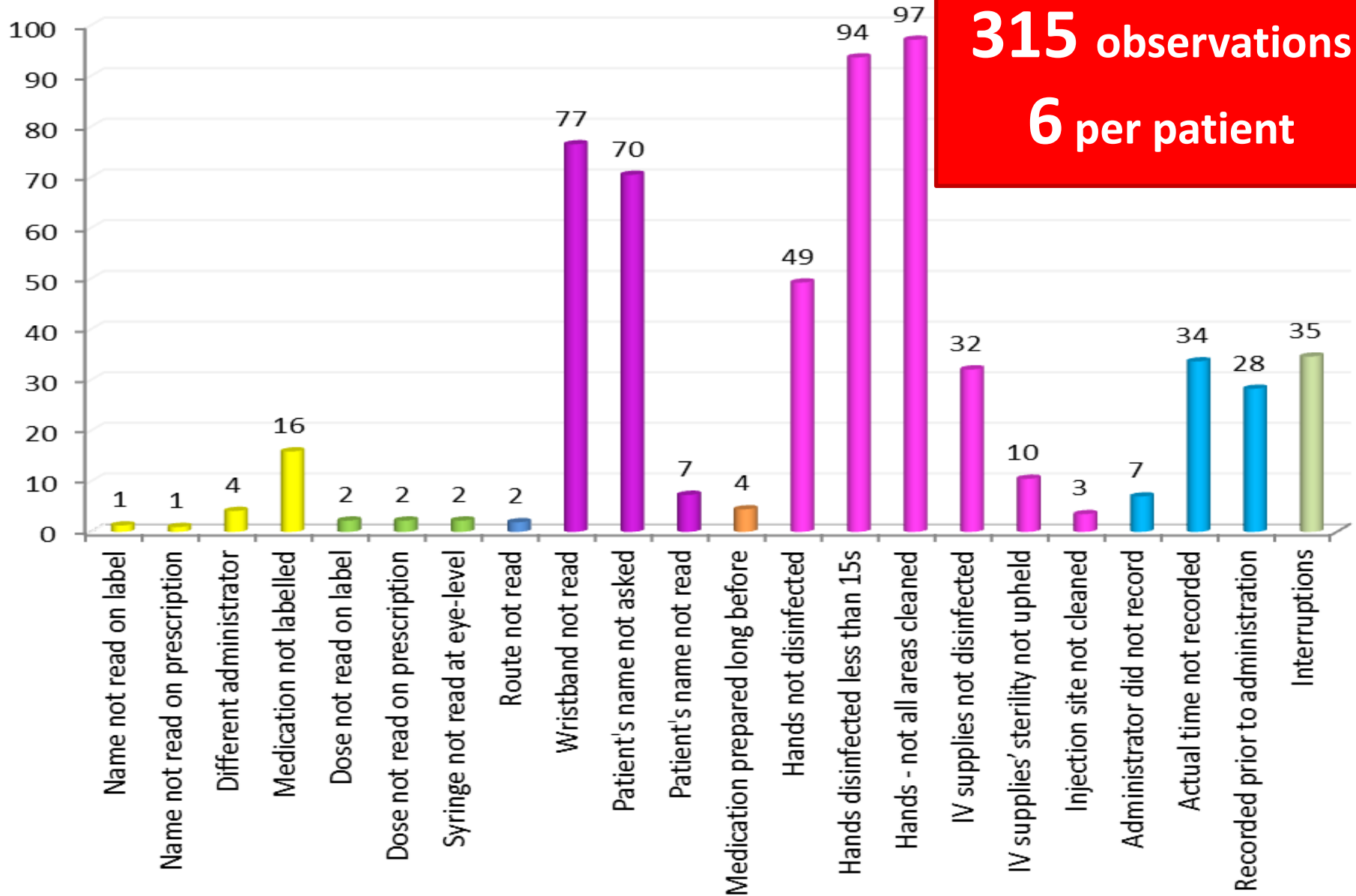
Results

296 errors
315 observations
94% error incidence



Results continued...

1824 deviations
315 observations
6 per patient



Results continued...



A statistically significant correlation with medium effect was determined between interruptions and wrong dose errors (OR = -2.56; $p < 0.05$).



Patient acuity was practically and statistically correlated with wrong route errors (OR = 10.55; $p < 0.05$).

Conclusions

- Medication administration errors are prevalent in public hospitals of South Africa.
- Interruptions lower the risk of wrong-dose errors.
- Patient acuity exacerbates the risk of wrong-route errors.
- Patient identification and asepsis protocols are not followed.



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