

A 10-year retrospective study of the medication incidents and accidents associated with drug dose documentation in a teaching hospital

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INTRODUCTION

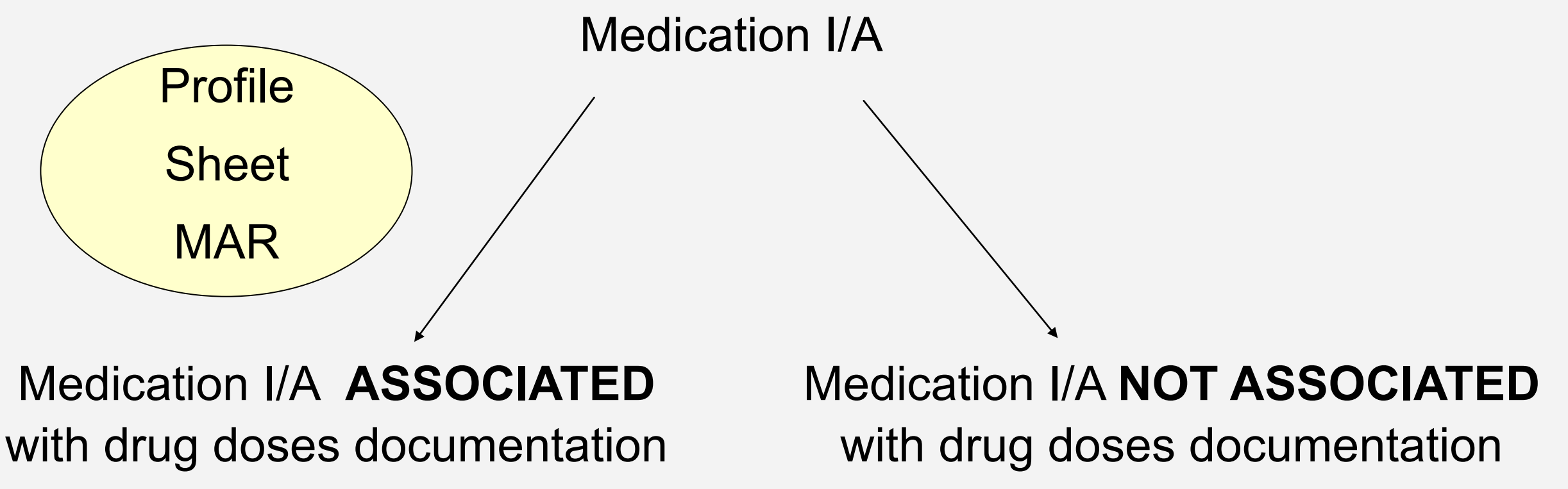
- There is a need for a better documentation of drug doses in patient records, to obtain a:
 - Higher traceability of every steps of drug dose administration
 - A higher traceability of healthcare professionals involved in the process
- Printed medication administration record (MAR) from pharmacy information system is usually used to fulfill these requirements.

OBJECTIVES

To describe a 10-year period of the medication incidents and accidents (I/A) associated with drug dose documentation in a teaching hospital.

METHODS

- Retrospective study conducted in a 500-bed mother-child teaching hospital
- All medication I/A were extracted from GesRisk® from April 1st, 2004 until March 31st, 2015
- Variables collected were : dates, patient care areas, descriptions, types, consequences, corrective measures, severity indexes
- Medication I/A associated with drug dose documentation were identified if the description entered in the database included the following words: [profile, sheet or MAR]



- A random sample of medication I/A were audited to confirm their classification
- Number, proportion and confidence intervals for medication I/A associated with drug dose documentation were calculated:
 - Per patient care areas
 - Type of events
 - Severity of events

RESULTS

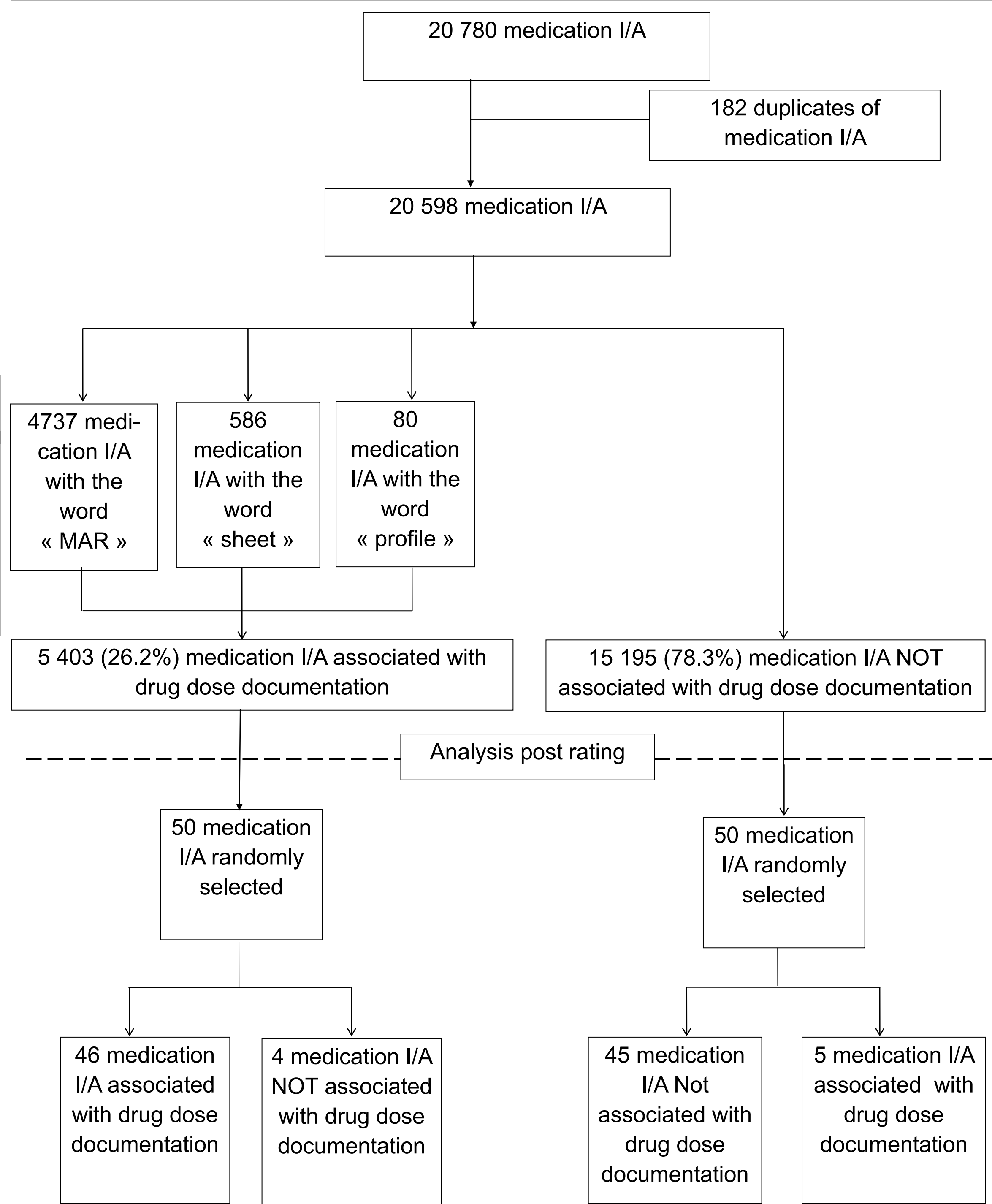


Figure 1. Flow chart of medication incident/accident (I/A)
 Legend: I/A: Incidents/ Accidents

- 20,598 medication I/A were identified
- ~ a quarter were considered associated with drug dose documentation (n=5403, 26.2%)
- Among medication I/A associated with drug dose documentation: 74% (3996/5403) were accidents
- Respectively 5/50 and 4/50 of randomly selected medication I/A after analysis were misclassified but severity score was not affected

CONCLUSION

- Twenty-six percent of medication I/A were associated with drug dose documentation
- This study demonstrates the importance of the risks associated with manual documentation of drug doses by nurses
- A better understanding of the I/A associated with drugs dose documentation can be useful in a patient safety program to improve current and new practices

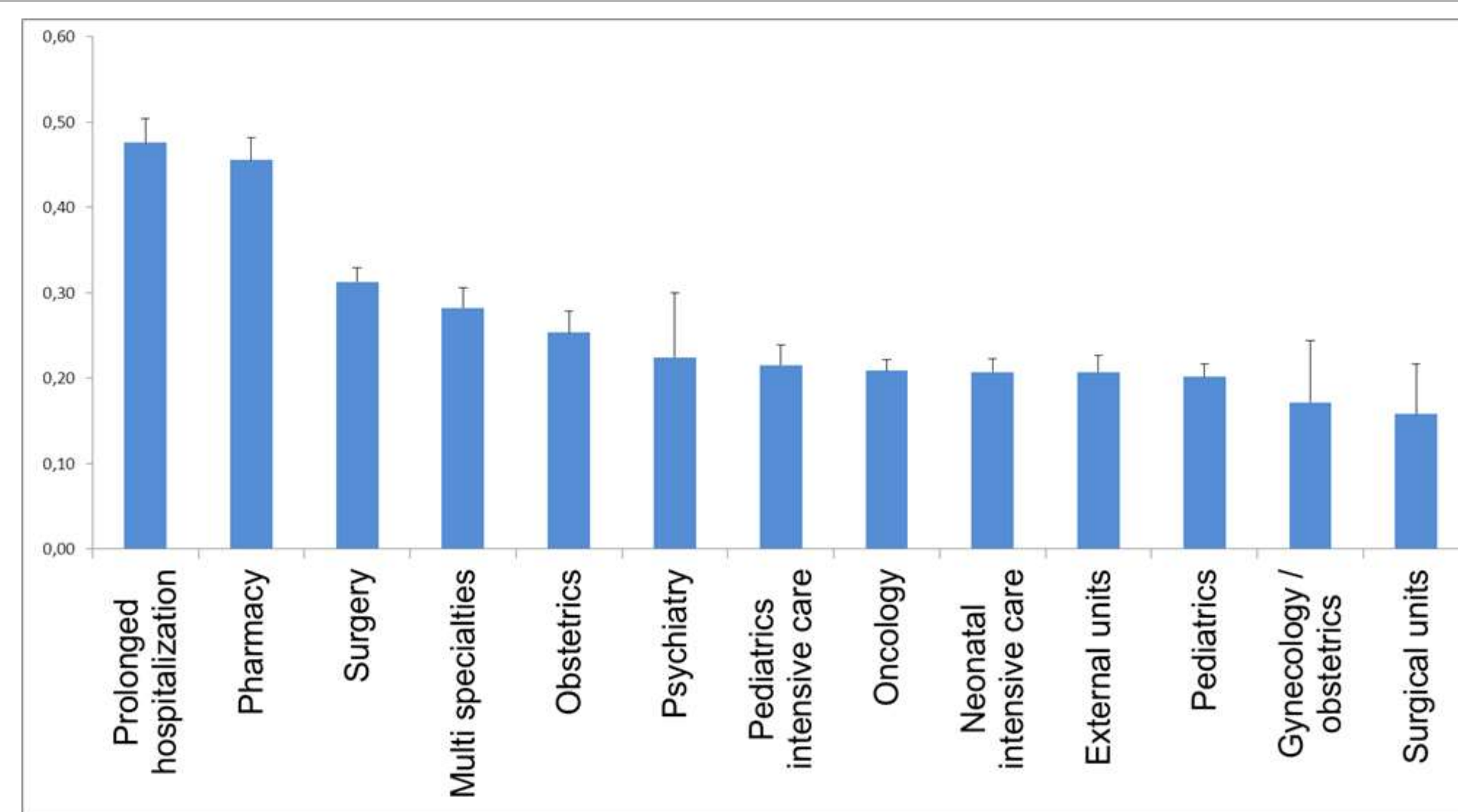


Figure 2. Proportion of I/A associated with drug dose documentation per patient care areas
 Legend: I/A: Incidents/ Accidents

- Proportion of medication I/A associated with drug dose documentation was found to be more important for the following :
 - Prolonged hospitalization: 0.48 [0.45- 0.50]
 - Pharmacy Department: 0.46 [0.43- 0.48]
 - Surgery: 0.31 [0.33- 0.30]
 - Multispecialties: 0.28 [0.26 -0.31]
 - Obstetrics: 0.25 [0.23- 0.28]

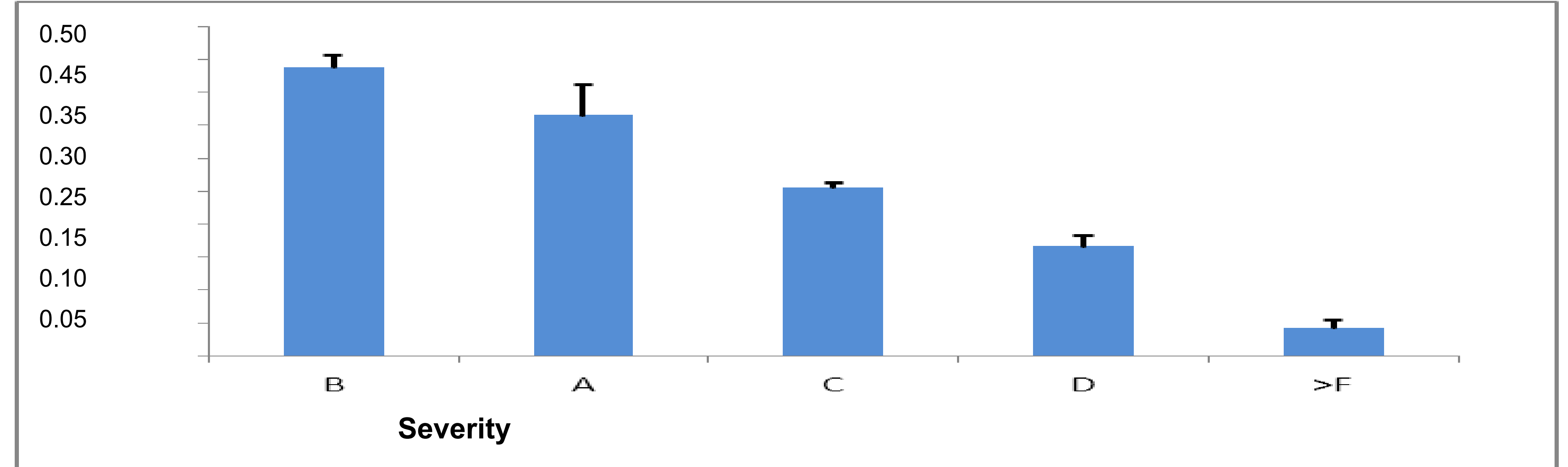


Figure 3. Severity score for medication I/A associated with drug dose documentation
 Legend: Medication I/A: medication incidents/accidents; A- B: Incidents; C- I: Accidents

Table 1. Types of medication I/A associated with drug dose documentation

Types of events	Medication I/A associated with drug dose documentation	Total	Proportion of medication I/A associated with drug dose documentation, [IC]
Error intercepted before drug administration	1082	2486	0.44 [0.42- 0.45]
Time/ date of administration	911	2247	0.41 [0.39- 0.43]
Drug omission	1771	4650	0.38 [0.37- 0.39]
Others errors due to medication	397	1088	0.36 [0.34- 0.39]
Disappearance/ count	1	4	0.25 [-0.17- 0.67]
Find	11	44	0.25 [0.12- 0.38]
Administration route	55	240	0.23 [0.18- 0.28]
Identity of the user	5	27	0.19 [0.04- 0.33]
Availability	4	24	0.17 [0.02- 0.32]
Known allergy	6	37	0.16 [0.04- 0.28]
Dose/rate	693	4818	0.14 [0.13- 0.15]
Type / sort / texture	374	2757	0.14 [0.12- 0.15]
Failure to comply with a procedure / protocol	53	508	0.10 [0.08- 0.13]
Conservation/ storage	3	30	0.10 [-0.01- 0.21]
Expired drug	34	569	0.06 [0.04- 0.08]
Infiltration/Extravasation	3	1069	0.003 [-0.004- 0.006]
Total	5403	20598	0.26 [0.26- 0.27]

Legend: Medication I/A: Medication Incidents/ Accidents