

Online Appendix. Additional results

SUPPLEMENTARY TABLE 1 Breakdown of drug classes frequently reported, and more likely to be associated with actual and potential medication errors in pediatrics in hospital setting

Breakdown of drug classes	n (%)
J01 (Antibacterials for systemic use)	121 (100)
J01XA01 (vancomycin)	27 (22.3)
J01CR02 (amoxicillin and beta-lactamase inhibitor)	16 (13.2)
J01CR05 (piperacillin and beta-lactamase inhibitor)	11 (9.1)
Others	67 (55.4)
N02 (Analgesics)	104 (100)
N02AA01 (morphine)	36 (34.6)
N02BE01 (paracetamol)	32 (30.8)
N02AF02 (nalbuphine)	15 (14.4)
Others	21 (20.2)
B05 (Blood substitutes and perfusion solutions)	94 (100)
B05BA10 (combinations of solutions for parenteral nutrition)	40 (42.6)
B05BA03 (carbohydrates)	11 (11.7)
B05BB02 (electrolytes with carbohydrates)	8 (8.5)
B05XA02 (sodium bicarbonate)	8 (8.5)
Others	27 (28.7)

SUPPLEMENTARY TABLE 2 Comparison of actual medication error reports with serious adverse drug reaction between pediatric and adult populations in hospital setting

Medication errors characteristics	Adult (N=375), n (%)	Pediatric (N=323), n (%)	aOR [95% CI] [‡]	p-value
Drug classes [†]				
Other ATC classes	229 (61.9)	169 (53.8)	Reference	N/A
N02 (Analgesics)	41 (11.1)	45 (14.3)	1.19 [0.70:2.02]	0.522
B05 (Blood substitutes and perfusion solutions)	21 (5.7)	43 (13.7)	3.02 [1.59:5.72]	0.001
J01 (Antibacterials for systemic use)	26 (7)	27 (8.6)	1.04 [0.54:1.99]	0.916
N05 (Psycholeptics)	23 (6.2)	20 (6.4)	1.31 [0.62:2.77]	0.483
C01 (Cardiac therapy)	30 (8.1)	10 (3.2)	0.48 [0.20:1.14]	0.096
Routes of administration [†]				
Oral route	96 (28.4)	82 (30)	N/A	N/A
Injectable route	231 (68.3)	181 (66.3)	N/A	N/A
Others	11 (3.3)	10 (3.7)	N/A	N/A
Stages of error				
Administration	308 (82.1)	231 (71.5)	N/A	N/A
Prescribing	43 (11.5)	50 (15.5)	N/A	N/A
Preparation	9 (2.4)	25 (7.7)	N/A	N/A
Dispensing	9 (2.4)	14 (4.3)	N/A	N/A
Others (including monitoring error)	6 (1.6)	3 (0.9)	N/A	N/A
Types of error [†]				
Wrong drug (including wrong form)	103 (27.5)	57 (17.8)	Reference	N/A
Wrong dose	122 (32.5)	173 (53.9)	2.89 [1.79:4.66]	<0.001
Wrong technique	15 (4)	23 (7.2)	2.28 [1.01:5.19]	0.049
Wrong route	20 (5.3)	20 (6.2)	2.74 [1.22:6.15]	0.015
Wrong duration/ wrong time	15 (4)	9 (2.8)	-	-
Wrong patient	24 (6.4)	2 (0.6)	-	-
Others (omission error, wrong rate, expired, deteriorated or not well conserved drug, other types)	76 (20.3)	37 (11.5)	0.84 [0.46:1.51]	0.556
Related causes [†]				
Product	36 (10)	29 (9.2)	N/A	N/A
Healthcare professionals	289 (80.3)	270 (85.7)	N/A	N/A
Patient	18 (5)	7 (2.2)	N/A	N/A
Others (including computerized system)	17 (4.7)	9 (2.9)	N/A	N/A

aOR: adjusted odds ratio; ATC: Anatomical Therapeutic Chemical classification system; CI: confidence interval; N/A: not applicable (reference, or not entered into the model, or excluded from the final model).

-: the result was not computed since the sample size was small.

[†]The sum of the frequencies in each group of population may be less than the total number of reports in this group due to missing data.

[‡]The multivariate analysis was adjusted for year, source of declarations and gender.

SUPPLEMENTARY TABLE 3 Classification of medication error reports regarding types of adverse drug reactions in pediatric and adult populations in hospital setting

Classification of error	Adult (N=779), n (%)	Pediatric (N=791), n (%)
Potential ME	44 (5.6)	34 (4.3)
Actual ME	735 (94.4)	757 (95.7)
Without ADR	155 (21.6)	286 (39)
With ADR	562 (78.4)	447 (61)
Not serious ADR	184 (32.9)	122 (27.4)
Serious ADR [†]	375 (67.1)	323 (72.6)
Hospitalization	179 (47.7)	148 (45.8)
Life-threatening event	71 (18.9)	60 (18.6)
Death	14 (3.7)	18 (5.6)
Congenital anomaly	0 (0)	2 (0.6)
Disability or incapacity	3 (0.8)	1 (0.3)
Other serious medical situation	151 (40.3)	129 (39.9)

ADR, adverse drug reaction; ME, medication error.

[†]Subtotals exceed the total as one error may have more than one serious adverse drug reaction.

Note: In the different categories, subtotals may not add up to totals due to missing data.

SUPPLEMENTARY TABLE 4 Breakdown of drug classes frequently reported, and more likely to be associated with actual and potential medication errors in pediatrics in community setting

Breakdown of drug classes	n (%)
J07 (Vaccines)	389 (100)
J07CA09 (diphtheria-haemophilus influenzae B-pertussis-poliomyelitis-tetanus-hepatitis B)	94 (24.2)
J07CA02 (diphtheria-pertussis-poliomyelitis-tetanus)	92 (23.7)
J07BD52 (measles, combinations with mumps and rubella, live attenuated)	53 (13.6)
Others	150 (38.6)
J01 (Antibacterials for systemic use)	157 (100)
J01CR02 (amoxicillin and beta-lactamase inhibitor)	50 (31.8)
J01CA04 (amoxicillin)	48 (30.6)
J01DD13 (cefepodoxime)	26 (16.6)
Others	33 (21)
D08 (Antiseptics and disinfectants)	109 (100)
D08AC02 (chlorhexidine)	54 (49.5)
D08AX01 (hydrogen peroxide)	43 (39.4)
Others	12 (11)

SUPPLEMENTARY TABLE 5 Comparison of actual medication error reports with serious adverse drug reaction between pediatric and adult populations in community setting

Medication errors characteristics	Adult (N=491), n (%)	Pediatric (N=331), n (%)	aOR [95% CI] [‡]	p-value
Drug classes [†]				
Other ATC classes	275 (57.1)	176 (54.5)	Reference	N/A
N02 (Analgesics)	121 (25.1)	50 (15.5)	0.64 [0.42:0.99]	0.042
N05 (Psycholeptics)	28 (5.8)	41 (12.7)	2.42 [1.36:4.31]	0.003
J07 (Vaccines)	12 (2.5)	19 (5.9)	10.4 [3.54:30.6]	<0.001
D08 (Antiseptics and disinfectants)	14 (2.9)	19 (5.9)	1.34 [0.56:3.23]	0.511
N03 (Antiepileptics)	32 (6.6)	18 (5.6)	0.88 [0.46:1.69]	0.698
Routes of administration [†]				
Oral route	341 (75.6)	217 (70.2)	Reference	N/A
Injectable route	58 (12.9)	31 (10)	0.28 [0.13:0.61]	0.001
Others	52 (11.5)	61 (19.7)	1.50 [0.87:2.57]	0.146
Stages of error [†]				
Administration	391 (79.8)	262 (79.6)	N/A	N/A
Dispensing	51 (10.4)	38 (11.6)	N/A	N/A
Prescribing	34 (6.9)	20 (6.1)	N/A	N/A
Preparation	6 (1.2)	8 (2.4)	N/A	N/A
Others (including monitoring error)	8 (1.6)	1 (0.3)	N/A	N/A
Types of error [†]				
Wrong drug (including wrong form)	115 (23.5)	96 (29)	Reference	N/A
Wrong dose	275 (56.1)	175 (52.9)	0.98 [0.65:1.46]	0.902
Wrong technique	11 (2.2)	18 (5.4)	2.42 [0.98:5.99]	0.057
Wrong duration/ wrong time	17 (3.5)	15 (4.5)	1.06 [0.45:2.50]	0.887
Wrong patient	13 (2.7)	7 (2.1)	-	-
Wrong route	14 (2.9)	5 (1.5)	-	-
Others (omission error, wrong rate, expired, deteriorated or not well conserved drug, other types)	45 (9.2)	15 (4.5)	0.42 [0.19:0.89]	0.024
Related causes [†]				
Product	49 (10.4)	39 (12.5)	N/A	N/A
Patient	310 (65.5)	207 (66.1)	N/A	N/A
Healthcare professionals	108 (22.8)	63 (20.1)	N/A	N/A
Others (including computerized system)	6 (1.3)	4 (1.3)	N/A	N/A

aOR: adjusted odds ratio; ATC: Anatomical Therapeutic Chemical classification system; CI: confidence interval; N/A: not applicable (reference or not entered into the model).

-: the result was not computed since the sample size was small.

[†]The sum of the frequencies in each group of population may be less than the total number of reports in this group due to missing data.

[‡]The multivariate analysis was adjusted for year, source of declarations and gender.

SUPPLEMENTARY TABLE 6 Classification of medication error reports regarding types of adverse drug reactions in pediatric and adult populations in community setting

Classification of error	Adult (N=1,607), n (%)	Pediatric (N=1,541), n (%)
Potential ME	25 (1.6)	61 (4)
Actual ME	1,582 (98.4)	1,480 (96)
Without ADR	262 (17.3)	605 (41.8)
With ADR	1,251 (82.7)	842 (58.2)
Not Serious ADR	757 (60.7)	511 (60.7)
Serious ADR [†]	491 (39.3)	331 (39.3)
Hospitalization	194 (39.5)	146 (44.1)
Life-threatening event	32 (6.5)	19 (5.7)
Death	13 (2.6)	2 (0.6)
Disability or incapacity	1 (0.2)	2 (0.6)
Other serious medical situation	272 (55.4)	173 (52.3)

ADR, adverse drug reaction; ME, medication error.

[†]Subtotals exceed the total as one error may have more than one serious adverse drug reaction.

Note: In the different categories, subtotals may not add up to totals due to missing data.