THE (IN-)APPROPRIATENESS OF EMERGENCY DEPARTMENT USE AMONG PAEDIATRIC PATIENTS IN 12 BELGIAN HOSPITALS

BePASSTA
Belgian paediatric short stay study

Service public fédéral
SANTE PUBLIQUE,
SECURITE DE LA CHAINE ALIMENTAIRE
ET ENVIRONNEMENT

ACKNOWLEDGMENT
This study was funded by the Belgian Ministry of Public Health

CONFERENCE

40e CONGRÈS ANNUEL DE LA SOCIÉTÉ BELGE DE PÉDIATRIE
Nouvelles (in)certitudes en pédiatrie / Nieuwe (on)zekerheden in de Kindergeneeskunde
23-24 mars 2012, Bruxelles

AUTHORS

Benahmed N*, Laokri S*, Zhang WH#, Cohen L*, Verhaeghe N°, Trybou J°, De Wever A*, Alexander S# and BePASSTA study group.

* CREGSI (Research Center for Health Economics, Health Facilities Management and Nursing Sciences) School of Public Health, Université Libre de Bruxelles (ULB), Belgium
# Perinatal Epidemiology and Reproductive Health Unit, School of Public Health, Université Libre de Bruxelles (ULB), Belgium
° Department of Public Health, Ghent University, Belgium; Interuniversity Centre for Health Economics Research (I-CHER)

CORRESPONDING AUTHOR

Benahmed Nadia nadia.ben.hamed@ulb.ac.be

OBJECTIVE
To evaluate paediatric inappropriate rate of emergency departments (ED) and to determine associated factors.

METHOD
An observational prospective survey was performed in 12 Belgian hospitals during a two-week period in autumn 2010. All children (< 15 years) attending ED were included. At least one of the following criteria had to be met for considering an emergency attendance as appropriate: child referred by doctor or police, brought by ambulance, need technical examination, orthopaedic treatment, medical observation, in-patient or death. Crude odds ratios and 95% confidence intervals [CI] were calculated. Logistic regression was used to adjust for potential confounding factors.

RESULTS
Overall, 3117 children were included in the study, the median age was 3.3 years (Interquartile range (IQR) 7). Among them, 53.5% were male. One patient died during the recording period. The characteristics of the attendances are presented in **figure 1**.

The inappropriate use rate was 39.9% (1244 cases). The median length of stay was 40 minutes (IQR 48) for inappropriate and 98 minutes (IQR 100) for appropriate visit (p <0.001). The relationships between chronic condition or gender with inappropriate use were no statistically significant (respectively p=0,378 and p=0,443).
The multivariate model showed that disadvantaged families did not present a higher risk for inappropriate use after controlling for other variables. The associated factors with the inappropriate use are presented in **table 1**.

Figure 1: Characteristics of the ED attendances

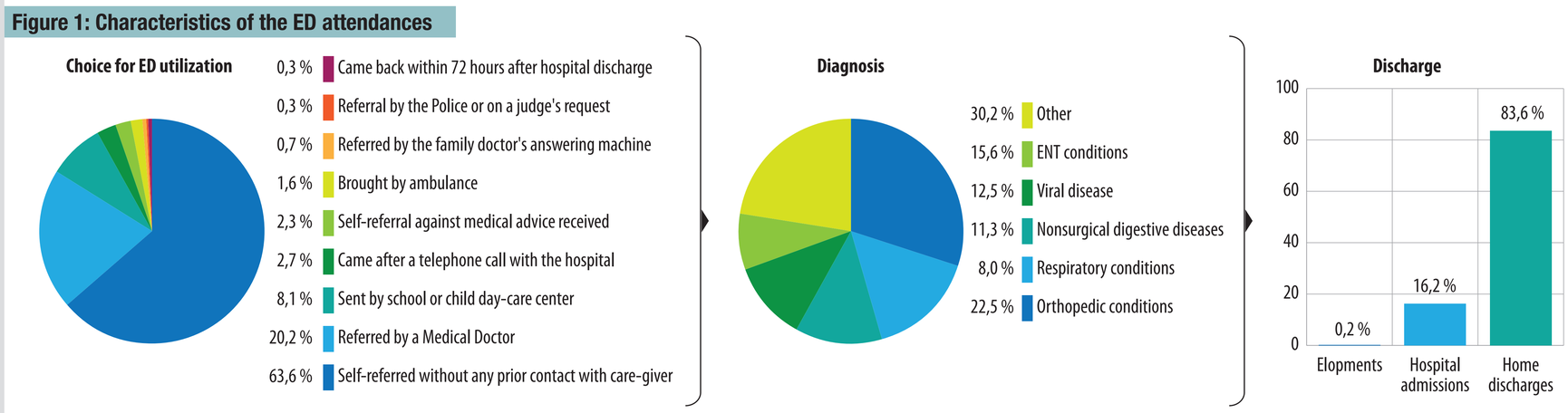

Table 1: Relationship of explanatory variables with the inappropriateness of ED utilizations (n=1,641)

Inappropriateness rate 39.9 %

Variables		n	Adjusted OR (95% IC)*		p
Age (years)	< 2	1 970	1.7	(1.4-2.1)	< 0.001
	≥ 2	1 147	1		
Registered Family Doctor	Yes	2 659	1.7	(1.2-2.5)	0.004
	No	380	1		
Distance to ED	< 30 min	2 380	1.7	(1.3-2.2)	< 0.001
	≥ 30 min	436	1		
Perceived urgency	Extreme-Vital	233	0.6	(0.4-0.9)	0.020
	Other	2 656	1		
Hospital setting	Flanders region	1 189	0.6	(0.5-0.8)	< 0.001
	Other	1 928	1		
Out-of-hours visit	Yes	1 270	1.5	(1.2-1.9)	< 0.001
	No	1 825	1		

**Adjusted ORs were estimated with logistic regression controlling for all the variables presented in the table*
Comment: After adjustment, the insurance status has no more impact on the appropriateness of A&E use

Table 2: Prevalence of pediatric non-urgent ED visits in France, UK, Australia, Italie, USA and Belgium

Author	Country	Age (years)	Non-urgent visit (%)
Devictor et al (1995) [1]	France	-	18,7-28,6
Beattie et al (2001) [2]	UK	< 13	19,6
Kennedy et al (2004) [3]	UK	< 14	49
Cooper et al (2003) [4]	Australie	≤ 14	51,8
Pileggi et al (2006) [5]	Italie	≤ 16	27,6
Fong (1999) [6]	USA	≤ 15	58
Phelps et al (2000) [7]	USA	≤ 16	65
Pomerantz et al (2002) [8]	USA	< 0,25	20,4
Mistry et al (2005) [9]	USA	-	41,8-51,6
Brousseau et al (2007) [10]	USA	< 17	43
Sturm (2010) [11]	USA	-	47
BePASSTA Study (2010)	**Belgium**	**≤ 15**	**39,9**

DISCUSSION
As shown in **table 2**, the prevalence of inappropriate use for pediatric patients varies largely in function of the definition of appropriateness, pediatric patient and the organization and provision of health care. However, developing actions are needed to improve the access to primary care, to educate patients and to aware primary care providers.

CONCLUSIONS
Almost 40% of all paediatric ED attendances have not required hospital expertise. The risk of an inappropriate use of ED by paediatrician patients is predominantly associated with organizational and cultural factors. Access, equity, quality of care, and medical human resources availability have to be taken into account to design financially sustainable model of care for those patients. Furthermore, future research is needed to explain reasons why parents visit ED rather than using of primary care services.

[1] Devictor D, Cosquer M, Saint-Martin J. L'accueil des enfants aux urgences : résultats de deux enquêtes nationales 'un jour donné'. Arch Péd. 1997(4) :21-26

[2] Beattie TF, Gorman DR, Walker JJ. The association between deprivation levels, attendance rate and triage category of children attending a children's accident and emergency department. Emerg Med J. 2001;18(2):110-1

[3] Cooper C, Simpson JM, Hanson R. The district hospital emergency department: Why do parents present? Emerg Med (Fremantle). 2003; 15(1):68-76.

[4] Fong C. The influence of insurance status on nonurgent pediatric visits to the emergency department. Acad Emerg Med. 1999; 6(7):744-8.

[5] Pileggi C, Raffaele G, Angelillo IF. Paediatric utilization of an emergency department in Italy. Eur J Public Health. 2006;16(5):565-9.

[6] Fong C. The influence of insurance status on nonurgent pediatric visits to the emergency department. Acad Emerg Med. 1999; 6(7):744-8.

[7] Phelps et al. Factors associated with emergency department utilization for nonurgent pediatric problems. Arch. Fam. Med.2000;9:1086-1092.

[8] Pomerantz WJ et al. Characteristics of nonurgent emergency department use in the first 3 months of live. Pediatr. Emerg. Care. 2002;18(6):403-8.

[9] Mistry RD. Association between parental and childhood emergency department utilization. Pediatrics. 2005 Feb;115(2):e147-51.

[10] Brousseau DC. et al. Quality of primary care and subsequent pediatric emergency department utilization. Pediatrics. 2007; 119(6):1131-1138.

[11] Sturm JJ et al. Practice characteristics that influence nonurgent pediatric emergency department utilization. Acad Pediatr. 2010; 10(1):70-4.

Poster : Nathalie da Costa Maya, CDCS asbl, Bruxelles, Mars 2012