

Pediatric drug-related problems: a multicenter study in four French-speaking countries

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Abstract

Background: Pediatric intensive care patients represent a population at high risk for drug-related problems. There are few studies that compare the activity of clinical pharmacists between countries.

Objective: To describe the drug-related problems identified and interventions by four pharmacists in a pediatric cardiac and intensive care unit.

Setting: Four pediatric centers in France, Quebec, Switzerland and Belgium.

Method: This was a six-month multicenter, descriptive and prospective study conducted from August 1, 2009 to January 31, 2010. Drug-related problems and clinical interventions were compiled from four pediatric centers in France, Quebec, Switzerland and Belgium. Data on patients, drugs, intervention, documentation, approval and estimated impact were compiled.

Main outcome measure Number and type of drug-related problems encountered in a large pediatric inpatient population.

Results: A total of 996 interventions were recorded: 238 (24 %) in France, 278 (28 %) in Quebec, 351 (35 %) in Switzerland and 129 (13 %) in Belgium. These interventions targeted 270 patients (median 21 months old, 53 % male): 88 (33 %) in France, 56 (21 %) in Quebec, 57 (21 %) in Switzerland and 69 (26 %) in Belgium. The main drug-related problems were inappropriate administration technique (29 %), untreated indication (25 %) and supra-therapeutic dose (11 %). The pharmacists' interventions were mostly optimizing the mode of administration (22 %), dose adjustment (20 %) and therapeutic monitoring (16 %). The two major drug classes that led to interventions were anti-infectives for systemic use (23 %) and digestive system and metabolism drugs (22 %). Interventions mainly involved residents and all clinical staff (21 %). Among the 878 (88 %) proposed interventions requiring physician approval, 860 (98 %) were accepted.

Conclusion: This descriptive study illustrates drug-related problems and the ability of clinical pharmacists to identify and resolve them in pediatric intensive care units in four French-speaking countries.

Keywords: Drug-related problems, Pediatric intensive care unit, Pharmaceutical care.