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Przyczyny porad ambulatoryjnych pacjentów Dziecięcego Szpitala Klinicznego w Lublinie w latach 2004-2006

Streszczenie

Cel. Celem pracy była analiza dokonywanych porad ambulatoryjnych w Szpitalnym Oddziale Ratunkowym Dziecięcego Szpitala Klinicznego w Lublinie.

Materiał i metody. Przyczyny porad podzielono na siedem grup. Wyodrębniono porady dotyczące: zachorowań chirurgicznych, urazów, oparzeń termicznych, wypadków komunikacyjnych, porad pediatrycznych, laryngologicznych oraz zatruc.

Wyniki. W analizowanym okresie zarejestrowano ogólny wzrost ilości porad ambulatoryjnych. Najwięcej odnotowano porad z zakresu chirurgii urazowej (44,3% wszystkich wizyt). Liczba ich systematycznie wzrastała w analizowanym okresie, średnia ilość w ciągu dnia wynosiła 23 porady. Drugą co do częstości rejestrowanych wizyt ambulatoryjnych były porady pediatryczne (29,2% wszystkich porad). Średnia ilość porad w ciągu dnia wynosiła 15. Analizując średnią liczbę porad w ciągu doby z uwzględnieniem dni tygodnia, stwierdzono, że najwięcej wizyt było w soboty najmniej w czwartki. Najwięcej wizyt notowano w maju i czerwcu, najmniej w lipcu i sierpniu.

Causes of visits to outpatient pediatric clinic at University Children's Hospital of Lublin in 2004-2006

Abstract

Aim. The aim of the study was to analyze the structure of visits to the Outpatient Pediatric Clinic at the University Children's Hospital of Lublin.

Material and methods. Seven main reasons for a visit to the outpatient pediatric clinic were identified: surgical illnesses, trauma, burns, road traffic accidents, pediatric illnesses, otolaryngological illnesses and poisoning.

Results. Within the analyzed period of time a general increase in the number of visits to the outpatient clinic was observed. The most frequent principal reasons for visit were surgical illnesses (44.3% of all the recorded visits). The number of such visits in the analyzed period of time was systematically increasing, and there were 23 surgical visits per day on average. The second most frequent reasons for visit to outpatient pediatric clinic were pediatric illnesses (29.2% of all the recorded visits) and the average number of such visits per day was 15. The average number of visits due to all the reasons listed above within a 24-hour period was the highest on Saturdays and the lowest on Thursdays. Regardless the year and the reason, visits to the pediatric outpatients clinic were most frequent in May and June and least frequent in July and August.

Słowa kluczowe: porady ambulatoryjne, dzieci, szpitalny oddział ratunkowy.

Key words: outpatient clinic visits, children, emergency department.

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INTRODUCTION

Primary care in children should be provided by Children's Specialist Clinics and sometimes by general practitioners. Diagnosis and treatment of all small patients is different in many ways for diagnosis and treatment in adults, and thus may cause difficulties for a GP. This is the reason why in some cases the first contact with a pediatrician takes place in hospital. Thus emergency departments at a children's hospital play the role of Children's Specialist Clinic. Within the period of time covered by our study a significant increase in the number of outpatients consultations due to typical children's diseases was observed.

AIM

The aim of the study was to assess health problems in children on the basis of the most frequent reasons for visits to the Emergency Department at the University Children's Hospital of Lublin in 2004-2006.

MATERIAL AND METHODS

Data from the Emergency Department of the Children's Hospital of Lublin from 2004 to 2006 were evaluated in order to analyze the numbers and reasons for a visit to this facility that may be described as Children's Specialist Clinic. Causes of visits were divided into seven categories: surgical illnesses (not related to trauma), traumas, burns, road traffic accidents, pediatric illnesses, otolaryngological illnesses and poisonings. The analysis was performed, taking into consideration months and days of the week. One-way ANOVA was used to assess the collected data ($\alpha=5\%$).

RESULTS

Within the analyzed period of time, there were 56,874 visits to the Emergency Department at the University Children's Hospital of Lublin: 17,819 (31.3%), 19,121 (33.6%) and 19,934 (35.1%) in 2004, 2005 and 2006, respectively. A decrease in the number of surgical visits between 2004 (37.7%) and 2005 (30.8%), and 2006 (31.5%)

was observed. The number of visits related to trauma was systematically increasing from 7,846 (31.1%) in 2004 to 8,549 (33.9%) in 2005, and 8,823 (35.0%) in 2006. In 2005, there were 218 visits to the Emergency Department due to road traffic accidents, which was a more than two-fold increase in comparison to 2004 (84 visits), and in 2006 a decrease was observed (99 visits). There were 4,849 (29.2%), 5,560 (33.5%) and 6,193 (37.3%) pediatric visits in 2004, 2005 and 2006, respectively. All the data described above are presented in Table 1.

The analysis of the mean number of visits per day revealed that trauma visits were most frequent – there were 23 such visits per day on average within the analyzed period of time. The mean number of trauma visits within each year of the whole analyzed period 2004, 2005, and 2006 was 21.5, 23.4 and 24.17, respectively. The second most frequent reasons for a visit to the outpatient pediatric clinic were pediatric illnesses (29.2% of all the recorded visits), and the average number of such visits per day was 15.16. (Table 2).

An increase in the number of pediatric visits was statistically significant (Figure 1). The number of visits due to surgical illnesses (not related to trauma) was decreasing between 2004 and 2005, and 2006, and this phenomenon was statistically significant (Figure 2). The analysis according to the day of the week revealed that visits were most frequent on Saturdays and least frequent on Thursdays. Surgical visits were most frequent on Saturdays, Sundays and Mondays, and least frequent on Wednesdays and Thursdays, and this difference was statistically significant ($p<0.05$). Trauma visits were least frequent on Wednesdays and Tuesdays, and most frequent on Saturdays and Mondays, which was statistically significant ($p<0.005$). Visits for pediatric reasons were most frequent on Saturdays and Sundays, and least frequent on Thursdays and Tuesdays, and this difference was statistically significant as well ($p<0.005$). Visits to the outpatient clinic related to road traffic accidents were most frequent on Tuesdays and least frequent on Wednesdays and Thursdays, and this phenomenon was not statistically significant. All the data described above is presented in Table 3.

Taking into consideration the month of the visit, we discovered that visits to the Outpatient Clinic of the Children's Hospital of Lublin were, regardless the year, most frequent in May (8.65) and June (8.23), and least frequent in July (6.77) and August (6.22). Visits due to surgical illnesses

FIGURE 1. The mean number of pediatric visits. Differences between 2004, 2005 and 2006 are statistically significant ($p=0.000$) Data: 2004-13.28, 2005-15.27, 2006-16.97.

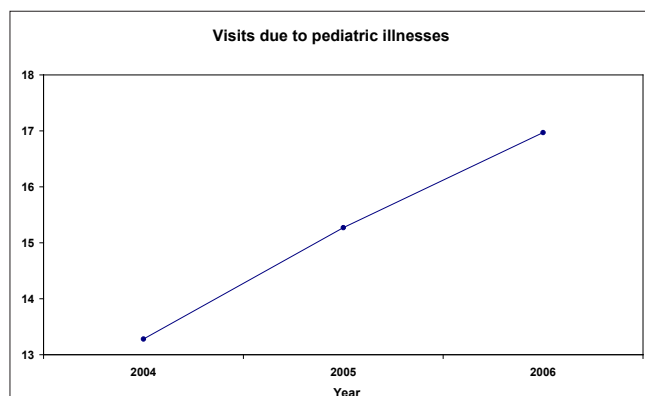


FIGURE 2. The mean number of visits due to not-trauma related surgical illnesses. Differences between 2004 and 2005 and 2006 are statistically significant ($p=0.000$). Data: 2004- 8.97, 2005-7.34, 2006-7.51.

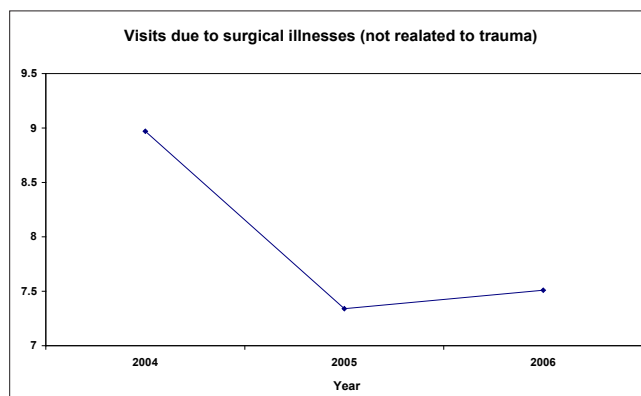


TABLE 1. The number of visits to Emergency Department of Children's Hospital of Lublin in 2004 -2006.

Reason for visit Year	Surgical illnesses	Traumas	Road traffic accidents	Burns	Pediatric illnesses	Otolaryngological illnesses	Poisonings	Total
2004	3,275	7,846	84	217	4,849	1,513	35	17,819
%	18.4%	44.0%	0.5%	1.2%	27.2%	8.5%	0.2%	100%
%	37.7%	31.1%	20.9%	29.7%	29.2%	30.0%	18.5%	31.3%
2005	2,680	8,549	218	271	5,560	1,735	108	19,121
%	14.0%	44.7%	1.1%	1.5%	29.1%	9.1%	0.6%	100%
%	30.8%	33.9%	54.4%	37.1%	33.5%	34.5%	57.1%	33.6%
2006	2,742	8,823	99	243	6,193	1,788	46	19,934
%	13.8%	44.3%	0.5%	1.2%	31.0%	9.0%	0.2%	100%
%	31.5%	35.0%	24.7%	33.2%	37.3%	35.5%	24.3%	35.1%
Total	8,697	25,218	401	731	16,602	5,036	189	56,874
	15.3%	44.3%	0.7%	1.3%	29.2%	8.9%	0.3%	100%
	100%	100%	100%	100%	100%	100%	100%	100%

TABLE 2. The mean number of visits to Emergency Department of Children's Hospital of Lublin in 2004 -2006 per day.

Reason for visit	2004	2005	2006	Mean value
Pediatric illnesses	13.28	15.23	16.97	15.16
Otolaryngological illnesses	4.15	4.75	4.90	4.60
Surgical illnesses	8.97	7.34	7.51	7.94
Traumas	21.50	23.42	24.17	23.03
Burns	0.59	0.74	0.67	0.67
Road traffic accidents	0.23	0.60	0.27	0.37
Poisonings	0.10	0.30	0.13	0.17

TABLE 3. Mean number of visits per day in 2004-2006 – taking day of the week into consideration.

Reason	Surgical illnesses p<0.05	Traumas p<0.05	Road traffic accidents	Burns	Pediatric illnesses p<0.005	Otolaryngological illnesses p<0.05	Poisonings	Total
Monday	8.9	23.32	0.23	0.50	13.65	4.54	0.15	7.33
Tuesday	7.63	22.21	0.68	0.50	12.49	4.32	0.09	6.85
Wednesday	7.03	22.05	0.26	0.55	13.16	3.90	0.13	6.73
Thursday	7.51	23.15	0.25	0.51	11.66	3.90	0.09	6.72
Friday	7.90	23.62	0.35	0.62	14.35	4.71	0.12	7.38
Saturday	8.32	24.34	0.43	0.87	19.05	5.89	0.55	8.49
Sunday	8.30	22.52	0.35	1.12	21.12	4.94	0.09	8.35
Total	7.94	23.03	0.37	0.67	15.06	4.60	0.17	7.40

were most frequent in January (11.62) and February (10.36), and least frequent in July (6.49) and August (6.66). Trauma was observed most frequently in the period from April (25.06) to June (28.78), in September (27.47) and in October (25.46) and least frequently in January (17.36), February (18.67), March (18.90) and December (19.14). Visits for pediatric reasons were more frequent in the period from March (18.03) to June (15.76), and in October (15.83) and December (17.51). Visits due to otolaryngological reasons were least frequent in August (3.53) and most frequent in December (5.61). The data is presented in Table 4.

DISCUSSION

The functioning of pediatric primary health care should be based on specialist outpatient clinics and the pediatrician should be the one who is responsible for such care. Anatomic as well as physiological differences in children require different a therapeutic approach than in adults, and such differences are causes of diagnostic and therapeutic problems that a general practitioner may encounter. Although children and adolescents constitute 25% of the Polish citizens, the development of pediatric primary health care is less than satisfactory. After the major health system reform in most regions of Poland,

TABLE 4. The mean number of visits per day in 2004-2006 – according to the month.

Reason	Surgical illnesses p<0.005	Traumas p<0.05	Road traffic accidents	Burns	Pediatric illnesses p<0.005	Otolaryngological illnesses p<0.005	Poisonings	Total
I	11.62	17.36	0.11	0.62	14.43	4.78	0.12	7.01
II	10.36	18.67	1.01	0.46	14.20	4.27	0.12	7.01
III	7.18	18.90	0.19	0.46	18.03	4.53	0.12	7.06
IV	6.56	25.06	0.31	0.65	14.98	4.67	0.09	7.47
V	7.45	30.30	0.49	0.74	16.37	5.02	0.15	8.65
VI	7.44	28.78	0.38	0.74	15.76	4.44	0.09	8.23
VII	6.49	22.00	0.66	0.80	12.71	4.49	0.24	6.77
VIII	6.66	21.29	0.36	0.78	12.85	3.53	0.14	6.52
IX	8.03	27.47	0.32	0.66	13.73	4.46	0.12	7.83
X	8.04	25.46	0.26	0.58	15.83	4.93	0.09	7.88
XI	7.98	21.88	0.16	0.72	15.49	4.41	0.62	7.33
XII	7.67	19.14	0.18	0.78	17.51	5.61	0.18	7.30
Total	7.94	23.03	0.37	0.67	15.06	4.60	0.17	7.42

specialist outpatient clinics and school-based health centers were liquidated, and general practitioners became responsible for pediatric care [1]. Due to this fact a first contact between a child and a pediatrician occurs only in hospital, at the pediatric department. As a result, an increase in the number of visits related to different pediatric illnesses in hospital's emergency departments is observed [1]. It leads to an increased number of admissions to hospitals not due to children's state of health, but to mistakes resulting from health care organization. The lack of professional pediatric care leads to misdiagnosis as well as to delayed diagnosis.

The analysis of outpatients visits in a 3-year period (2004-2006) of our study revealed an increase in the number of visits from 29.2% to 37.3%. Visits related to trauma were most frequent per day, and the mean number of such visits was 23.

Accidents and traumas are the leading causes of morbidity and mortality among children, and thus cause a serious health as well as socio-economic problem [2, 3]. Trauma may occur at school and at home, and lacerations and bruises are most common types of trauma [4]. The head and the neck seem to be injured most often, and the falls are most common causes of injuries [5-7]. In our study, trauma visits were most frequent on weekends, with a peak on Saturdays. Within the year, trauma visits were most frequent in May and June – in the months where outdoor activities are most popular. Such visits were much less frequent during the cold weather months from November to March. In the study of Reinberg, a weekly rhythm of visits was not observed and visits were most frequent in June [8].

The second most frequent reasons to visit the outpatients clinic were pediatric illnesses. According to the literature review, respiratory tract infections are most common reasons to visit a pediatrician. They account for more than a half of all infections, and are the main cause of fever in infants and small children. [9]. The pattern of respiratory tract diseases in

children and adults differ greatly. Respiratory tract diseases are an essential health problem in children and adolescents due to the common occurrence of respiratory tract infections, as well as diseases like asthma and cystic fibrosis. Asthma seems to be one of the biggest problems, since it is the most common chronic disease in adolescents. Due to physiological immaturity of the immune system and to environmental risk factors (daycare or kindergarten), children aged 2-5 are most vulnerable to respiratory tract infections. The most common causes of acute respiratory tract infections are viruses, mainly rhinoviruses, adenoviruses, coronaviruses, influenza and parainfluenza viruses, and RSV viruses [9, 10]. Our study revealed that visits related to pediatric diseases were most frequent on Sundays and Saturdays. It may be associated with a prolonged waiting time for a pediatric visit in primary care during the week or to the acute course of a disease that forces parents to seek specialist intervention promptly. No cases we analyzed led to hospitalization, and thus they cannot be treated as severe diseases. It appears that an increase in the number of visits on weekends may be related to difficulties in reaching a pediatrician on weekdays. According to other authors, upper respiratory tract diseases are most common in autumn and winter, and definitely more pervasive in day centers or kindergartens [9, 10]. This is congruent with our findings, since visits to the outpatient clinic due to pediatric reasons were most frequent in winter.

CONCLUSIONS

1. Within the analyzed period of time an increase in the number of outpatients visits was observed.
2. The most frequent causes of visits to the Children's Specialist Clinic were traumas and pediatric illnesses.
3. Visits to the Children's Specialist Clinic were most frequent on Saturdays and Sundays, and in May and June.

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